

Date of Report: 10/28/2019**BURNED-AREA REPORT****PART I - TYPE OF REQUEST****A. Type of Report**

- ☒ 1. Funding request for estimated emergency stabilization funds  
☐ 2. No Treatment Recommendation

**B. Type of Action**

- ☒ 1. Initial Request (Best estimate of funds needed to complete eligible stabilization measures)  
☐ 2. Interim Request # \_\_\_\_\_  
☐ Updating the initial funding request based on more accurate site data or design analysis

**PART II - BURNED-AREA DESCRIPTION****A. Fire Name:** Jordan Fire**B. Fire Number:** CA-INF-000903**C. State:** California**D. County:** Tulare**E. Region:** 05**F. Forest:** Inyo NF**G. District:** Mt. Whitney**H. Fire Incident Job Code:** P5L973**I. Date Fire Started:** 06/09/2019**J. Date Fire Contained:** 06/24/2019**K. Suppression Cost:** \$2,000,000.00**L. Fire Suppression Damages Repaired with Suppression Funds (estimates):** n/a

1. Fireline repaired (miles): n/a  
 2. Other (Identify): Click here to enter text.

**M. Watershed Numbers:***Table 1: Acres Burned by Watershed (all within the Ninemile Creek HUC 6 watershed)*

| HUC #        | Watershed Name | Total Acres | Acres Burned | % of Watershed Burned |
|--------------|----------------|-------------|--------------|-----------------------|
| 180300010401 | 1              | 112         | 56           | 50%                   |
| 180300010401 | 2              | 79          | 65           | 82%                   |
| 180300010401 | 3              | 112         | 68           | 59%                   |
| 180300010401 | 4              | 388         | 328          | 85%                   |

**N. Total Acres Burned:***Table 2: Total Acres Burned by Ownership*

| OWNERSHIP | ACRES |
|-----------|-------|
| NFS       | 588   |

| OWNERSHIP                             | ACRES |
|---------------------------------------|-------|
| OTHER FEDERAL (LIST AGENCY AND ACRES) |       |
| STATE                                 |       |
| PRIVATE                               |       |
| TOTAL                                 |       |

O. Vegetation Types: Chaparral, mixed conifer

P. Dominant Soils: Cagwin, Toem

Q. Geologic Types: Granitic

R. Miles of Stream Channels by Order or Class:

Table 3: Miles of Stream Channels by Order or Class

| STREAM TYPE    | MILES OF STREAM |
|----------------|-----------------|
| PERENNIAL      | 1.3             |
| INTERMITTENT   | 1.8             |
| EPHEMERAL      | 1.6             |
| OTHER (DEFINE) |                 |

S. Transportation System:

Trails: National Forest (miles): 0

Other (miles): 0

Roads: National Forest (miles): 0

Other (miles): 0

### PART III - WATERSHED CONDITION

A. Burn Severity (acres):

Table 4: Burn Severity Acres by Ownership

| Soil Burn Severity | NFS | Other Federal (List Agency) | State | Private | Total | % within the Fire Perimeter |
|--------------------|-----|-----------------------------|-------|---------|-------|-----------------------------|
| Unburned           | 84  |                             |       |         | 84    | 14%                         |
| Low                | 260 |                             |       |         | 260   | 44%                         |
| Moderate           | 226 |                             |       |         | 226   | 38%                         |
| High               | 18  |                             |       |         | 18    | 3%                          |
| Total              | 588 |                             |       |         | 588   |                             |

B. Water-Repellent Soil (acres): N/A

C. Soil Erosion Hazard Rating: N/A

D. Erosion Potential: N/A Sediment Potential: N/A

F. Estimated Vegetative Recovery Period (years): 3 - 5

G. Estimated Hydrologic Response (brief description): Overall the hydrologic response will be low due to the low amount of high and moderate burn relative to the low and unburned. The biggest increase in response will be from watershed 2, with a potential increase of 66%. Overall, the expected potential increase will be 29% for the whole fire area.

## **PART V - SUMMARY OF ANALYSIS**

### **Introduction/Background**

The Jordan Fire burned 588 acres within the Ninemile Creek watershed (HUC # 180300010401) in small sub watersheds south of Jordan Hot Springs near a peak called Manzanita Knob in the Southern Sierra Nevada Mountains. The fire area is located entirely within the Golden Trout Wilderness on Inyo National Forest. The fire burned within the footprint of the 2002 McNally fire, burning downed wood from large trees killed in that fire, along with a heavy understory of ground covering shrubs (Whitethorn and Manzanita communities). During the McNally fire, the area experienced a large amount of high burn severity where the majority of the tree canopy was consumed, leaving a skeleton forest. At the time of the fire, soils and vegetation were moist to very moist as a result of the above average precipitation of the previous rain season of 2018-19. However, large amounts of dead and downed wood from the McNally Fire helped carry the fire and heat that was able to burn the shrub communities, albeit slowly. The burned slopes are steep to very steep. Well-defined drainages exist on the slopes were enhanced during large storm events post-McNally fire. All of the burned drainages flow into Ninemile Creek, a tributary of the North Fork Kern River below the confluence of Redrock Creek.

### **Soils/Erosion Response Soils**

Soils in the fire area have a loamy sand non-cohesive surface texture, with various amounts of gravel and cobble. Rock Outcrop is a soil map unit component within the fire area. Rock outcrop areas can shed water onto burned hillslopes leading to increased rill and gully erosion on soils with an already rapid runoff potential. The Jordan fire burned within the footprint of the 2002 McNally fire. Pre-fire conditions included pockets of heavy fuel, a heavy shrub component and standing/downed dead trees. Erosion response is heavily influenced by soil burn severity, hillslope geomorphology, slope and surface texture. The burn affected soil aggregate stability, canopy cover, ground cover and infiltration rates. In areas of moderate and high burn severity, it is highly likely that increased rates of soil erosion and sediment delivery to stream channels will occur, for two or three years after the fire, particularly on steep slopes that contained shrubs and are slow to recover. Typically, in moderate and low severity areas needle cast helps mitigate post-fire erosion. Since this area burned intensely in 2002, needle cast is expected to be minimal in many areas of the fire.

This area has burned twice in the last 15 years. Recovery in the high and moderate burn severity areas may be slower due to soil loss and type conversion from the McNally fire. Recovery of high burn severity areas is generally slower because little or no ground cover remains, the potential for needle cast is low and soils may be negatively impacted by fire effects.

### ***Soil Burn Severity***

Soil burn severity was assessed by aerial reconnaissance, no ground observations were made. The original Burned Area Reflectance Classification (BARC) data was adjusted after the aerial reconnaissance and photo documentation interpretation showed lesser amounts of high and moderate burn severity acres and more low burn severity acres with the general presence of a mix of burn severity classes apparent within the fire area. There are a few smaller areas where high burn severity occurred where dead and downed fuels were abundant and were mostly consumed by the fire. Overall, the fire experienced a mix of moderate and low burn severity along with areas that did not burn or were lightly scorched. Missing ground cover also intermittently exists in the form of partially burned shrubs and downed trees, and bare areas are interspersed with large rock outcrops and rocky talus deposits.

Table 5. Soil Burn Severity - Affected Jordan Fire Watersheds

| Watershed       | Total Acres | Unburned Acres | Low Severity Acres | Moderate Severity Acres | High Severity Acres |
|-----------------|-------------|----------------|--------------------|-------------------------|---------------------|
| Watershed 1     | 112         | 59             | 30                 | 22                      | 1                   |
| Watershed 2     | 79          | 14             | 17                 | 32                      | 13                  |
| Watershed 3     | 112         | 58             | 35                 | 18                      | 1                   |
| Watershed 4     | 388         | 116            | 154                | 116                     | 2                   |
| All Fire Totals |             | 247            | 236                | 188                     | 17                  |

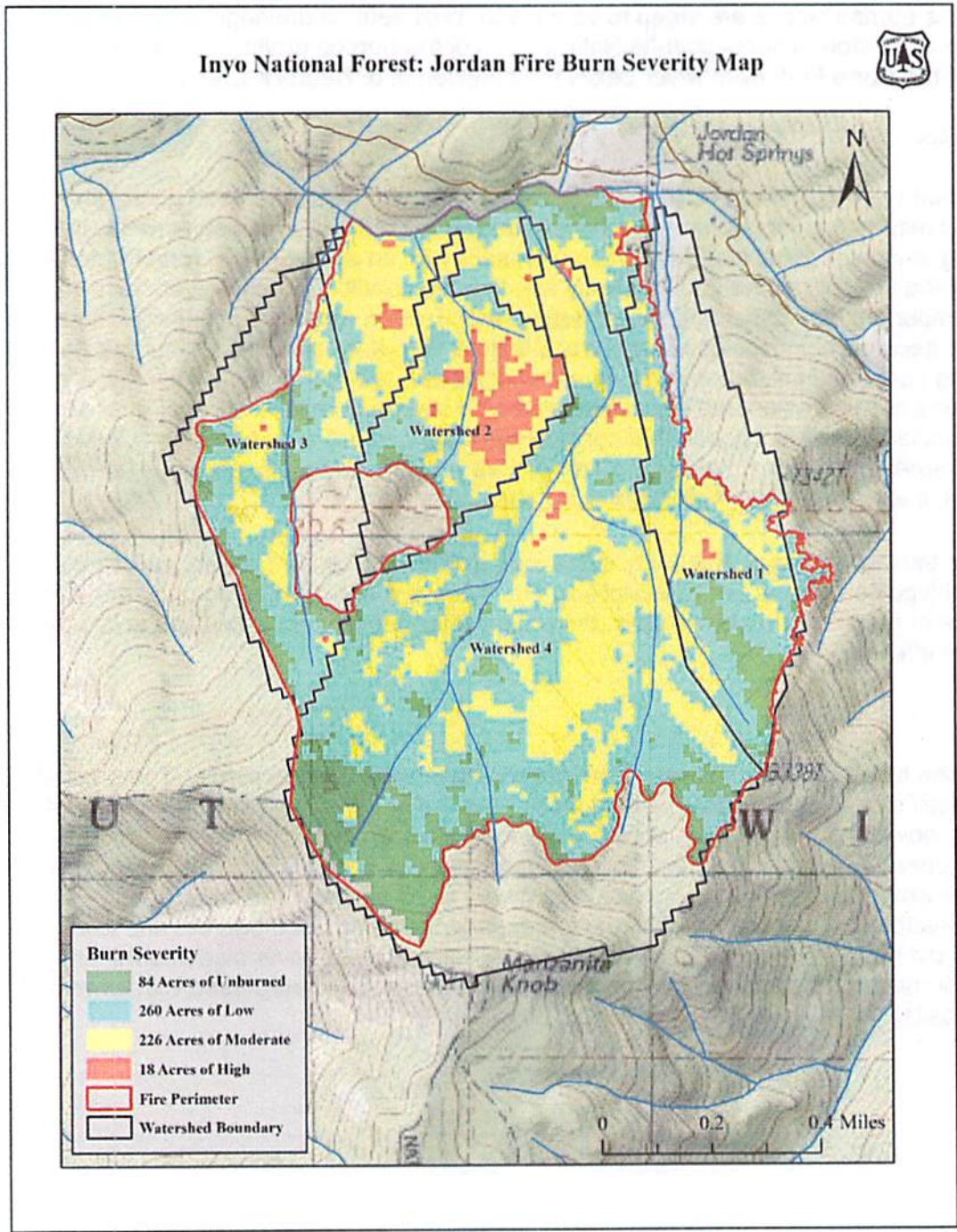


Figure 1. Map of the burn severity within the Jordan Fire. Ninemile Creek is at the north edge of the fire.

**Watershed Response:**

Minor and temporary episodes of elevated turbidity caused by ash and sediment could impact water quality in Ninemile Creek during post-fire storm events. These are expected to be moderate in severity and localized to Ninemile Creek below the fire area. Because of the large amount of flow in Ninemile Creek as compared to the relatively small amounts of inflow from the burn area acreage the effects of turbidity and sedimentation should disperse readily in the short term. In the event of an unusually large storm event, localized sedimentation and increased flow to Ninemile Creek below the fire would be higher, but would likely disperse over the reach toward the lower watershed and would at most very minimally impact the North Fork of the Kern River.

Table 6. Hydrologic modeling for the Jordan Fire

Fire Name

Jordan

|                      |      |
|----------------------|------|
| Mean Elevation (ft): | 7625 |
| Annual Precip (in):  | 30   |

Design Flow for 5 year storm (Sierras)

| Drainage    | Drainage Acres | Soil Burn Severity (acres) |     |          |      | Drainage Area (mi <sup>2</sup> ) | Elevation (ft) | Annual Precip (in) | In Cubic Feet per Second (cfs) |                       |              |              |                   |
|-------------|----------------|----------------------------|-----|----------|------|----------------------------------|----------------|--------------------|--------------------------------|-----------------------|--------------|--------------|-------------------|
|             |                | Unburned                   | Low | Moderate | High |                                  |                |                    | Pre fire Q5                    | Pre fire Q10          | Pre fire Q25 | Post fire Q5 | Change in Q5 Flow |
| Watershed 1 | 112            | 59                         | 30  | 22       | 1    | 0                                | 7625           | 30                 | 4.92                           | 8.82                  | 15.87        | 5.78         | 18%               |
| Watershed 2 | 79             | 14                         | 17  | 32       | 13   | 0                                | 7625           | 30                 | 4                              | 6                     | 12           | 6            | 66%               |
| Watershed 3 | 112            | 58                         | 35  | 18       | 1    | 0                                | 7625           | 30                 | 5                              | 9                     | 16           | 6            | 15%               |
| Watershed 4 | 388            | 116                        | 154 | 116      | 2    | 1                                | 7625           | 30                 | 15                             | 27                    | 48           | 19           | 24%               |
|             |                |                            |     |          |      |                                  |                |                    |                                |                       |              |              |                   |
|             |                |                            |     |          |      |                                  |                |                    |                                |                       |              |              |                   |
|             |                |                            |     |          |      |                                  |                |                    |                                |                       |              |              |                   |
|             |                |                            |     |          |      |                                  |                |                    |                                |                       |              |              |                   |
| Total Flow: |                |                            |     |          |      |                                  |                |                    | 13                             | Total Post Fire Flow: |              | 17           | 29%               |

Note: Average post fire flow increase for the Jordan Fire area watersheds are 29% increase for a 5 year, 2 hour duration storm event (1.25").

**Geology/Geologic Response:**

**Rock Fall:** Rock fall hazards are low in the fire area. Existing rock outcrops are mostly intact.

**Debris Flow:** There is a history of large fire related debris flows in the Ninemile Creek watershed based on observations made after the McNally fire of 2002. Due to the steep burned area of the Jordan Fire and large area of missing ground cover there is the potential for a debris flow event that may impact the Ninemile Creek Springs area below the fire. Jordan Hot Springs is used by equestrians who use the public pasture for stock, and hikers use the hot springs and for camping. The outflow area of Watershed 2 and Watershed 4 are downstream of the high use recreation area. Watershed 1 contains the meadow used for a public pasture. The meadow up stream of the main public pasture should attenuate any increases in flow. The risk for mud flow occurrence as a result of the fire is considered to be moderate two years following the fire and will decrease in year three.

**A. Describe Critical Values/Resources and Threats (narrative):**



Table 7: Critical Value Matrix

| 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 |

**1. Human Life and Safety (HLS):**

a. N/A

**2. Property (P):**

b. N/A

**3. Natural Resources (NR):**

**Water Quality/Aquatic Habitat:** Water quality in Ninemile Creek could be impacted by ash and sediment post-fire, and may have a slight to moderate impact on wild trout fishery.

**Invasive Weeds:**

**Inventory:** Invasive species with known occurrences within and immediately adjacent to the Jordan Fire are *Lepidium latifolium* (perennial pepperweed), *Bromus tectorum* (cheatgrass), and *Verbascum thapsus* (woolly mullein). Perennial pepperweed is a California state-listed Noxious Weed with high environmental impact. This species has a limited extent on the forest with only four known locations, and these infestations are being actively treated with the goal of eradication.

**Perennial pepperweed:** A known occurrence of perennial pepperweed is located just north of the fire perimeter at Jordan Hot Springs. This location was used as a helispot and water source. Two dip points were located in Ninemile Creek just downstream from Jordan Hot Springs. These dip points were located roughly 10 m and 150 m downstream from the occurrence. An additional dip point was located approximately 1.5 miles west of the fire at Soda Flat. This dip site was located ~250 m from a second known perennial pepperweed occurrence. It is possible that viable propagules from this species was in water dropped on the fire during suppression activities and this may be a vector for invasive species introduction to formerly weed-free sites.

**Cheatgrass:** Cheatgrass is located at the dip site in Ninemile Creek. It is possible that viable propagules from this species were in water and dropped on the fire during suppression activities. This may serve as a vector for invasive species introduction to formerly weed-free sites. A second cheatgrass occurrence is located along the Redrock Trail within the Indian Fire. This occurrence was mapped in 2002 and may have since spread into the McNally Fire footprint. It is unlikely that this second occurrence was impacted or further spread by fire suppression activities.

**Woolly mullein:** Woolly mullein is located at the dip site in Ninemile Creek just north of the fire perimeter. It is possible that viable propagules from this species were in water dropped on the fire during suppression activities. This may serve as a vector for invasive species introduction to formerly weed-free sites.

**Emergency Determination:**

Probability of damage or loss: Likely

Magnitude of Consequences: Moderate

Risk Level: High

**Cultural and Heritage Resources:**

Inyo National Forest watershed specialists reviewed the fire area and determined there was little to no potential for a future mass wasting/debris flow or hyperconcentrated flow event to adversely affect historic structures at Jordon Hot Springs. An on-the-ground assessment validated that assessment and determined that there is little to no risk of fire-killed trees within striking distance of any historic structures at the hot spring.

### Emergency Determination:

Probability of damage or loss: Unlikely

Magnitude of Consequences: Moderate

Risk Level: Low

### B. Emergency Treatment Objectives:

#### Threats to Ecosystem Stability

1. Determine if invasive species have been introduced or are expanding along hand lines, drainages, or Ninemile Creek due to fire disturbance and/or suppression activities.

#### Threats to Cultural Resources

1. Determine if there are fire-killed trees within striking distance of any historic structures at the hot spring.

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

Land N/A

Channel N/A

Roads/Trails N/A

Protection/Safety N/A

### D. Probability of Treatment Success

Table 8: Probability of Treatment Success

|                   | 1 year after<br>treatment | 3 years after<br>treatment | 5 years after<br>treatment |
|-------------------|---------------------------|----------------------------|----------------------------|
| Land              | 90                        | 90                         | 90                         |
| Channel           |                           |                            |                            |
| Roads/Trails      |                           |                            |                            |
| Protection/Safety |                           |                            |                            |

**E. Cost of No-Action (Including Loss):** An increased risk of Perennial Pepperweed impacting native plant and ecosystem recovery and wilderness character.

**F. Cost of Selected Alternative (Including Loss):** Decreased risk of Pepperweed spreading throughout the burned area; post-fire ecosystem recovery. **Skills Represented on Burned-Area Survey Team:**

- |   |   |                                      |   |   |
|---|---|--------------------------------------|---|---|
| <input checked="" type="checkbox"/> Soils | <input checked="" type="checkbox"/> Hydrology | <input type="checkbox"/> Engineering | <input checked="" type="checkbox"/> GIS | <input checked="" type="checkbox"/> Archaeology |
| <input checked="" type="checkbox"/> Weeds | <input type="checkbox"/> Recreation           | <input type="checkbox"/> Fisheries   | <input type="checkbox"/> Wildlife       |   |
| <input type="checkbox"/> Other:           |   |                                      |   |   |

**Team Leader:** Todd Ellsworth

**Email:** todd.ellsworth@usda.gov

**Phone(s):** 760-873-2457

**Forest BAER Coordinator:** Todd Ellsworth

**Email:** todd.ellsworth@usda.gov

**Phone(s):** 760-873-2457

**Team Members:** Table 9: BAER Team Members by Skill

| Skill        | Team Member Name            |
|--------------|-----------------------------|
| Team Lead(s) | Todd Ellsworth              |
| Soils        | Todd Ellsworth              |
| Hydrology    | Casey Shannon/Michael Wiese |
| Engineering  | n/a                         |
| GIS          | Michael Wiese               |
| Archaeology  | Jacqueline Beidl            |
| Weeds        | Blake Engelhardt            |
| Recreation   |                             |
| Other        |                             |

#### H. Treatment Narrative:

**Land Treatments:** Invasive weed early detection and rapid response: At minimum, survey 0.50 miles of Blackrock-Kern Trail, and Jordan Hot Springs. Small, isolated infestations will be eradicated by hand pulling. Fruiting individuals will be disposed of in garbage bags taken off site. Perennial pepperweed, a rhizomatous species, is most effectively controlled using herbicide. The Perennial Pepperweed Eradication on Blackrock-Kern and Wildrose Trails Environmental Assessment, completed in 2010, allows for herbicide treatment of perennial pepperweed populations located in the Golden Trout Wilderness along the Blackrock-Kern and Wildrose trail systems. Occurrences within the 2010 EA analysis area, including Jordan Hot Springs, and the Blackrock-Kern Trail, can be treated using the herbicide methods outlined in the EA. Any perennial pepperweed occurrences outside of the EA analysis area will be treated by hand pulling and/or cutting only.

| Weed Surveys and Rapid Response Costs |       |           |            |               |
|---------------------------------------|-------|-----------|------------|---------------|
| Item                                  | Unit  | Unit Cost | # of Units | Cost          |
| 1 GS-11 botanist                      | Day   | \$355     | 4          | \$1420        |
| 1 GS-7 weed technician                | Day   | \$196     | 4          | \$784         |
| Supplies                              | Each  | \$500     | 1          | \$500         |
| Vehicle gas mileage                   | Miles | \$0.50    | 700        | \$350         |
| Animal Packing/Packer                 | Day   | \$900     | 2          | \$1800        |
| Travel/Per Diem                       | Day   | \$55      | 8          | \$440         |
| <b>Total Cost</b>                     |       |           |            | <b>\$5294</b> |

**Channel Treatments:** Click here to enter text.**Roads and Trail Treatments:** Click here to enter text.**Protection/Safety Treatments:** Click here to enter text.**I. Monitoring Narrative:** Click here to enter text.



**PART VI – EMERGENCY STABILIZATION TREATMENTS AND SOURCE OF FUNDS**

|  |        |  |  |         |     |  |     |  |     |         |
|--|--------|--|--|---------|-----|--|-----|--|-----|---------|
|  |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <i>Insert new items above this line!</i> |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <i>Subtotal Land Treatments</i>          |        |  |  | \$5,292 | \$0 |  | \$0 |  | \$0 | \$5,292 |
| <b>B. Channel Treatments</b>             |        |  |  |         |     |  |     |  |     |         |
|  |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
|  |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <i>Insert new items above this line!</i> |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <i>Subtotal Channel Treatments</i>       |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <b>C. Road and Trails</b>                |        |  |  |         |     |  |     |  |     |         |
|  |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
|  |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <i>Insert new items above this line!</i> |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <i>Subtotal Road and Trails</i>          |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <b>D. Protection/Safety</b>              |        |  |  |         |     |  |     |  |     |         |
|  |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
|  |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <i>Insert new items above this line!</i> |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <i>Subtotal Protection/Safety</i>        |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <b>E. BAER Evaluation</b>                |        |  |  |         |     |  |     |  |     |         |
| Initial Assessment                       | Report |  |  |         | \$0 |  | \$0 |  | \$0 | \$2,500 |
| BAER Team asses.                         |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <i>Insert new items above this line!</i> |        |  |  | ---     | \$0 |  | \$0 |  | \$0 | \$0     |
| <i>Subtotal Evaluation</i>               |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$2,500 |
| <b>F. Monitoring</b>                     |        |  |  |         |     |  |     |  |     |         |
|  |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
|  |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <i>Insert new items above this line!</i> |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <i>Subtotal Monitoring</i>               |        |  |  | \$0     | \$0 |  | \$0 |  | \$0 | \$0     |
| <b>G. Totals</b>                         |        |  |  |         |     |  |     |  |     |         |
|  |        |  |  | \$5,292 | \$0 |  | \$0 |  | \$0 | \$7,792 |
| Previously approved                      |        |  |  |         |     |  |     |  |     |         |
| Total for this request                   |        |  |  | \$5,292 |     |  |     |  |     |         |

**PART VII - APPROVALS**

1. Sammy Randall Parker  
Forest Supervisor

11/4/19  
Date