Draft Environmental Assessment

Town of Paradise Wildfire Mitigation Projects

HMGP 4407-189-058, 4407-255-060, 4407-305-057, 4407-511-089

Butte County, California

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FEMA

Federal Emergency Management Agency
Region 9
Department of Homeland Security
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Acronyms and Abbreviations

°F	degrees Fahrenheit
APE	Area of Potential Effects
BMP	best management practice
CAL FIRE	California Department of Forestry and Fire Protection
Cal OES	California Governor's Office of Emergency Services
Cal-IPC	California Invasive Plant Control
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CVSR	Central valley spring-run
dB	decibel
DBH	diameter at breast height
DPS	Distinct Population Segment
EA	environmental assessment
EFH	Essential Fish Habitat
EMS	emergency medical services
EO	Executive Order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
ESU	evolutionarily significant unit
FEMA	Federal Emergency Management Agency

FONSI	Finding of No Significant Impact
HMGP	Hazard Mitigation Grant Program
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NLCD	National Land Cover Database
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
Paradise	Town of Paradise
PG&E	Pacific Gas and Electric Company
RCRA	Resource Conservation and Recovery Act
SHPO	State Historic Preservation Officer
SWPPP	Storm Water Pollution Prevention Plan
THPO	Tribal Historic Preservation Officer
U.S.C.	United States Code
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Services
WUI	wildland-urban interface

SECTION 1. Introduction

The Town of Paradise (Paradise) applied to the Federal Emergency Management Agency (FEMA) through the California Governor's Office of Emergency Services (Cal OES) for four wildfire hazard mitigation grants under FEMA's Hazard Mitigation Grant Program (HMGP). Cal OES is the direct applicant for the grants, and Paradise is the subapplicant. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. FEMA's HGMP provides funds to eligible state and local governments, federally recognized tribal governments, and nonprofit organizations to help implement long-term hazard mitigation measures after a presidential major disaster declaration. The HMGP funds were made available during DR-4407-CA disaster declaration made by FEMA in 2018 in response to a series of devastating wildfires in California.

Paradise is proposing to conduct all four wildfire mitigation projects throughout the town limits. This EA considers and analyzes each project individually as four separate alternatives proposed by Paradise, which include:

- **Alternative 1** – refining building codes and standards, improving awareness about defensible space requirements, and code enforcement (HMGP 4407-511-89)
- **Alternative 2** – providing incentives for homeowners to apply ignition-resistant materials to existing houses and create defensible space (HMGP 4407-189-058)
- **Alternative 3** – reducing hazardous fuels along town rights-of-way (HMGP 4407-255-060)
- **Alternative 4** – removing hazardous burnt, standing or downed trees on private property left from the 2018 Camp Fire (HMGP 4407-305-057)

Paradise intends to implement all four alternatives and, collectively, the four alternatives are referred to as the action alternatives. The action alternatives would be within the wildland-urban interface (WUI), an area where homes and forests intermingle, which encompasses the entire town (**Figure 1-1**). **Table 1-1** lists the areas that comprise the project area for each alternative.

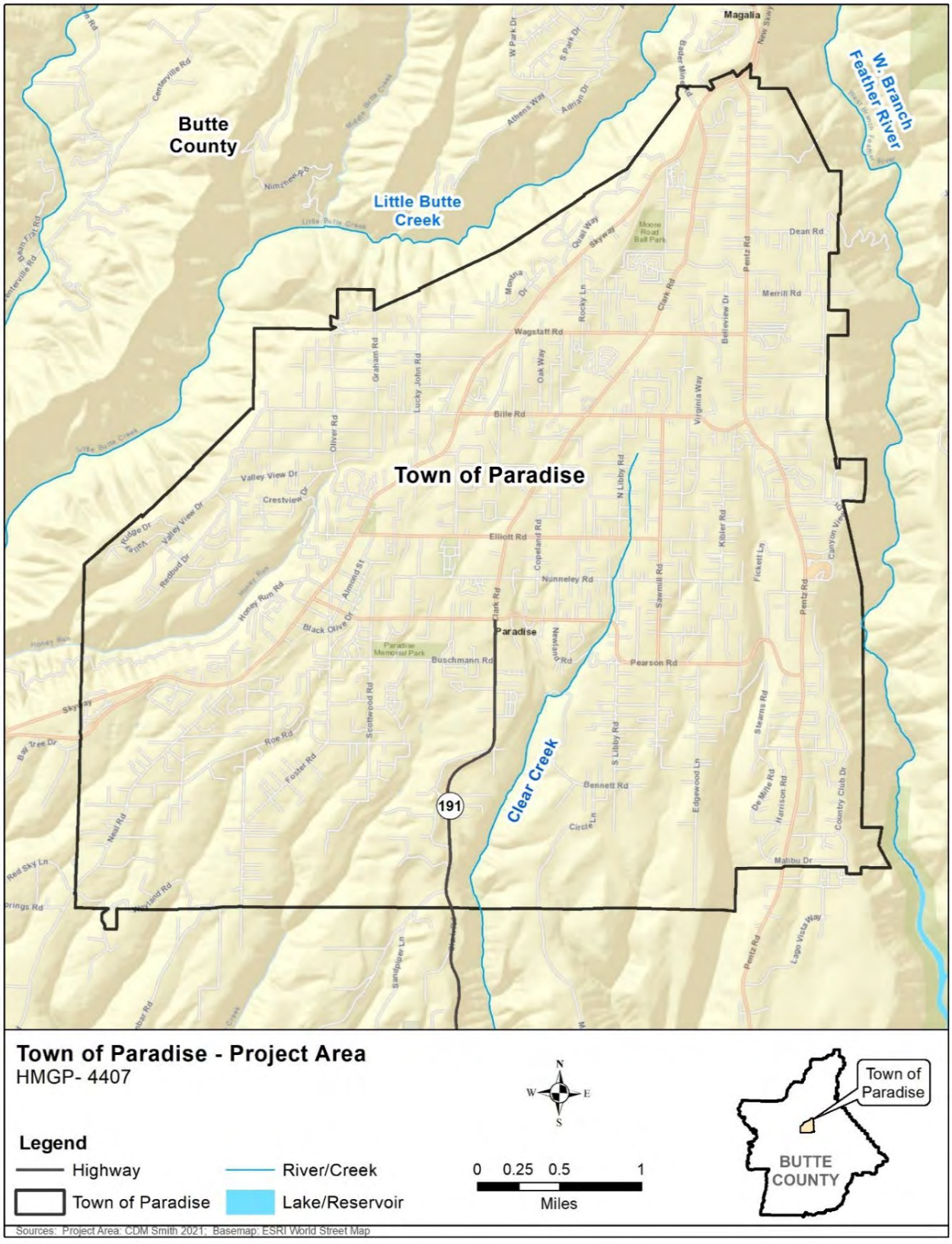

Figure 1-1. Project Area

Table 1-1. Project Areas

Action Alternatives	Project Area
Alternative 1 – Defensible Space Code Enforcement (4407-511-89)	Town of Paradise
Alternative 2 – Residential Ignition-Resistant Improvement Program (4407-189-058)	Town of Paradise
Alternative 3 – Hazardous Fuels Reduction Program (4407-255-060)	Public Rights-of-Way within the Town of Paradise
Alternative 4 – Hazardous Burnt Tree Removal (4407-305-057)	Town of Paradise

Paradise has experienced fires in the past that have required mandatory evacuations, damaged property, and resulted in loss of life. In 2018, Paradise was devastated by the Camp Fire, the deadliest and most destructive wildfire in California history. The fire burned over 153,336 acres, resulting in at least 85 fatalities and destroying 18,804 structures, emphasizing the need for wildfire hazard mitigation projects in the project area. In addition to the 2018 Camp Fire, Paradise also experienced significant wildfires in 2016 and 2017 (Saddle Fire and Honey Fire, respectively) and has been threatened again in 2020 and 2021 with the North Complex and Dixie Fires, respectively.

According to data from the National Interagency Fire Center, the average wildfire size in the United States has increased from less than 40 acres in the 1980s and early 1990s to more than 160 acres in 2020. Butte County, California, where Paradise is located, has an extremely high wildfire vulnerability according to the Butte County Local Hazard Mitigation Plan. From May to October of each year, Butte County faces a serious wildfire threat as fires continue to occur. The majority of the town is in a "very high fire hazard" zone as mapped in the Butte County Local Hazard Mitigation Plan, and wildfire is the top hazard (Butte County 2019). **Figure 1-2** depicts the town's overall wildfire risk. The threat of wildfire and potential losses are constantly increasing as human development and population increase and the WUI areas expand.

This environmental assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the President's Council on Environmental Quality (CEQ) regulations to implement NEPA (40 Code of Federal Regulations [CFR] § 1500 to 1508), U.S. Department of Homeland Security Instruction 023-01-001, FEMA Instruction 108-01-1, and NEPA implementing procedures. FEMA is required to consider potential environmental impacts before funding or approving actions and projects. The purpose of this draft EA is to analyze the potential environmental impacts of the Proposed Action (i.e., all four projects) and the no action alternative. FEMA will use the findings in this draft EA to determine whether to prepare an environmental impact statement or issue a Finding of No Significant Impact (FONSI).

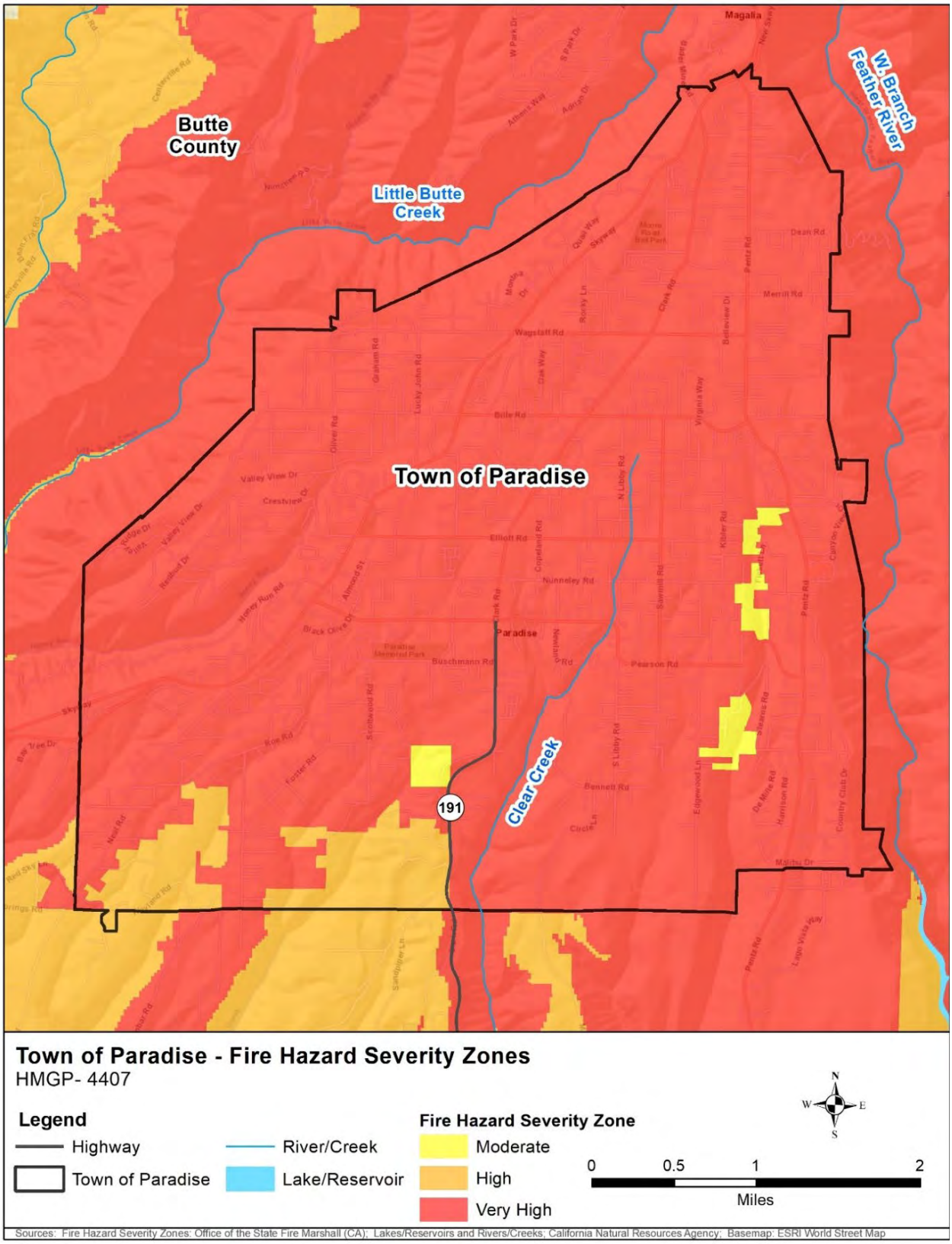

Figure 1-2. Fire Hazard Severity Zones

SECTION 2. Purpose and Need

The purpose of the HMGP is to reduce the loss of life and property resulting from natural disasters and to enable risk mitigation measure to be implemented during the recovery from a declared disaster. The purpose of the action alternatives is to reduce both future wildfire hazards and post-fire hazards throughout the town. The action alternatives are needed to protect life, reduce the likelihood of fire damage to property, and augment completed and ongoing post-fire mitigation work in Paradise.

The objective of Alternative 1 (Defensible Space Code Enforcement) is to provide a buffer around a structure that limits the spread of wildfire and establish an area in which firefighters can safely protect structures through fire suppression activities (FEMA 2015). Education about, and enforcement of, Paradise's defensible space codes are needed to ensure they are implemented properly during the rebuilding of Paradise following the Camp Fire. Properly implemented defensible space would reduce future wildfire hazards.

The objective of Alternative 2 (Residential Ignition-Resistant Improvement Program) is to increase the resilience of residential buildings through enhanced compliance with building codes for fire resilience and the incentivize residents to modify existing structures to meet fire resistant standards. Ignition-resistant construction includes the creation of defensible space around structures. Ignition-resistant construction would reduce future wildfire hazards.

The objective of Alternative 3 (Hazardous Fuels Reduction Program) is to remove enough vegetation so that when a wildfire burns, it is less severe and can be more easily managed. Reducing hazardous fuels along road rights-of-way helps to maintain emergency access and evacuation routes in the event of a fire. Reduction of hazardous fuels would reduce future wildfire hazards.

The objective of Alternative 4 (Hazardous Burnt Tree Removal) is to remove hazardous, burnt, dead or dying, standing or downed trees on private property to reduce the public health and safety threat posed by hazardous trees, reduce the risk of infestation by the bark beetle, and allow Paradise to rebuild and financially recover. Burnt trees increase fuel loads that contribute to future fire risk. Leaving burnt trees in place also prevents rebuilding or threatens rebuilt structures. However, many property owners lack the financial resources to remove hazardous, dead trees from their properties. In fact, many homeowners are facing tree removal costs that exceed the value of the land and have chosen to relocate. As people who cannot afford to rebuild move away, the economic base of Paradise erodes, leading to contraction of businesses and services. As property owners abandon their land because of the expense of removing trees, it would fall to the Town of Paradise to bear the burden of eliminating the hazardous trees from these parcels, which it cannot afford. Implementation of Alternative 4 would reduce wildfire hazard in the region and encourage rebuilding and economic recovery.

SECTION 3. Alternatives

This section describes the no action alternative, the action alternatives, and alternatives that were considered but dismissed.

3.1. No Action Alternative

The no action alternative is included to describe potential future conditions if no action is taken to reduce wildfire hazards. Under this alternative, no FEMA-funded wildfire mitigation measures would be conducted in the action area. While Paradise would continue to participate in the Butte County Fire Safe Council and the Butte County Community Wildfire Plan, actions to achieve community resilience would be implemented on a smaller scale and longer timeline to reach the same number of properties. Without the implementation of the proposed actions, existing conditions, including wildfire hazards, would largely remain high, threatening residents and businesses in the town with the associated potential for loss of life and property. Without additional code enforcement activities, implemented under Alternative 1, fewer properties would be inspected for defensible space and the threat of rapid fire spread through vegetation surrounding structures would remain. Without implementing Alternative 2, individual property owners would not be able to take advantage of the cost-share funding to upgrade existing structures with ignition-resistant construction and those structures would remain at high risk of damage and loss during a fire. Without Alternative 3, hazardous fuels within public rights-of-way would still allow wildfire to easily overtake public roads, making evacuation difficult or impossible for residents and affecting emergency responder's ability to access neighborhoods. Without Alternative 4, hazardous standing or downed burned trees would remain on private lands, limiting the ability of landowners to rebuild, potentially resulting in more people moving away and thereby exacerbating downward economic trends in Paradise.

Under the no action alternative, current, post-wildfire hazards would not be substantially reduced, and the probability of loss of life and property in the event of a future wildfire would not be appreciably reduced to the extent that could be achieved under the action alternatives. Achieving community resiliency and economic recovery would take much longer and the probability of another catastrophic wildfire occurring before they could be implemented would remain high.

3.2. Action Alternatives

Paradise proposes to implement four alternatives that are connected geographically, with each alternative to be funded under a separate FEMA grant (see **Table 1-1**). The four alternatives include:

- **Alternative 1** – enhancing code enforcement activities to manage hazardous fuels and defensible space (Defensible Space Code Enforcement)

- **Alternative 2** – introducing a residential ignition-resistant improvement program (Residential Ignition-Resistant Improvement Program)

- **Alternative 3** – reducing hazardous fuels along town rights-of-way (Hazardous Fuels Reduction Program)

- **Alternative 4** – removing dead and dying burnt trees on private property (Hazardous Burnt Tree Removal)

The four alternatives area collectively referred to as the action alternatives. Each alternative is described in more detail in the following sections.

3.2.1. PROJECT LOCATION

The action alternatives would be conducted within the town limits. Alternatives 1, 2, and 4 would potentially include over 11,500 private parcels. Code enforcement activities under Alternative 1 may occur anywhere within the town as identified by Paradise code enforcement staff. Specific parcels affected by Alternatives 2 and 4 would be determined following a process where interested property owners apply to participate, site assessments are conducted by Paradise, and approved work is authorized by Paradise. Because the specific parcels are not known in many cases, this EA programmatically evaluates all eligible parcels within the town; however, project activities would only occur on those parcels selected for project implementation. Alternative 3 would treat areas within public rights-of-way along roads. This EA analyzes the treatment of all public rights-of-way; however, the final treatment area may be reduced based on further refinement and assessment.

3.2.2. PROJECT DURATION

Project planning and scoping for the action alternatives are anticipated to last one month followed by outreach and education activities. All work performed under these grants would be completed within three years. Homeowners approved under Alternative 2 would have approximately 1 to 2 years to complete their projects depending on the timing of approval. The work at any one location under Alternatives 3 and 4 would last a few days to weeks.

3.2.3. ALTERNATIVE 1 – DEFENSIBLE SPACE CODE ENFORCEMENT

Research and post-fire assessments have shown that structures can be protected against wildfire by addressing three clear sources of vulnerability: materials and design features used in building the structure, the landscape vegetation located immediately adjacent to the structure, and the general vegetation and other combustible materials and items on the property surrounding the structure (Insurance Institute for Business and Home Safety 2019). Creating defensible space typically involves vegetation management within 100 feet of structures.

Paradise proposes to enhance existing code enforcement activities throughout the town, covering over 11,500 parcels. Before the Camp Fire, the code enforcement program was predominately reactive, with staff responding to complaints. The proposed defensible space code enforcement activities would be more proactive during this period of intense rebuilding activity. This alternative would include reviewing inspection protocols and criteria, assessing defensible space around standing structures (including private, public, and commercial properties) based on the established

inspection protocols and criteria, and developing an action plan to clear and reduce vegetative growth. Code enforcement activities are codified in several local and state laws, regulations, and ordinances, including Paradise Municipal Code Chapter 8.04.010; Paradise Municipal Code No. 585; California Code of Regulations, Title 14, Section 1299.03 — Requirements; and California Code of Regulations, Title 19, Division 1, Section 3.07 — Clearances.

Implementation Methods

Paradise would begin by reviewing the existing inspection protocol and criteria. Paradise does not anticipate the need to update or modify existing inspection checklists and protocols. Preliminary inspections of properties throughout the town would take place to assess compliance with defensible space requirements. Paradise would develop a public education and outreach plan. Presentations at community meetings, Town Council meetings, and other community events would be held to inform the public of the existing inspection checklists and protocol, and the importance and benefits of maintaining defensible space around their properties.

Alternative 1 would involve hiring two code inspectors to conduct inspections, check whether properties are meeting defensible space requirements, investigate vegetative growth complaints, and reduce hazardous fuels. The fire marshal or program supervisor would provide oversight and conduct additional assessments and inspections as needed. Code enforcement program staff would contact property owners to check for expanded reduced fuel zones around roads that meet defensible space requirements and allow for safe wildfire evacuation routes. Inspection and code enforcement would generally follow this process.

1. An inspector would inspect the property and leave a copy of the Notice of Fire Hazard Inspection with the property owner at time of inspection along with a reinspection date if deficiencies are found. A copy would also be given to staff at the fire station, which would be filed for reinspection and a Notice of Fire Hazard letter would be mailed to the property owner.

2. A reinspection would be conducted and would be filed as “No Further Action Required” if the required work was completed or, if the work was not completed, the case would be given to the code enforcement official for the following escalating steps:

    a. Failure to comply with abatement before the stated deadline would result in a $100 hazard abatement administrative citation mailed and posted at the property within 7 days’ notice to correct the violation.

    b. Failure to comply with abatement before the stated deadline would result in a $200 hazard abatement administrative citation mailed and posted at the property within 7 days’ notice to correct the violation.

    c. Failure to comply with the abatement before the stated deadline would result in a $500 hazard abatement administrative citation mailed and posted at the property within 7 days’ notice to correct the violation.

d. Failure to comply with abatement before the stated deadline would result in an abatement letter being sent to the property owner stating that the town will abate the hazard at the owner's expense.

3. A hearing can be requested in writing by the property owner to the town clerk within 15 business days after the date of the Notice of Fire Hazard letter is mailed.

4. The property would be abated, and all fees would be collected by the Town Finance Department.

If at any point the work is completed during this process or evidence is given that confirms completion would be done, this process would be paused or be documented as "No Further Action Required." All fees would still need to be paid. Any fees collected would be treated as "Program Income" and handled consistent with the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (2 CFR § 200). While this income would be tracked and monitored, Paradise proposes to use it to meet the grant match requirements. Any funds exceeding the match would be returned through the State.

3.2.4. ALTERNATIVE 2 – RESIDENTIAL IGNITION-RESISTANT IMPROVEMENT PROGRAM

Fire embers, pushed by winds, can travel as much as one-half mile or more ahead of the fire front and can carry enough heat energy to ignite combustible surfaces of a home, such as roofs. This underlines the importance of applying ignition-resistant measures to existing structures. In addition, these embers can catch dense trees and vegetation on fire and, when located near homes, can be a significant threat to the structure.

Paradise proposes to implement a Residential Ignition-Resistant Improvement Program that provides incentives to residents to improve their existing homes with ignition-resistant elements to meet or exceed Chapter 7A of the California Building Code. The program would assist homeowners in bringing their homes up to the current standards. Paradise adopted the 2010 California Building Code, including Chapter 7A of the California Building Code, in January 2011. As such, houses built before 2011 were not built to meet this standard. This program would allow homeowners to make ignition-resistant improvements that meet or exceed this standard. Improvements would include replacement roofs, siding, and fencing, installation of noncombustible gutter covers, window and chimney improvements, deck replacements and improvements, and other similar improvements to retrofit structural components.

Implementation Methods

Alternative 2 would start with public outreach to educate and inform the community about the program. Outreach efforts would include presentations at community meetings and Town Council meetings, as well as written notices on the town bulletin board and posts on social media and the town's website. Interested residents would apply to Paradise for funding during a set application period. After the application period closes, Paradise would review the applications, prepare a parcel packet that would include a specific scope of work for each property, and then submit each packet to Cal OES and FEMA. Upon receipt of FEMA approval of a property, Paradise would notify the

homeowner to proceed with the approved scope of work. With FEMA's approval and the town's notification, the application would be approved, and the homeowner could begin the work on their residence.

Applicants may have ignition-resistant improvements installed on existing homes, with an overall $70,000 per applicant limit. The program would be limited to 100 approved residences. Homeowners participating in this program would have to pay up to 25 percent of the improvement costs.

Homeowners who receive benefits from this program would be required to also create defensible space around their properties consistent with California Fire Code Section 4906, if it is not already present. Creation of defensible space would not be covered by grant funds. Each participating property would be subject to annual inspection of the defensible space by town code enforcement staff.

3.2.5. ALTERNATIVE 3 – HAZARDOUS FUELS REDUCTION PROGRAM

Fuel reduction projects and vegetation treatments are proven means of lessening wildfire hazards, catastrophic fire and its threat to public and firefighter safety, and damage to property (National Park Service 2017). When vegetation or fuels accumulate, they allow fires to burn hotter, faster, and with higher flame lengths allowing the fire to travel faster and farther, making it more difficult to control.

Paradise is proposing to implement a Hazardous Fuels Reduction Program to reduce hazardous fuels within public rights-of-way along both sides of the 99 miles of public roads within the town limits (**Figure 3-1**). Approximately 275 acres would be treated. Paradise would use a combination of both mechanical and chemical methods for clearing hazardous fuels from the public rights-of-way.

Implementation Methods

An action plan would be developed for clearing and reducing vegetation that defines equipment needs and develops a final treatment location list. For the purposes of this EA, it is assumed that the entire 99-mile public road system would be treated under this program.

A three-person team with masticators mounted on excavators would remove hazardous fuels, including brush and small trees (i.e., trees that are less than approximately 6 inches in diameter at breast height [DBH]). Root balls would not be removed, and subsurface disturbance is not anticipated. Any retained vegetation would be cut to a minimum height above grade. No vegetation removal would be performed near any wetlands, ponds, or rivers and a minimum 25-foot to 150-foot buffer would be placed around these resources, dependent upon stream class and slope, as recommended by National Marine Fisheries Service (NMFS) for the State Hazard Tree Removal Program (NMFS 2022).

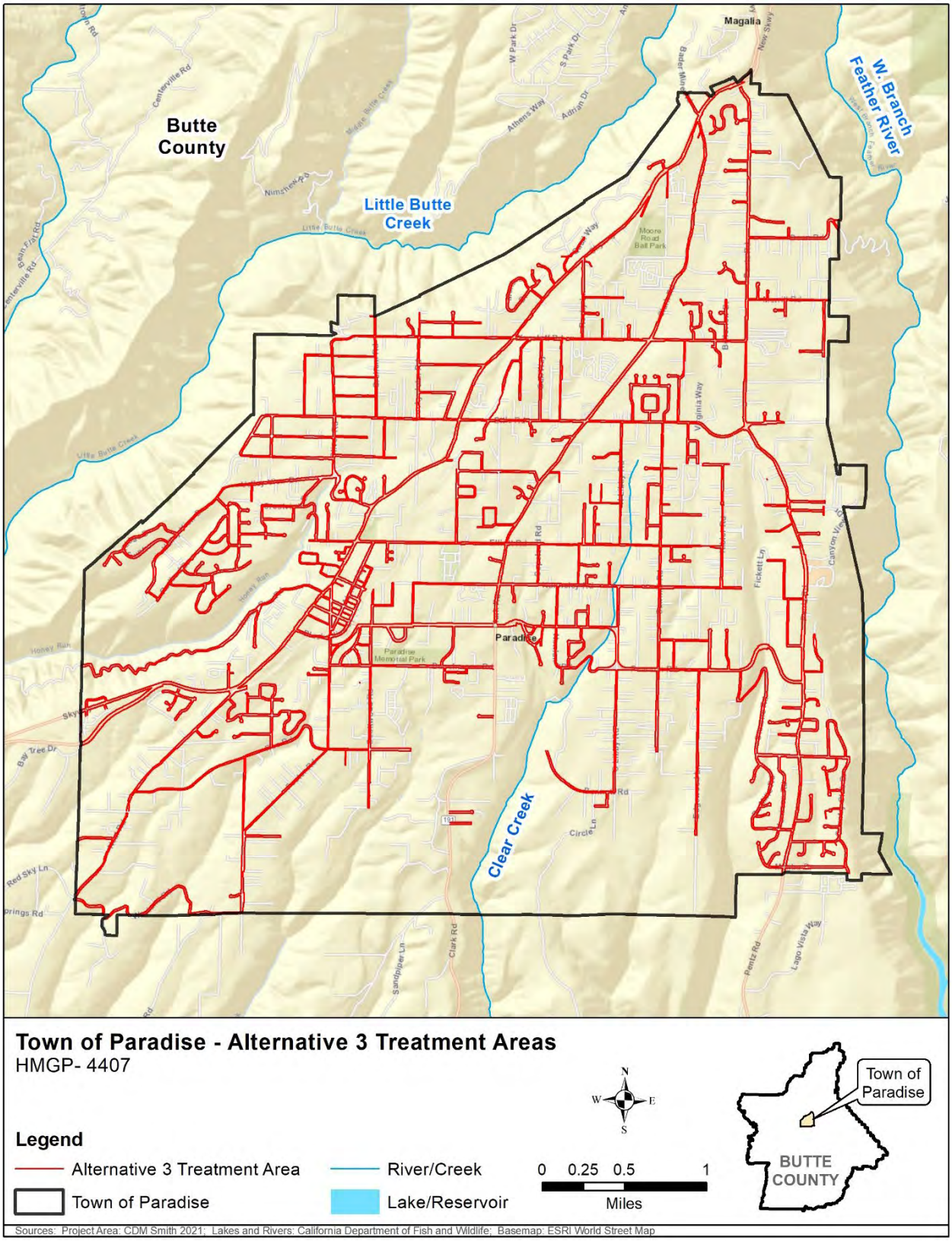

Figure 3-1. Alternative 3 Treatment Areas

The crew would direct traffic around the equipment safety zone and would have onboard water tanks with pumps to extinguish any sparks created during equipment operations. A limited amount of the cut vegetation may be chipped and broadcast in place, where feasible (e.g., on a hillside or other open area within the right-of-way). If the location does not allow for broadcasting in the immediate area, the material would be taken to the Green Waste Yard[1] or an air curtain burner may be used to burn cut material.

Twice a year, the team would cease mechanical fuel reduction work to conduct herbicide spraying operations to prevent weed growth. A backpack sprayer and small broadcast sprayer mounted on a utility terrain vehicle would be used for spraying activities. The herbicide application would take approximately 3 weeks per application. Herbicide would be used and stored in accordance with local, state, and federal regulations and all herbicide applications would follow the product label application instructions and best management practices (BMPs) for the use of herbicides.

The on-site staging and stockpile areas would be located along previously disturbed road shoulders. The equipment would be rubber-tired and includes trucks and trailers for transport of equipment, a water tank, chippers, masticators, and mulchers. When not in use, equipment would be stored at the Public Works Department Yard. Mechanical equipment operation and herbicide spraying would be performed outside of the fire season and hand tools would be used during the fire season to avoid the potential for sparks from mechanical equipment. Public roads would be used to access to the public rights-of-way and no new access routes would be needed.

3.2.6. ALTERNATIVE 4 –HAZARDOUS BURNTTREE REMOVAL

Over 400,000 hazardous burnt dead or dying trees were left behind in the wake of the Camp Fire, and they pose ongoing post-fire hazards to health and safety from their potential to fall and damage property or impact access and private utilities. **Figure 3-2** and **Figure 3-3** depict hazardous burnt dead or dying trees in the town. The Pacific Gas and Electric Company (PG&E) has removed approximately 95,000 hazardous trees, and an estimated 104,700 hazardous trees (Category 1 through 3 trees[2]) are being removed under FEMA and the State's Camp Fire Hazard Tree Removal Program, leaving roughly 222,700 hazardous burnt trees on private lands.

Under Alternative 4, Paradise proposes to remove hazardous burnt dead or dying, standing or downed trees on private properties within the town limits. Hazardous burnt trees are generally defined as trees that have a DBH greater than 6 inches with more than 50 percent of the crown damaged or destroyed; with a split trunk, broken branches, or exposed heartwood; or that are leaning at an angle greater than 30 degrees.

[1] The Green Waste Yard is used for normal town operations and operated by Northern Recycling and Waste Services as the provider of waste collection and recycling services throughout the town.
[2] Category 1 is defined as hazardous trees on public property that are a threat to public right-of-way/public improved property. Category 2 is defined as hazardous trees on private property that are a threat to the California Department of Resources Recycling and Recovery (CalRecycle) debris removal effort and/or the CalRecycle crews and the public right-of-way. Category 3 is defined as hazardous trees on private property that are a threat to the public right-of-way/public improved property.

Figure 3-2. Hazardous Burnt Tree Threatening Residence

Figure 3-3. Hazardous Burnt Trees Near a Residence

Paradise opened a public application period for private landowners to apply for participation in the hazardous burnt tree removal program. Following the application period, an on-site arborist inspected all participating parcels to assess the hazardous burnt trees, gathering information about each tree including location, size, and species. Approximately 12,118 hazardous burnt trees across 575 parcels within the town were surveyed for removal under the hazardous burnt tree removal program. The parcels included in the program are dispersed evenly throughout the town limits. The hazardous burnt trees identified include over 100 different species with the dominant species being black oak (*Quercus velutina*), canyon live oak (*Quercus chrysolepis*), and ponderosa pine (*Pinus ponderosa*).

Implementation Methods

Eligible trees would be removed consistent with burnt tree removal projects performed to date in the town and Butte County. This project would remove trees that constitute a threat to private access, private structures, or represent a wildfire threat because of their density.

Interested property owners have applied to Paradise to participate in the program. Hazardous trees on participating properties would be identified by a certified arborist who would record information about the trees including location, size, species, and make site-specific recommendations on access and removal methods.

Marked trees would be felled by a licensed timber operator in accordance with logging industry best practices. Felling methods could include manual felling by ground crews using chainsaws or mechanical felling methods including the use of rubber-tired tractors, crawler-type tractors, or specially designed equipment with attachments designed to cut, crush, or chop vegetation. No vegetation removal would be performed near any wetlands, ponds, or rivers and a minimum 25-foot to 150-foot buffer would be placed around these resources, dependent upon stream class and slope, as recommended by NMFS for the State Hazard Tree Removal Program (NMFS 2022).

Felled trees would be removed from the stump location with heavy equipment or by crane to the nearest road, where they would be loaded onto trucks. Trees may be left on the ground for a few days where they were felled before being removed to roadsides for transport. Logs would be transported out of town either as whole logs to end-use facilities or to the Green Waste Yard for disposal. Slash (i.e., limbs under 6 inches in diameter) may be chipped and spread on disturbed soil for erosion control. Stumps and root balls would not be removed.

A project monitor would be present to monitor the contractor, removal of the trees, and prepare the appropriate project documentation. A biologist would monitor project activities to confirm all actions meet the requirements of the Endangered Species Act (ESA). A final inspection would be performed to verify that all trees were removed consistent with all guidelines.

3.2.7. MAINTENANCE ACTIVITIES

Follow-up maintenance is not part of the proposed federal grant funding; however, it is a requirement of the grant award and may be considered a part of the action alternatives. Follow-up maintenance

activities are not anticipated for Alternative 1. Maintenance activities associated with Alternative 2 would include maintaining the ignition-resistant construction and defensible space around participating homes. These activities would include cutting brush in the defensible space and performing minor repairs on windows and gutters. This maintenance would be conducted by each homeowner and would be a condition of the approval of funds. Maintenance activities for Alternative 3 would include chemical spraying to keep weeds and shrubs from becoming reestablished in the road rights-of-way. Paradise would conduct maintenance activities annually for the entire useful life of Alternative 3 (approximately 20 years). Maintenance activities for Alternative 4 would include trimming or mowing sprouts from tree roots. Maintenance would be conducted by the property owners.

3.3. Additional Action Alternatives Considered and Dismissed

No additional reasonable alternatives were identified for Alternative 1, 2, and 4.

An alternative to the proposed hazardous fuels reduction program (Alternative 3) would be to use only chemical methods to clear the brush along the town's rights-of-way. The use of herbicides would eliminate existing vegetation and prevent the growth of new vegetation along the rights-of-way, reducing the risk of wildfire. However, this alternative would leave behind dead brush, grasses, and small trees, leaving the area still vulnerable to the spread of wildfire. Therefore, a chemical-only brush clearing alternative would not entirely address the purpose and need to reduce wildfire hazards within the town.

SECTION 4. Affected Environment, Potential Impacts, and Mitigation

This section describes the environment potentially affected by the alternatives, evaluates potential environmental impacts, and recommends measures to avoid or reduce those impacts. When possible, quantitative information is provided to establish potential impacts; the significance of potential impacts is based on the criteria listed in **Table 4.1**. The impact analysis is divided into two sections – "general consequences," which includes impacts that would be expected under all action alternatives, and "project-specific consequences," which includes impacts that are specific to each action alternative. The study area generally includes the project area and access and staging areas needed for the alternatives. If the study area for a particular resource category is different from the project area, the differences will be described in the appropriate subsection.

Table 4-1. Evaluation Criteria for Potential Impacts

Impact Scale	Criteria
None/Negligible	The resource area would not be affected, or changes/benefits would be either nondetectable or, if detected, would have effects that would be slight and local. Impacts would be well below regulatory standards, as applicable.
Minor	Changes to the resource would be measurable, although the changes would be small and localized. Impacts or benefits would be within or below regulatory standards, as applicable. Mitigation measures would reduce any potential adverse effects.
Moderate	Changes to the resource would be measurable and have either localized or regional-scale impacts/benefits. Impacts would be within or below regulatory standards, but historical conditions would be altered on a short-term basis. Mitigation measures would be necessary, and the measures would reduce any potential adverse effects.
Major	Changes would be readily measurable and would have substantial consequences on a local or regional level. Impacts would exceed regulatory standards. Mitigation measures to offset the adverse effects would be required to reduce impacts, though long-term changes to the resource would be expected.

4.1. Resources Not Affected and Not Considered Further

The following resources (**Table 4-2**) would not be affected by either the no action alternative or the action alternatives because they do not exist within the project area or the alternatives would have no effect on the resource. These resources have been removed from further consideration in this EA.

Table 4-2. Resources Eliminated from Further Consideration

Resource Topic	Reason for Elimination
Geology	The action alternatives propose surface-level activities that would not affect geology. None of the alternatives would affect geology.
Farmland Soils	The Town of Paradise is an incorporated area and is shown as an urbanized area on the Census Bureau map. Therefore, the Farmland Protection Policy Act does not apply, per 7 CFR § 658.2(a).
Wild and Scenic Rivers	According to the National Wild and Scenic Rivers website (National Wild and Scenic Rivers System 2022), the closest wild and scenic river, the Feather River, is approximately 18 miles east of Paradise. Thus, none of the alternatives would have any effect on wild and scenic rivers.
Sole Source Aquifers	According to the U.S. Environmental Protection Agency's (EPA) sole source aquifer map (EPA 2022a), there are no sole source aquifers designated within the town; therefore, none of the alternatives would have any effect on sole source aquifers.
Coastal Resources	Paradise is not located in the Coastal Zone designated by the State of California (California Coastal Commission 2022) or within a Coastal Barrier Resources Unit (U.S. Fish and Wildlife Services [USFWS] 2022a).
Land Use and Zoning	The alternatives would not change existing land uses and are consistent with the current zoning. The alternatives would have no effect on land use and zoning.

4.2. Soils and Topography

Paradise is nestled in the foothills of the Sierra Nevada Mountain range with elevations ranging from 1,200 feet to 2,400 feet above sea level. The town drains to several small creeks, including the Little Butte Creek to the west, and the West Branch of the Feather River to the east, which is a tributary to Lake Oroville southeast of the town.

The project areas are along existing roadways and on private properties primarily within soil type units Paradiso loam and gravelly loam in areas of 2- to 15-percent slopes or 15- to 30-percent slopes (USDA NRCS 2022). The higher elevation areas contain rock outcroppings and Rockstripe complex soils with 30- to 50-percent slopes and 50- to 70-percent slopes. The developed areas of the town, including the roadways, are not expected to exhibit native soil characteristics owing to compaction, placement of engineered fill and road base, and pollutants from vehicles. The California Department of Forestry and Fire Protection (CAL FIRE) prepared a burn severity map after the Camp Fire that shows large areas of low soil burn severity within the town, indicating that the fire did not alter soil conditions (River Partners 2021).

4.2.1. NO ACTION ALTERNATIVE

Under the no action alternative, Paradise may implement wildfire mitigation activities and would continue to participate in the Butte County Fire Safe Council and the Butte County Community Wildfire Plan. These activities would result in negligible soil disturbance and have no effect on topography. However, in the event of a major wildfire, there would be a substantial loss of vegetation

that may result in higher soil temperatures, increased evaporation, and reduced soil moisture. High-intensity wildfires can alter the physical and chemical properties and the moisture, temperature, and biotic characteristics of soils (USFS 2005).

Heat from wildfires can cause soils to form hydrophobic layers that repel water, resulting in decreased stormwater infiltration. Hydrophobicity occurs when plants burn in wildfires, releasing a gas into the soil that cools and solidifies into a waxy, water-repelling substance that coats soil particles. As mentioned above, CAL FIRE determined that the soil burn severity after the Camp Fire is low within the town. If another wildfire were to occur in Paradise and the soil burn severity were to become severe, it could result in soil becoming water repellent, organic matter and nutrients being lost, and soil becoming more acidic, making seed establishment less successful. In drier portions of the town, the accumulation of organic matter that facilitates soil formation is relatively slow and may take years to recover following loss due to a fire (USFS 2005).

Under the no action alternative, there would be no effect on topography. In the absence of a wildfire, the no action alternative would have negligible effects on soils. In the event of a wildfire, there could be minor to moderate adverse impacts on soils, depending on the intensity and scale of a wildfire.

4.2.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

Under the action alternatives, there would be no effect on topography. The action alternatives would likely have minor long-term beneficial effects on soils by reducing the risk of soil damage from wildfires.

Project-Specific Consequences

Alternative 1

Alternative 1 would have no effect on soils, as the defensible space compliance actions would not involve construction activities, including grading or root ball removal.

Alternative 2

Implementation of Alternative 2 could affect soils during vegetation removal and home hardening activities. The construction activities associated with Alternative 2 would occur within the existing footprint of properties selected for participation. Subsurface disturbance may be required during some home hardening activities, including replacing fencing and decking; however, potential participating private properties are all previously disturbed areas, where soil disturbance activities (including yard work and home improvement activities) commonly occur. Impacts on soils would be short-term and negligible.

Alternative 3

Implementation of Alternative 3 could affect soils during vegetation removal. Under Alternative 3, vegetation greater than 6 inches DBH would be retained. Rubber-tired heavy equipment would be

used to minimize soil disturbance. Thus, the risk of erosion and soil compaction from Alternative 3 would be short-term and negligible.

Alternative 4

Implementation of Alternative 4 could affect soils during hazardous burnt tree removal. Under Alternative 4, root balls would not be disturbed, and rubber-tired heavy equipment would be used to minimize soil disturbance. Thus, the risk of erosion and soil compaction from Alternative 4 would be short-term and negligible.

4.3. Visual Quality and Aesthetics

The analysis of visual quality is a qualitative analysis that considers the visual context of the project area, the potential for changes in character and contrast, an assessment of whether the project area includes any places or features designated for protection, the number of people who can view the site and their activities, and the extent to which those activities are related to the aesthetic qualities of the area.

Prior to the Camp Fire, Paradise had a visual context of a small town, set in a forested landscape that was transitional from oak woodland/grassland at the lower elevations to mixed conifer forest at the higher elevations. Developed areas contain mostly commercial and single-family residential uses with some multi-family residential uses. In 2018, the Camp Fire burned a large majority of the vegetation and buildings present in the town leaving behind many hazardous burnt and dead trees. Since then, some properties owners have built new structures, but many of the properties have yet to be restored. Of the over 400,000 hazardous burnt trees, approximately half have been removed through other programs, leaving roughly 222,700 burnt trees on private land. Most project areas both on private land and along road rights-of-way would be visible from the public roadways throughout the town.

Scenic gateway roadways are designated in the Town of Paradise General Plan and Design Standards and include Skyway, Pentz Road, Clark Road, and Honey Run Road (Town of Paradise 1998; Town of Paradise n.d.). The California Department of Transportation (Caltrans), which designates scenic highways throughout the state, does not currently recognize the above-listed roadways within the town as state-level scenic corridors (Caltrans 2022).

4.3.1. NO ACTION ALTERNATIVE

Under the no action alternative, limited ongoing wildfire hazard reduction activities would not result in perceptible changes in the appearance and visual quality of the town overall. However, areas that are treated with wildfire mitigation measures by Paradise, Butte County, or property owners on their own initiative would undergo a slight visual change, which could be perceived as cleaner and safer on a localized scale. However, a major wildfire would be more likely to spread through the area under the no action alternative.

In addition, under the no action alternative, hazardous burnt trees would not be removed from private properties, impacting Paradise's residents' ability to recover and rebuild. Paradise would be unable to return to the visual setting experienced prior to the Camp Fire. The no action alterative could have a moderate to major adverse impact on the visual quality of Paradise.

4.3.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

In the short term, construction equipment used during implementation of Alternatives 2, 3, and 4 would aesthetically contrast with the existing natural, built, and aesthetic environments. Due to the temporary nature of equipment use and materials storage, Alternatives 2, 3, and 4 would have minor, short-term adverse impacts on visual quality and aesthetics.

In the long term, with implementation of the action alternatives, the risk of wildfire spread throughout the town would be reduced, which would have a moderate, long-term beneficial effect on visual quality and aesthetics by reducing the chance that vegetation and structures could be burned.

Project-Specific Consequences

Alternative 1

Alternative 1 would have a negligible effect on visual quality and aesthetics because the program would enforce defensible space requirements that would result in a more uniform application of clear zones around structures.

Alternative 2

The home hardening improvements proposed under Alternative 2 would be compliant with town design standards and the Code of Ordinances Title 15 Building and Construction and Title 17 Zoning, maintaining design and aesthetic consistency with structures currently present throughout the town. For this reason, Alternative 2 would have no long-term adverse impacts on visual quality and aesthetics.

Alternative 3

Hazardous fuels reduction and maintenance activities would occur along roads, including scenic roadways, within the town. As such, drivers along public roadways would see the changes in vegetation. Under Alternative 3, vegetation larger than 6 inches DBH would be retained maintaining an overall forested appearance. As such, Alternative 3 would have minor, short-term adverse impacts on visual quality and aesthetics.

Alternative 3 could have long-term effects on visual quality along public roadways (due to vegetation removal). Properties that are located near hazardous fuel reduction would appear more open and less forested once program activities are completed, resulting in a negligible long-term effect.

Alternative 4

Implementation of hazardous burnt tree removal activities under Alternative 4 could have long-term effects on visual quality on private property. Properties where hazardous burnt tree removal takes place would appear more open and less forested once program activities are completed. Many of the hazardous burnt trees would be removed, which could be perceived as a cleaner and safer landscape. Removing hazardous burnt trees would allow property owners to rebuild, thereby restoring the overall visual quality of Paradise. Therefore, Alternative 4 would have a long-term beneficial effect on visual quality and aesthetics.

4.4. Air Quality and Climate

The Clean Air Act, as amended, requires EPA to establish National Ambient Air Quality Standards (NAAQS) for six pollutants harmful to human and environmental health, including ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, lead, and particulate matter (PM) (including PM that is less than 10 micrometers in diameter [PM10] and fine particulate matter less than 2.5 micrometers in diameter [PM2.5]) (EPA 2023a). Fugitive dust, which is considered a component of PM, can also affect air quality. Fugitive dust is released into the air by wind or human activities, such as construction, and can have human and environmental health impacts. Federally funded actions in nonattainment and maintenance areas for these pollutants are subject to conformity regulations (40 CFR § 51 and 93) to ensure that emissions of air pollutants from planned federally funded activities would not cause any violations of the NAAQS, increase the frequency or severity of NAAQS violations, or delay timely attainment of the NAAQS or any interim milestone. According to the EPA Green Book (2023b), Butte County is currently in nonattainment status for 8-hour ozone (2015).

Air quality is negatively affected by everyday activities, such as vehicle use, and major events, such as wildfires. Wildfire smoke is composed of carbon dioxide, water vapor, particulate matter, carbon monoxide, nitrogen oxides, organic chemicals such as hydrocarbons, and trace minerals, which all affect air quality (EPA 2021). Fugitive dust is released into the air by wind or human activities and can have human and environmental health impacts (California Air Resources Board 2007).

The town is within the foothills of the Sierra Nevada Mountain Range, which has a Mediterranean climate. Winters are wet and cool with an average high temperature in January of 55 degrees Fahrenheit (°F). Summers are hot and dry with an average high temperature of 96°F July and there are several days where the temperature exceeds 100°F. Approximately 20 to 80 inches of precipitation—in the form of rain or snow in the higher elevations—occurs each year. Summer precipitation is very low with low humidity, which increases the risk of wildfire spread. Northern California occasionally experiences dry weather fronts that increase wind speeds from the south and then change direction to northeast winds after passing through the area. More frequent in the autumn months, strong north winds bring high temperatures and very low humidity resulting in red flag warning conditions and the highest potential for extreme fire behavior. During this time period, vegetation is at its lowest moisture content (driest), which can result in a severe fire weather situation (River Partners 2021).

'Climate change' refers to changes in the Earth's climate caused by a general warming of the atmosphere. Its primary cause is emissions of greenhouse gases, including carbon dioxide and methane. Climate change is capable of affecting species distribution, temperature fluctuations, and weather patterns. The Council on Environmental Quality (CEQ) *Interim NEPA Guidance on Consideration of Greenhouse Gas Emissions and the Effects on Climate Change* (CEQ 2023) suggests that if tools, methodologies, or data inputs are not reasonably available to quantify GHG emissions, a reasonable estimated range of quantitative emissions or a qualitative analysis should be presented and the basis for determining that the quantification is not reasonably available should be explained. Previous CEQ guidance suggested quantitative analysis should be done if an action would release more than 25,000 metric tons of greenhouse gases per year (CEQ 2010).

Estimates indicate that average annual temperatures in the Sacramento Valley region, which encompasses Butte County, will increase by 1°F by the 2040s, compared to 2020 and 2.5°F by the 2080s (Cal-Adapt 2022). Warmer temperatures would decrease mountain snowpack, resulting in lower soil moisture and changes in water storage and runoff (California Natural Resources Agency 2018). Earlier spring snowmelt and higher temperatures also increase the risk of wildfires within the region, and North American wildfires have increased in intensity and frequency throughout the past 50 years (USFWS 2011).

4.4.1. NO ACTION ALTERNATIVE

Limited ongoing wildfire hazard reduction activities by Paradise, Butte County, or at-risk property owners on their own initiative would have negligible, short-term impacts on air quality from vehicle and equipment use. However, under this alternative, the risk of wildfire spread would remain high. Wildfire smoke can deteriorate air quality and expose vulnerable populations, such as the young and elderly, to harmful pollutants (EPA et al. 2019). Particulate matter, specifically, can have many harmful effects, including eye and respiratory tract irritation, reduced lung function, asthma, and heart failure (EPA et al. 2019). An ongoing study in Montana is finding that prolonged exposure to wildfire smoke can result in long-term health effects even several years after exposure (Houghton 2020). In addition to particulate matter in smoke, a fire in residential areas produces a variety of other toxins when buildings and their contents burn.

Smoke from major wildfires can affect air quality over large areas, impacting people far from the fire, even several states away. Additionally, major wildfires can emit high levels of greenhouse gases into the atmosphere, thus contributing to climate change, which exacerbates the risk of wildfires. In 2020, California wildfires released a total of 106.7 million metric tons of carbon dioxide, 1,394 thousand short tons of PM10, and 1,181 thousand short tons of PM2.5 (California Air Resources Board 2021). It has been estimated that the California wildfires in 2020 made up 30 percent of the state's GHG emissions (University of Chicago 2022). In the event of a wildfire, the no action alternative could have a minor to major impact on air quality and regional climate, depending on the intensity and scale of the wildfire.

4.4.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

By reducing the risk of wildfire spread, the action alternatives would have minor, long-term beneficial effects on air quality and climate change.

Project-Specific Consequences

Alternative 1

Under Alternative 1, the Defensible Space Code Enforcement Program would have a negligible effect on air quality and climate because the program would ensure uniform implementation of Paradise's defensible space requirements. There would be some property owners who would implement defensible space measures as a result of code enforcement actions or educational outreach that might not have otherwise. However, implementation of defensible space measures would not produce emissions different from regular landscape maintenance that would already be occurring on private parcels within the town.

Alternative 2

Implementation of Alternative 2 could have temporary effects on air quality and climate due to the use of heavy equipment. Vehicle use on dirt roadways can contribute to fugitive dust while gas-powered equipment can produce particulate matter, nitrogen dioxide, carbon monoxide, and sulfur dioxide. Emissions would be similar to other existing small-scale residential improvements and reconstruction activities occurring within the town. All equipment would be rubber-tired; therefore, ground disturbance would be negligible, limiting the release of fugitive dust. Therefore, Alternative 2 would have minor, short-term air quality impacts from vehicle and equipment use, and activities contributing to the release of fugitive dust and other emissions.

Alternative 3

Implementation of Alternative 3 would require the use of heavy equipment during construction, which could have a temporary effect on air quality and climate. Emissions would be similar to other commercial and residential landscaping activities occurring within the town. Like Alternative 2, all equipment would be rubber-tired, reducing ground disturbance and limiting the release of fugitive dust. In addition, Alternative 3 would comply with state regulations regarding vehicle and equipment idling times (California Health and Safety Code § 40720 and California Code of Regulations § 2485). Under Alternative 3, cut vegetation that cannot be chipped and broadcast in place may be burned using an air curtain burner—a pollution control device that reduces particulate matter released when burning vegetation waste. The air curtain burner would be operated on paved or gravel ground and in compliance with state and local regulations. Masticators would be used to grind up small trees and shrubs in place, which can produce dust when large chips impact the ground. Alternative 3 would comply with Butte County Air Quality Management District Rule 205 and implement the best available control measures for fugitive dust emission. Therefore, Alternative 3 would have minor, short-term air quality impacts from vehicle and equipment use, and activities contributing to the release of fugitive dust and other emissions.

Alternative 4

Construction of Alternative 4 could have temporary effects on air quality and climate due to the use of heavy equipment and vehicle use. Like Alternative 3, emissions would be similar to other commercial and residential landscaping activities occurring within the town and Alternative 4 would comply with state regulations regarding vehicle and equipment idling times and all equipment would be rubber-tired, reducing ground disturbance and limiting the release of fugitive dust. Alternative 4 would also comply with Butte County Air Quality Management District Rule 205 to reduce fugitive dust emission. Therefore, Alternative 4 would have minor, short-term air quality impacts from vehicle and equipment use, and activities contributing to the release of fugitive dust and other emissions.

4.5. Surface Waters and Water Quality

The Clean Water Act (CWA) of 1977, as amended, establishes requirements for states and tribes to identify and prioritize waterbodies that do not meet water quality standards. The town and its public road system is located within several watersheds, including the Little West Fork Watershed in the northeastern portion of the town, the Dry Creek and Little Dry Creek watersheds in the central area of town, and the Hamilton Slough and Little Butte Creek watersheds on the western and southwestern areas of town. There are no impaired waterbodies reported in the Dry Creek, Little Dry Creek, Little Butte Creek, and Hamilton Slough watersheds. The West Branch of the Feather River from Griffin Gulch to Lake Oroville is an impaired waterbody for aquatic life.

Several creeks and mapped wetlands intersect with public roads and private property parcels where activities under the action alternatives could occur (**Figure 4-1**).

4.5.1. NO ACTION ALTERNATIVE

Under the no action alternative, limited ongoing wildfire hazard reduction activities would be conducted by Paradise, Butte County, and property owners on their own initiative. The potential impacts from individual actions would be expected to be small in scale and impacts on surface waters and water quality would be negligible in the absence of a wildfire. Under the no action alternative, the risk of wildfire spread would not be substantially reduced. If a wildfire occurred, the loss of vegetation would impact surface water quality through increased soil erosion and sedimentation and there may be increased temperatures from the loss of shade along riparian zones. Additionally, intense lasting heat from major wildfires can cause soils to form hydrophobic layers, as described in **Section 4.2**, which would decrease infiltration of stormwater and aquifer recharge while increasing runoff, erosion, sedimentation, and stream discharges. The no action alternative could have minor to moderate impacts on surface waters and water quality, depending on the scale and intensity of a wildfire.

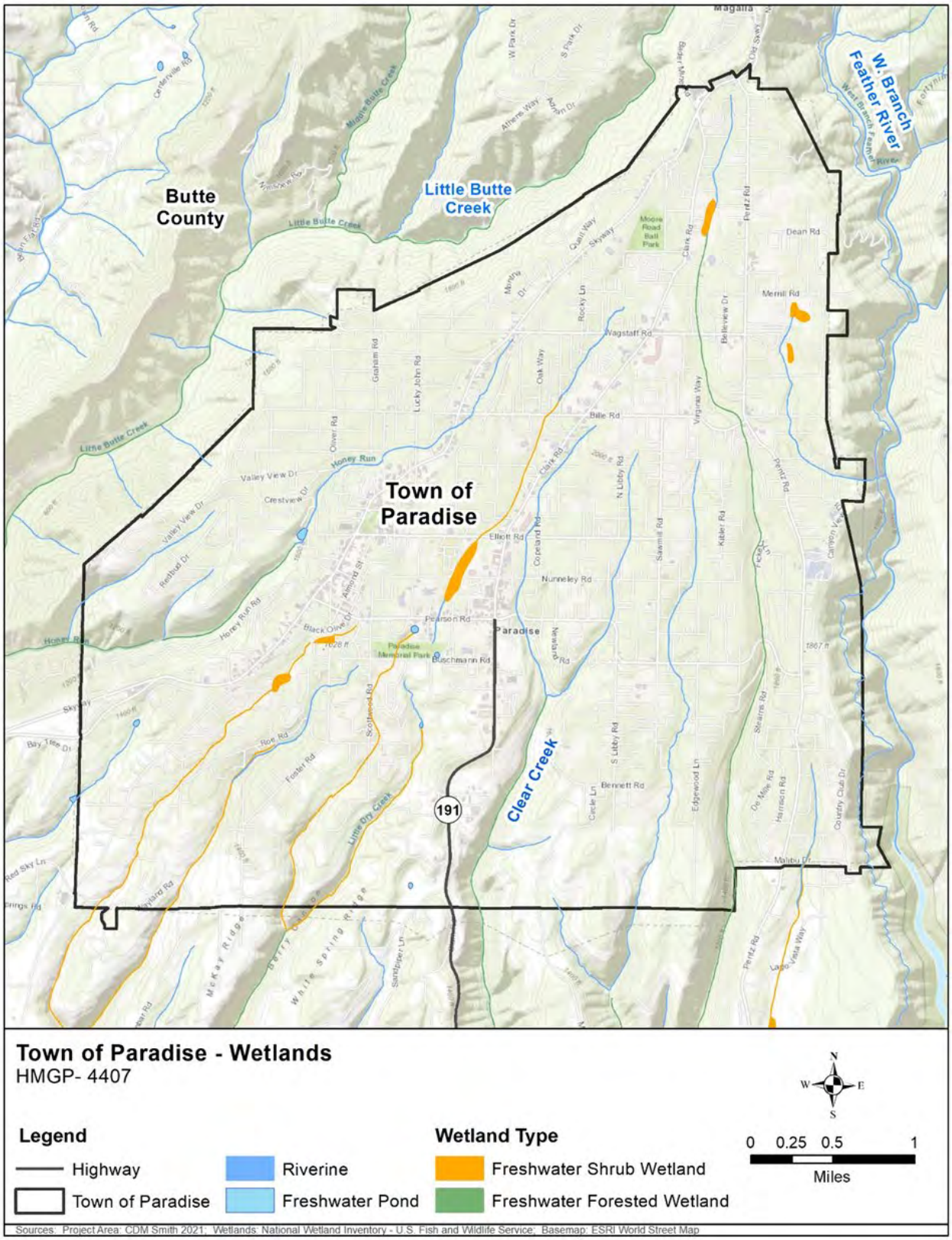

Figure 4-1. Watercourses and Wetlands Within the Project Area

4.5.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

The action alternatives would reduce the risk of wildfire spread in the treatment vicinity, and thus would reduce the risk of impacts associated with wildfires on water resources, as described in the no action alternative. Therefore, the action alternatives would have minor, long-term beneficial effects on waterbodies within and near the project area.

Project-Specific Consequences

Alternative 1

Alternative 1 would have no effect on surface waters and water quality because the actions would be limited to enforcement of defensible space standards. Some property owners may implement defensible space as a result of enforcement actions or educational outreach, but defensible space activities would be similar to ordinary landscape maintenance, would not result in ground disturbance, and would be unlikely to have more than negligible effects on water quality.

Alternative 2

Alternative 2 would not require in-water work. However, implementation of Alternative 2 could have effects on surface waters and water quality during construction and vegetation removal activities. During home hardening construction activities, the use of ground crews and the use of existing roads for access would result in negligible soil disturbance and mobilization of fine sediments that could affect water quality.

Alternative 3

Under Alternative 3, some vegetation would be retained, and root balls would not be disturbed, as described in Section 3.2.5, thus helping to prevent erosion from vegetation removal. No in-water work is proposed under Alternative 3. No vegetation removal would be performed near any wetlands, ponds, or rivers, and a minimum 25-foot to 150-foot buffer would be placed around these resources, dependent upon stream class and slope, as recommended by NMFS for State Hazard Tree Removal Programs (NMFS 2022). A project-specific Stormwater Pollution Prevention Plan (SWPPP) would be prepared and temporary erosion and sediment control measures, such as sediment fencing and straw waddles, would be implemented during hazardous fuel reduction work. Under Alternative 3, herbicides would be used twice per year to prevent weed growth; proper controls would be implemented to prevent herbicides from entering stormwater, waterbodies, and wetlands. Herbicide use would be conducted in compliance with state and local regulations. Impacts on water resources from implementation of Alternative 3 would be short-term and negligible.

Alternative 4

Under Alternative 4, access to and from the tree removal sites would require construction equipment to be used off-road, which would result in soil disturbance. With the use of rubber-tired equipment, the water quality effects from the mobilization of fine sediment would be negligible. Under Alternative

4, no in-water work is proposed, and no vegetation removal would be performed within a minimum 25-foot to 150-foot buffer around any wetlands, ponds, or rivers, dependent upon stream class and slope, as recommended by NMFS for State Hazard Tree Removal Programs (NMFS 2022). Like Alternative 3, a project-specific SWPPP would be prepared and temporary erosion and sediment control measures, such as sediment fencing and straw waddles, would be implemented during hazardous burnt tree removal to protect nearby waterways and wetlands from potential pollutants. Impacts on water resources from project implementation would be short-term and negligible.

4.6. Wetlands

Executive Order (EO) 11990, Protection of Wetlands, requires federal agencies to consider alternatives to work in wetlands and limits potential impacts on wetlands if there are no practicable alternatives. FEMA regulation 44 CFR § 9, Floodplain Management and Protection of Wetlands, sets forth the policy, procedures, and responsibilities to implement and enforce EO 11990 and prohibits FEMA from funding activities in a wetland unless no practicable alternatives are available. Activities that disturb wetlands may also require a permit from USACE under Section 404 of the CWA.

According to USFWS National Wetlands Inventory (NWI) maps, there is a total of 69.11 acres of freshwater forested/shrub wetlands within the town (**Figure 4-1**). Furthermore, these wetland features are broken into several distinct wetland types (**Table 4-3**) (USFWS 2022b).

Table 4-3. National Wetlands Inventory Wetland Classifications Within the Town of Paradise

Wetland Type	NWI Code	Area (acres)
Palustrine Scrub-Shrub Emergent Persistent Seasonally Flooded	PSS/EM1C	31.33
Palustrine Scrub-Shrub Seasonally Flooded	PSSC	15.01
Palustrine Forested Temporary Flooded	PFOA	10.34
Palustrine Forested Seasonally Flooded	PFOC	6.93
Palustrine Scrub-Shrub Temporary Flooded	PSSA	5.50
Palustrine Unconsolidated Bottom Artificially Flooded	PUBK	5.01
Total Freshwater Forested/Shrub Wetlands	-	69.11

Source: USFWS 2022b

Most wetland features within the project area are linear and run parallel to streams. The largest nonlinear wetland feature within the project area is a 13.33-acre PSS/EM1C wetland within and southeast of the Paradise Cemetery between Elliot Road and Pearson Road in the center of town. Other notable nonlinear wetland features within the project area include a 5.50-acre PSSA wetland that is just east of Clark Road and south of Franke Lane in the northeastern part of Paradise, and a 4.81-acre PSSC wetland that is just southwest of the intersection of Merrill Road and Shay Lane, also in northeastern Paradise (USFWS 2022b).

4.6.1. NO ACTION ALTERNATIVE

Under the no action alternative, limited ongoing wildfire hazard reduction activities would be conducted by Paradise, Butte County, and property owners on their own initiative. The potential impacts from individual actions would be expected to be small in scale and impacts on wetlands would be negligible in the absence of a wildfire. However, this alternative would not substantially reduce the risk of wildfire spread through the project area, which could destroy or deteriorate vegetation in wetlands and/or deteriorate water quality within wetlands from increased sedimentation. Destruction of vegetation in wetlands would deteriorate habitat for wildlife and lessen the effectiveness of wetlands to filter pollutants and maintain water quality. Therefore, the no action alternative would have a minor to moderate adverse effect on wetlands, depending on the scale and intensity of a wildfire.

4.6.2. ACTION ALTERNATIVES

General Consequence of the Action Alternatives

In the long term, the action alternatives would likely have minor beneficial effects on wetlands by reducing the risk of vegetation loss and sedimentation that could be caused by wildfires.

Project-Specific Consequences

Alternative 1

Alternative 1 would have no effect on wetlands because the actions would be limited to enforcement of defensible space standards. Some property owners may implement defensible space as a result of enforcement actions or educational outreach, but defensible space activities would be similar to ordinary landscape maintenance, would not result in ground disturbance, and would be unlikely to have more than negligible effects on wetlands.

Alternatives 2, 3, and 4

Alternatives 2, 3, and 4 could potentially have short-term minor adverse effects on wetlands if sedimentation or pollutants were to enter a wetland during or after project implementation. To minimize the potential adverse effects to wetlands, no vegetation removal would be performed near any wetlands, ponds, or rivers and a minimum 25-foot to 150-foot buffer would be placed around these resources, dependent upon stream class and slope, as recommended by NMFS for the State Hazard Tree Removal Program (NMFS 2022). Additionally, at work areas that have the potential to impact wetlands through impacts from stormwater runoff, BMPs such as temporary silt fences and straw waddles would be employed to ensure that no sedimentation or pollutants enter the wetland. Therefore, by avoiding wetlands and implementing BMPs that reduce sedimentation and pollution, Alternatives 2, 3, and 4 would have a negligible effect on wetlands in the short term.

The eight-step decision-making process for wetlands—which showed that the implementation of the project would be more beneficial than detrimental to wetlands and that there is no practicable alternative to conducting the action alternatives near wetlands—is included in Appendix C.

4.7. Floodplains

EO 11988, Floodplain Management requires federal agencies to avoid, to the extent possible, short- and long-term, adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practical alternative. FEMA regulations (44 CFR § 9.7) use the 1-percent-annual-chance flood as the minimal area for floodplain impact evaluation. FEMA follows an eight-step decision-making process to ensure compliance with EO 11988, which requires the evaluation of alternatives to the use of a floodplain prior to funding the action.

Although several creeks are present in the town, none have a floodplain with a 1-percent annual chance of flooding based on FEMA Flood Insurance Rate Map Panels 06007C0400E, 06007C0375E, 06007C0550E, and 06007C0575E, effective January 6, 2011, the entire town falls within Zone X, an area of minimal flood hazard.

4.7.1. NO ACTION ALTERNATIVE

In the absence of a major wildfire, the no action alternative would not affect floodplains, as the town is not located within a floodplain. However, this alternative does not meaningfully reduce the risk of wildfire spread, which could damage or eliminate existing vegetation beyond the project area, depending on the scale and intensity of a wildfire. If a wildfire were to occur, vegetation could be destroyed over large areas, which could lead to increased stormwater runoff following precipitation events. Loss of vegetation would adversely affect natural floodplain functions outside of the town by contributing to increased stormwater runoff and sedimentation. Therefore, the no action alternative could have minor to moderate adverse effects on floodplains in surrounding areas, depending on the intensity and scale of a wildfire.

4.7.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

There are no floodplains within the town; therefore, the action alternatives would have no impact on floodplains. The action alternatives would reduce the risk of wildfire spread and the potential for damage to vegetation that could lead to increased stormwater runoff and sedimentation from burned areas; therefore, there would be minor, long-term beneficial effects on floodplains in surrounding areas.

Project-Specific Consequences

As no floodplains are present within the town, no project-specific consequences are anticipated.

4.8. Vegetation

Paradise is in the Cascades, Central California Foothills and Coastal Mountains, and Sierra Nevada Ecoregions of northern California. Predominant vegetation for these ecoregions includes incense cedars (*Juniperus* sp.), firs (*Pseudotsuga* sp.), and pines (*Pinus* sp.), along with other Sierran species

(EPA et al. 2016). The 2021 Paradise Reseeding Plan, prepared by River Partners, describes the dominant vegetation communities after the Camp Fire as mixed-conifer woodland, oak woodland, chaparral, and grassland. The lower elevations in the town are dominated by chaparral or blue oak woodland. These chaparral communities contain various types of manzanita (*Arctostaphylos* sp.), toyon (*Heteromeles arbutifolia*), buckbrush (*Ceanothus cuneatus*), California bay laurel (*Umbellularia californica*), scrub oak (*Quercus berberidifolia*), western redbud (*Cercis occidentalis*), and poison oak (*Toxicodendron diversilobum*). The blue oak woodland communities contain primarily blue oak (*Quercus douglasii*) and non-native annual grasses. Mid elevations throughout the town comprise overstory species such as black oak (*Quercus kelloggii*) and ponderosa pine (*Pinus ponderosa*), with an understory of chaparral species such as manzanita, live oak (*Quercus chrysolepis*), deer brush (*Ceanothus integerrimus*), and buckbrush. Higher elevations comprise forests with ponderosa pine, Douglas fir, (*Pseudotsuga menziesii*), black oak, big leaf maple (*Acer macrophyllum*), Pacific dogwood (*Cornus nuttallii*), deer brush, toyon, and manzanita (River Partners 2021).

According to the Multi-Resolution Land Characteristics National Land Cover Database (NLCD), within the project area approximately 5,217 acres are composed of grasslands and herbaceous vegetation, 574 acres are composed of shrub/scrub vegetation, 356 acres are composed of forested vegetation, while the other 5,722 acres are developed. Land classifications are broken down further in **Table 4-4** (EPA 2011).

Table 4-4. National Land Cover Database Classification

NLCD Classification	Area (acres)
Grassland/Herbaceous	5,217.83
Developed, Open Space	3,187.78
Developed, Low Intensity	1,355.08
Developed, Medium Intensity	1,179.29
Shrub/Scrub	574.39
Evergreen Forest	222.64
Deciduous Forest	112.15
Mixed Forest	20.96
Total	11,870.12

4.8.1. INVASIVE SPECIES

EO 13112 requires federal agencies to prevent the introduction of invasive species and implement controls to minimize the economic, ecological, and human health impacts that invasive species cause. Invasive plant species, such as giant cane (*Arundo donax*), Japanese dodder (*Cuscuta japonica*), spotted knapweed (*Centaurea stoebe ssp. micranthos*), and skeleton weed (*Chondrilla juncea*), are present in the county, especially along streams and roads (California Invasive Plant Council [Cal-IPC] 2021).

According to the 2021 Paradise Reseeding Plan, most of Paradise contains a high number of invasive species as compared to pre-fire conditions. Prior to the Camp Fire, non-native annual grasses dominated the understory at lower elevations and areas with less canopy cover. Chinese tree of heaven (*Ailanthus altissima*) had been planted throughout much of Paradise and had begun to colonize in areas away from the original plantings. French broom (*Genista monspessulana*) dominated the lower elevations and Scotch broom (*Cytisus scoparius*) dominated higher elevations. Himalayan blackberry (*Rubus armeniacus*) was found throughout Paradise around creeks and drainages. After the Camp Fire, the most prevalent invasive species are French broom, Scotch broom, Chinese tree of heaven, Himalayan blackberry, poke weed (*Phytolacca americana*), and yellow star thistle (*Centaurea solstitalis*). Other invasive species such as edible fig (*Ficus carica*), black locust (*Robinia pseudoacacia*), pink silk tree (*Albizia julibrissin*), and catalpa (*Catalpa bignonioides*) can also be found throughout the town but are not as prevalent (River Partners 2021).

4.8.2. NO ACTION ALTERNATIVE

In the absence of a major wildfire, there would be minor adverse effects on vegetation from the continued spread of invasive species. Additionally, limited ongoing wildfire hazard reduction activities would be conducted by Paradise, Butte County, and property owners on their own initiative. The potential impacts from individual actions would be expected to be small in scale and impacts on vegetation would be minor. However, this alternative would not substantially reduce the risk of wildfire spread through the project area and, depending on the intensity and scale of a wildfire, there could be partial or complete loss of vegetation in and around the project area. In addition, a major wildfire could result in changes to the soil characteristics, as described in Section 4.2, that would prevent or delay regrowth of vegetation for many years following a fire. In the event of vegetation loss from a wildfire, non-native or invasive species, especially invasive grasses, might be expected to become established over larger areas. Under the no action alternative, there could be minor to major adverse impacts on vegetation, depending on the intensity and scale of a wildfire.

4.8.3. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

In the long term, the action alternatives would have minor beneficial effects on vegetation because the risk of wildfire spread, and associated vegetation damage and invasive species spread, would be reduced.

Project-Specific Consequences

Alternative 1

Alternative 1 would have negligible effects on vegetation, as homeowners are encouraged to implement defensible space around structures through enforcement and education actions. The effects would be similar to normal landscape maintenance and would not require grading or ground disturbance.

Alternative 2

As with Alternative 1, Alternative 2 would also require the implementation of defensible space with negligible effects on vegetation close to existing structures.

Alternative 3

Alternative 3 would remove hazardous fuels, including brush and small trees. Beneficial vegetation greater than 6 inches DBH would be retained. Reducing shrub density would reduce the ability of a fire to climb into the crowns of the remaining trees. By removing the hazardous fuels, Alternative 3 would create a more fire-resilient vegetation community that would reduce the intensity of wildfires that could occur within the project area. Therefore, Alternative 3 would have minor beneficial effect on existing vegetation communities.

The use of mechanical equipment, such as masticators mounted to excavators and cranes, would disturb the ground and increase the risk of invasive species spread. However, herbicide spraying would be implemented to prevent weed growth in the hazardous fuels reduction areas along road rights-of-way. Herbicide would be used and stored in accordance with local, state, and federal regulations and all herbicide applications would follow the product label application instructions and BMPs for the use of herbicides. The amount of ground disturbance would be minimized to the maximum extent possible on private lands and landowners would be responsible for compliance with state and county invasive species control regulations. Hence, there would be short-term minor adverse effects on vegetation.

Alternative 4

Alternative 4 would remove hazardous burnt trees left behind in the wake of the Camp Fire. The use of mechanical equipment, such as excavators and cranes, would disturb the ground and increase the risk of invasive species spread. The amount of ground disturbance would be minimized to the maximum extent possible on private lands and landowners would be responsible for compliance with state and county invasive species control regulations. Hence, there would be short-term minor adverse effects on vegetation.

4.9. Fish and Wildlife

The project area is located in the Cascades, Central California Foothills and Coastal Mountains, and Sierra Nevada Ecoregions of northern California. These ecoregions comprise a diverse network of mountain ranges, valleys, and foothills that provide a variety of habitats for fish and wildlife (EPA et al. 2016). The project area is entirely within the town limits and is generally located close to structures and infrastructure; therefore, habitats within the project area may be fragmented and species that are more adapted to human disturbance are prevalent. Examples of common birds and mammals in Paradise include the acorn woodpecker (*Melanerpes formicivorus*), oak titmouse (*Baeolophus inornatus*), house wren (*Troglodytes aedon*), and western gray squirrel (*Sciurus griseus*) (Butte County 2021).

The Migratory Bird Treaty Act (MBTA) of 1918, as amended (16 United States Code [U.S.C.] 703–711), provides protection for migratory birds and their nests, eggs, and body parts from harm, sale, or other injurious actions, except under the terms of a valid permit issued pursuant to federal regulations. All native birds are protected by the MBTA and existing habitat within the town has the potential to support a variety of native bird species. Several migratory bird species could occur within the project area, including species such as black-throated gray warbler (*Dendroica nigrescens*), Cassin's finch (*Carpodacus cassinii*), common yellowthroat (*Geothlypis trichas sinuosa*), Lawrence's goldfinch (*Carduelis lawrencei*), and oak titmouse (USFWS 2021a). The nesting season for migratory birds is generally March through July, depending on the species.

The Bald and Golden Eagle Protection Act of 1940 prohibits the take, possession, sale, or other harmful action of any bald or golden eagle, alive or dead, including any part, nest, or egg (16 U.S.C. 668(a)). Bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) are not expected to nest in the treatment areas because of the proximity of developed lands; although, they would occasionally pass through while foraging. In addition, large bodies of open water and rocky cliffs (preferred for nesting by these species) are not present within the project area.

Within the town, Clear Creek, Honey Run Creek, Little Dry Creek, and the West Branch of the Feather River show the features and characteristics needed to support fish. Additionally, there are several intermittent and ephemeral streams that could support fish at different times of the year. The town is within the Dark Canyon – West Branch Feather River, Dry Creek, Hamlin Slough, Little Butte Creek, Little Dry Creek, and Little West Fork West Branch Feather River – West Branch Feather River sub-watersheds. There are 17 fish species with ranges that include these waterways, such as central California roach (*Lavinia symmetricus symmetricus*), coastal rainbow trout (*Oncorhynchus mykiss irideus*), hardhead (*Mylopharodon conocephalus*), riffle sculpin (*Cottus gulosus*), Sacramento pikeminnow (*Ptychocheilus grandis*), and Sacramento sucker (*Catostomus occidentalis occidentalis*). The Little Butte Creek and Hamlin Slough drainages are within the range for chinook salmon (*Oncorhynchus tshwytscha*) and steelhead (*Oncorhynchus mykiss*), and both species have been documented approximately 1 mile west of the project area in Butte Creek (California Department of Fish and Wildlife [CDFW] 2020, 2021).

4.9.1. NO ACTION ALTERNATIVE

In the absence of a major wildfire, the no action alternative would have no effect on common fish and wildlife species. Limited ongoing wildfire hazard reduction activities conducted by Paradise, Butte County, and property owners would remove some vegetation and habitat. However, effects to fish and wildlife would be negligible because impacts from individual actions would be expected to be small in scale, generally close to structures, and avoid waterways. Similarly, impacts on migratory birds and eagles would be negligible even if work were performed during the nesting season. However, under the no action alternative, a major wildfire that could result in the destruction of terrestrial and aquatic habitat would be more likely to spread, as experienced during the Camp Fire in 2018. Therefore, if a fire were to occur, the no action alternative would have minor to moderate adverse effects on wildlife, fish, and their habitats, depending on the scale and intensity of the fire.

4.9.2. ACTION ALTERNATIVES

General Consequence of the Action Alternatives

In the long term, under the action alternatives, there would be minor beneficial effects on wildlife, fish, migratory birds, and eagles because the risk of wildfire spread and associated widespread vegetation and habitat loss would be reduced.

Project-Specific Consequences

Alternatives 1 and 2

Alternatives 1 and 2 would have negligible effects on fish and wildlife because the actions required to implement defensible space either because of an enforcement action or through education would only affect vegetation close to structures and be similar to normal landscape maintenance activities.

Alternatives 3 and 4

Alternatives 3 and 4 have the potential to impact common wildlife species and associated habitats occurring within the project area with the removal of brush and trees. Additionally, noise associated with the use of mechanical equipment could disturb wildlife and cause individuals to move from their preferred areas or temporarily change their behavior. Because of the high level of development within the project area, the bird and mammal species expected in the project areas are those that are commonly found in residential/commercial areas, and which are accustomed to human disturbance. The noise and activity levels produced by vehicles and construction equipment during implementation would be localized, temporary, and indiscernible from other reconstruction activities occurring in the town. Therefore, Alternatives 3 and 4 would have a minor adverse effect on common wildlife species in the short term.

There would be no in-water work and a minimum 25-foot no-work buffer would be implemented around all waterbodies, as recommended by NMFS for the State Hazard Tree Removal Program (NMFS 2022). Additionally, temporary erosion and sediment controls, such as silt fences and straw waddles, would be implemented, as needed, during hazardous fuels reduction and hazardous burnt tree removal activities to protect nearby waterways and wetlands from potential nonpoint source pollutants. Hence, there would be no effect on fish species or their habitat in the short term.

Vegetation clearing associated with Alternative 3 and tree removal associated with Alternative 4 could affect migratory birds if work were to occur during the nesting season, generally between March and July. Disturbances associated with implementation could result in inadvertent nest destruction, such as birds abandoning nesting activities leading to loss of eggs or young. Because Alternatives 3 and 4 would be conducted within the town limits (in areas generally close to existing structures where the vegetation likely contains a higher percentage of non-native species or is already subject to regular maintenance disturbances as compared to undeveloped areas outside of the town), the density of nesting birds is expected to be relatively low. Thus, if vegetation clearing and tree removal during the nesting season cannot be avoided, Alternatives 3 and 4 would have minor short-term adverse effects on migratory birds.

If vegetation and tree removal during the nesting season (March 15 to July 31) cannot be avoided, the project would be subject to the MBTA. Paradise would be responsible for determining if active nests are present (prior to clearing), obtaining and complying with any necessary permits from the USFWS, and documenting this in each project area action plan. USFWS allows empty or abandoned nests to be removed and destroyed without a permit as long as they are not taken into possession.

Alternatives 3 and 4 would likely have a negligible effect on bald and golden eagles and their habitat because project activities would primarily take place near residential/commercial areas and away from large lakes and rivers where eagles are not likely to occur. In addition, the project area does not support nesting habitat for bald and golden eagles, and hazardous fuels reduction work would primarily target small trees and brush, which do not provide suitable conditions for nesting or perching. The hazardous burnt tree removal work under Alternative 4 would only target burnt, dead or dying trees, which would allow nests to be easily identified and avoided.

4.10. Threatened and Endangered Species and Critical Habitat

The ESA of 1973 gives USFWS and NMFS authority for the protection of threatened and endangered species. This protection includes a prohibition on direct take (e.g., killing, harassing) and indirect take (e.g., destruction of habitat).

The ESA defines the action area as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action" (50 CFR §402.02). Therefore, the action area where effects on listed species must be evaluated may be larger than the treatment areas where project activities would occur. The farthest-reaching potential effect of the action alternatives would be noise, vibration, and dust generated during project activities. The action alternatives would occur within the city limits in an urban setting and the species analyzed are not particularly sensitive to noise disturbance. Because the specific treatment areas have not yet been identified, this EA evaluates all the potential project areas; therefore, the analysis encompasses the entire town and does not extend past town limits.

The USFWS Information for Planning and Consultation (IPaC) planning tool was used to identify proposed, threatened, and endangered species within the action area. In addition, information available from the state Programmable Geographic Information System for Cataloging and Encoding Species observations, was used to identify potential fish species that could occur within the action area. All listed species that may be near the action area are shown in **Table 6** and are briefly discussed below (USFWS 2021a; CDFW 2021).

Table 4-5. Federally Listed Species in the Project Area

Species Name	Scientific Name	Federal Listing Status
Amphibians		
California red-legged frog	*Rana draytonii*	Threatened
Foothill yellow-legged frog – Feather River DPS	*Rana boylii*	Proposed Threatened

Species Name	Scientific Name	Federal Listing Status
Birds		
Least Bell's vireo	*Vireo bellii pusillus*	Endangered
Crustaceans		
Conservancy fairy shrimp	*Branchinecta conservatio*	Endangered
Vernal pool fairy shrimp	*Branchinecta lynchi*	Threatened
Vernal pool tadpole shrimp	*Lepidurus packardi*	Endangered
Fish		
Chinook salmon – Central Valley spring-run ESU	*Oncorhynchus tshawytscha pop. 6*	Threatened
Delta smelt	*Hypomesus transpacificus*	Threatened
Steelhead – Central Valley DPS	*Oncorhynchus mykiss irideus pop. 11*	Threatened
Insects		
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Threatened
Reptiles		
Giant garter snake	*Thamnophis gigas*	Threatened
Flowering Plants		
Butte County meadowfoam	*Limnathes floccosa ssp. californica*	Endangered
Greene's tuctoria	*Tuctoria greenei*	Endangered
Hairy Orcutt grass	*Orcuttia pilosa*	Endangered
Hoover's spurge	*Chamaesyce hooveri*	Threatened

DPS- Distinct Population Segment; ESU- Evolutionarily Significant Unit
Source: USFWS 2021a; CDFW 2020

California red-legged frog: Suitable habitat for the California red-legged frog includes a variety of aquatic habitats such as streams, deep pools, backwaters within streams and creeks, ponds and marshes for breeding, riparian vegetation for resting and feeding, and upland habitats for dispersal. Suitable habitat for the California red-legged frog may occur along the West Branch of the Feather River and Little Butte Creek as well as along the several unnamed seasonal streams that occur within the town. The nearest documented occurrence of California red-legged frog occurs approximately 8.6 miles east of the project area at elevations between 2,500 feet mean sea level (msl) and 2,650 feet msl (CDFW 2021).

Foothill yellow-legged frog – Feather River Distinct Population Segment (DPS): The foothill yellow-legged frog is a stream-obligate species that is usually observed in or along the edges of cool rocky streams within a wide variety of vegetation types including valley-foothill hardwood, valley-foothill hardwood-conifer, valley-foothill riparian, ponderosa pine, mixed conifer, mixed chaparral, and wet meadow (USFWS 2021b; Butte County Association of Governments 2019). Foothill yellow-legged frogs spend most of their time in or near streams during all seasons, but some will disperse or

migrate out of breeding habitat into adjacent terrestrial riparian and aquatic tributary habitat during the nonbreeding season and during times of high flow (USFWS 2021b). Suitable habitat for the foothill yellow-legged frog does occur along the West Branch of the Feather River and Little Butte Creek, as well as the several unnamed seasonal streams that occur within the town of Paradise. The foothill yellow-legged frog has been documented post-Camp Fire within the AA and there is a large number of occurrences (48) of the species within 10 miles of the AA (CDFW 2021).

Least Bell's vireo: Suitable habitat for the Least Bell's vireo includes several riparian habitat types that are composed of dense cover within 3 to 6 feet of the ground for nesting and a dense, stratified canopy for foraging. Habitat types such as cottonwood-willow woodlands/forests, oak woodlands, and mule fat scrub are known to support the species. Suitable habitat for the Least Bell's vireo may occur along the riparian corridors that surround the West Branch of the Feather River and Little Butte Creek, which overlap with the project area. The nearest documented occurrence of the Least Bell's vireo is approximately 8.75 miles west of the project area (CDFW 2021).

Conservancy fairy shrimp: Conservancy fairy shrimp can only be found in vernal pool habitats. Although wetlands are present within the project area, there are no vernal pool core areas or documented vernal pool species occurrences that overlap with the project area. Additionally, vernal pools do not typically occur at elevations above 500 feet msl. Elevations in the project area range from approximately 1,000 feet msl along Honey Run Creek in the southwestern portion of the project area to approximately 2,350 feet msl in the northeastern portion of the project area. Conservancy fairy shrimp have not been documented within 10 miles of the project area (CDFW 2021).

Vernal pool fairy shrimp: Vernal pool fairy shrimp can only be found in vernal pool habitats. Although wetlands are present within the project area, there are no vernal pool core areas or documented vernal pool species occurrences that overlap with the project area. Additionally, vernal pools do not typically occur at elevations above 500 feet msl. Elevations in the project area range from approximately 1,000 feet msl along Honey Run Creek in the southwestern portion of the project area to approximately 2,350 feet msl in the northeastern portion of the project area. The nearest documented occurrence of vernal pool fairy shrimp is approximately 7.7 miles west of the project area in a vernal pool core area (CDFW 2021).

Vernal pool tadpole shrimp: Vernal pool tadpole shrimp can only be found in vernal pool habitats. Although wetlands are present within the project area, there are no vernal pool core areas or documented vernal pool species occurrences that overlap with the project area. Additionally, vernal pools do not typically occur at elevations above 500 feet msl. Elevations in the project area range from approximately 1,000 feet msl along Honey Run Creek in the southwestern portion of the project area to approximately 2,350 feet msl in the northeastern portion of the project area. The nearest two documented occurrences of vernal pool fairy shrimp are approximately 6.9 miles west and 6.9 miles east of the project area (CDFW 2021).

Chinook salmon – Central Valley spring-run (CVSR) evolutionarily significant unit (ESU): CVSR chinook salmon enter the Sacramento River between March and September, but primarily in May and June after beginning their upstream migration in late January and early February. CVSR chinook salmon

generally enter rivers as sexually immature fish. They must hold in deep, cold, freshwater pools for up to several months before spawning between mid-August and early October (National Oceanic and Atmospheric Administration [NOAA] 2014). There are no rivers or streams within Paradise that could support the species. The nearest documented occurrence of Chinook salmon occurs in Butte Creek, which is approximately 1 mile east of the project area (CDFW 2021).

Delta smelt: Delta smelt are endemic to the upper Sacramento-San Joaquin estuary and occur primarily below Isleton on the Sacramento River. Spawning occurs in freshwater between January and July and can occur in the Sacramento River as far upstream as Sacramento (USFWS 1996). There are no rivers or streams within Paradise that could support the species. There are no documented occurrences of delta smelt within a 10-mile radius of the project area (CDFW 2021).

Steelhead – Central Valley DPS: Steelhead generally migrate into the Sacramento River in spring and early summer, with peak migration occurring in March and April (NOAA 2014). Within the project area, critical habitat for steelhead occurs in Little Dry Creek; however, the portion of Little Dry Creek within the project area does not contain suitable habitat for steelhead and no suitable aquatic habitat that could support steelhead occurs within the project area. There are no rivers or streams within Paradise that could support the species. The nearest documented occurrence of steelhead occurs in Butte Creek, which is approximately 1 mile east of the project area (CDFW 2021).

Valley elderberry longhorn beetle: Suitable habitat for the valley elderberry longhorn beetle includes riparian corridors that contain elderberry (*Sambucus* sp.). Riparian corridors along the West Branch of the Feather River, Little Butte Creek, and the unnamed seasonal streams within Paradise may contain suitable habitat for the species. The nearest documented occurrence of the valley elderberry longhorn beetle occurs approximately 6.6 miles southwest of the project area along Butte Creek (CDFW 2021).

Giant garter snake: The giant garter snake is endemic to wetlands and inhabits tule marshes and seasonal wetlands created by overbank flooding. Although there are some small wetlands and ponds within Paradise, these areas do not offer the characteristics needed to support the giant garter snake. Additionally, giant garter snake habitat is typically treeless and occurs at low elevations (10 to 40 feet msl). There are no documented occurrences of the giant garter snake within a 10-mile radius of the project area (CDFW 2021).

Vernal pool plants (Butte County meadowfoam, Greene's tuctoria, Hairy Orcutt grass, Hoover's spurge): Suitable habitat (i.e., vernal pools) does not occur in the project area to support Butte County meadowfoam, Greene's tuctoria, Hairy Orcutt grass, and/or Hoover's spurge. Although wetlands are present within the project area, there are no vernal pool core areas or documented vernal pool species occurrences that overlap with the project area. Additionally, vernal pools do not typically occur at elevations above 500 feet msl. Elevations in the project area range from approximately 1,000 feet msl along Honey Run Creek in the southwestern portion of the project area to approximately 2,350 feet msl in the northeastern portion of the project area. The nearest documented occurrence of Butte County meadowfoam is approximately 5.5 miles west of the project area. The nearest documented occurrences of Greene's tuctoria and Hoover's spurge are

approximately 6.9 miles southwest of the project area. Hairy Orcutt grass has not been documented within 10 miles of the project area (CDFW 2021).

Critical Habitat: Critical habitat for steelhead occurs within the project area in Little Dry Creek. Additionally, critical habitat for chinook salmon, Butte County meadowfoam, California red-legged frog, Green's tuctoria, Hairy Orcutt grass, Hoover's spurge, vernal pool fairy shrimp, and vernal pool tadpole shrimp occurs within 10 miles of the project area but does not overlap with it (**Figure 4-2**) (USFWS 2022c).

Essential Fish Habitat: The Magnuson-Stevens Fisheries Conservation and Management Act (16 U.S.C. 1801 et seq.) designates Essential Fish Habitat (EFH) for certain commercially managed marine and anadromous fish species and is intended to protect the habitat of commercially managed fish species, including anadromous fish species, from being lost because of disturbance and degradation. Designated EFH occurs for chinook salmon in approximately 90 percent of the fish-bearing streams within the project area (**Figure 4-3**) (NOAA 2022).

4.10.1. NO ACTION ALTERNATIVE

In the absence of a major wildfire, the no action alternative would have no effect on listed species and their habitats. Limited ongoing wildfire hazard reduction activities conducted by Paradise, Butte County, and property owners would remove some vegetation and habitat. However, effects to listed species would be negligible because impacts from individual actions would be expected to be small in scale, would not involve in water work, and would be within the developed areas of the town. However, under the no action alternative, a major wildfire that could result in the destruction of terrestrial and aquatic habitat would be more likely to spread, such as that which occurred with the Camp Fire. Therefore, the no action alternative would have minor to moderate adverse effects on listed species and their habitats, depending on the scale and intensity of a wildfire.

4.10.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

In the long term, under all action alternatives, there would be minor beneficial effects to listed species, designated critical habitat, and EFH because the risk of wildfire spread and associated widespread vegetation loss would be reduced.

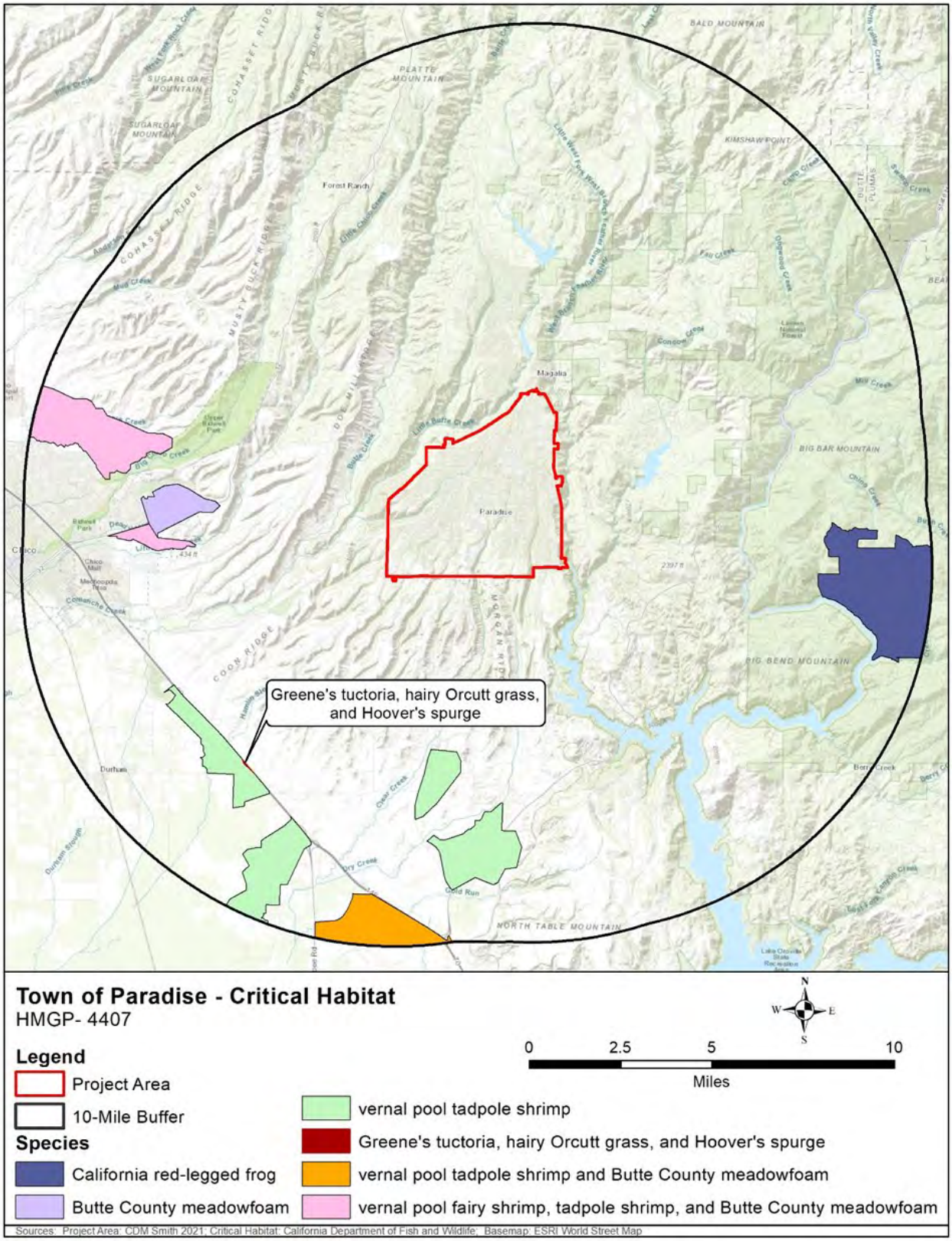

Figure 4-2. Critical Habitat near the Project Area

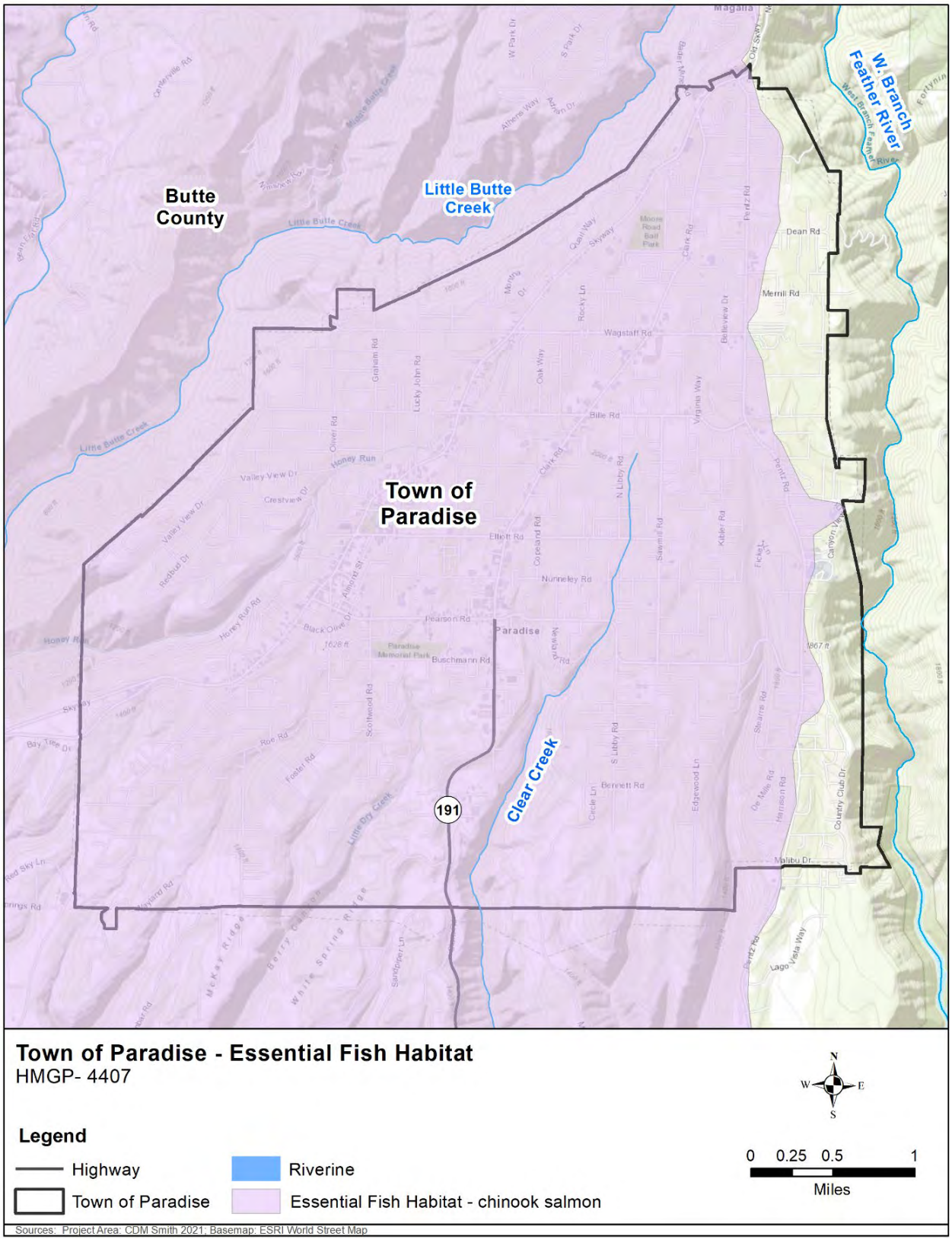

Figure 4-3. Essential Fish Habitat within the Project Area

Project-Specific Consequences

Alternatives 1 and 2

Alternatives 1 and 2 would have negligible effects on ESA-listed species because the actions would be limited to creation of defensible space adjacent to existing structures and improvements to existing structures without changing the footprint of those structures. As a result of enforcement actions or educational outreach, some property owners may implement defensible space on their own; however, defensible space activities would be similar to ordinary landscape maintenance, would not result in ground disturbance, and would be unlikely to have more than negligible effects on ESA-listed species. Ignition-resistant improvements would use power tools and the activities would be similar to normal structural maintenance activities that would ordinarily occur in residential and commercial areas.

Alternatives 3 and 4

Alternatives 3 and 4 could have a minor adverse effect on ESA-listed species in the short term. Suitable habitat for non-fish aquatic species, such as the California red-legged frog, foothill yellow-legged frog, and valley elderberry longhorn beetle, does occur within portions of the project area. However, considering the fragmentation between suitable habitats in the project area, the implementation of a minimum 100-foot no-work buffer around waterbodies where habitat for non-fish aquatic species is present, and the implementation of a minimum 25-foot no-work buffer around waterbodies where habitat for non-fish species is not present as recommended by NMFS for the State Hazard Tree Removal Program (NMFS 2022), the potential for these species to be present in work areas is extremely low. Suitable habitat could be negatively impacted by vegetation and tree removal within riparian areas. Additionally, if individuals were to be present within or near to the project area, noise and vibration associated with Alternatives 3 and 4 could disturb these species and cause them to move from their preferred areas or temporarily change their behavior. General and species-specific avoidance and minimization measures (including the presence of a biological monitor during tree and vegetation removal activities), as required through consultation with USFWS, would mitigate potential adverse effects on listed wildlife species to a negligible level. FEMA submitted a Biological Assessment to USFWS that included an addendum analyzing the foothill yellow-legged frog for consultation on January 3, 2023. USFWS concurred with the determination on March 7, 2023, with the implementation of the general and species-specific avoidance and minimization measures listed in Appendix A.

There would be no in-water work and a no-work buffer would be placed a minimum of 100 feet around waterbodies or wetlands where habitat for non-fish aquatic species is present and 25 feet around waterbodies where habitat for non-fish species is not present. Additionally, temporary erosion and sediment controls (such as silt fences and straw waddles) would be implemented during hazardous fuels reduction and hazardous burnt tree removal work to protect nearby waterways and wetlands from potential pollutants. Hence, there would be no effect on listed fish species or their habitats, including designated critical habitat and EFH.

4.11. Cultural Resources

This section provides an overview of potential environmental effects on cultural resources, including historic properties. Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470f), requires that activities using federal funds undergo a review process to consider potential effects on historic properties that are listed in or may be eligible for listing in the National Register of Historic Places. Cultural resources include prehistoric or historic archaeology; historic standing structures; historic districts; objects; artifacts; cultural properties of historic or traditional significance, referred to as Traditional Cultural Properties, which may have religious or cultural significance to federally recognized Indian tribes; or other physical evidence of human activity considered to be important to culture, subculture, or community for scientific, traditional, religious, or other reasons.

Pursuant to 36 CFR § 800.4(a)(1), FEMA has defined an Area of Potential Effects (APE) that includes all areas within which the undertakings may directly or indirectly affect cultural resources. Because the specific properties that would be included in the Residential Ignition-Resistant Improvement and Hazardous Burnt Tree Removal Programs have not yet been identified, FEMA's initial APE for the action alternatives is equal to the town limits, which spans 16.8 square miles.

The project area lies within the traditional territory of the Konkow, also known as the Northwestern Maidu. Konkow villages consisted of anywhere from 25 to 200 inhabitants and were frequently situated along major rivers within the Sacramento Valley or on elevated knolls or ridge flats above drainages in the foothills (Riddell 1978). Euroamerican settlement of the region did not occur until establishment of Mexican ranchos in the 1840s, but land use quickly changed with the Gold Rush, and Butte County was established as one of the original 27 counties in California (Beck and Haase 1974:61). Many of the initial towns in Butte County originated as mining camps along the Feather River and Butte Creek; only Paradise grew to a major incorporated town (Hoover et al. 1990). Most of the county's early settlers were involved in gold mining, livestock production, and agriculture, and later lumber operations (McDonald 2000).

According to records obtained through the California Historical Resources Information System in December 2018, at least 49 prehistoric or historic period archaeological sites, isolated finds, or historic period-built environment resources have been recorded within the town limits. These include the Centerville Schoolhouse that is listed in the NRHP and the Paradise Forest Fire Station that appears eligible for the NRHP or as a State Historical Landmark. The Honey Run Bridge was listed in the NRHP, but it was destroyed in the 2018 Camp Fire.

Additional work conducted between September 2020 and November 2021 as part of FEMA's Hazard Tree Removal Program under the Public Assistance Program documented a total of 327 cultural resources within the project footprint, including 255 newly recorded and 72 previously recorded resources. Of the 255 newly recorded resources, 190 were archaeological sites, 32 were isolated finds, and 33 comprised mining-related resources associated with the Butte Creek Mining District. The 2020-21 study is the largest and most recent study to overlap the town limits and provided a substantial body of information about Butte County cultural history. All work was conducted in

coordination with five Native American Tribes, including the Berry Creek Rancheria of Maidu Indians, Estom Yumeka Maidu Tribe of the Enterprise Rancheria, Mechoopda Indian Tribe of Chico Rancheria, Mooretown Rancheria of Maidu Indians, and the Konkow Valley Band of Maidu Indians. A final report summarizing the 2020-2021 study is currently in production.

According to 36 CFR § 800.14(b), when effects on historic properties are similar and repetitive or regional in scope, or when effects on historic properties cannot be fully determined prior to approval of a project, a federal agency may negotiate a Programmatic Agreement to govern the implementation of a particular program or the resolution of adverse effects from certain complex project situations or multiple projects. FEMA has proposed to develop and execute a Section 106 Programmatic Agreement in consultation with the State Historic Preservation Officer, Paradise, consulting Tribes, and other parties consistent with 36 CFR § 800.6(b)(1)(i-iv) for Alternatives 2, 3, and 4. The Programmatic Agreement would govern the phased identification and evaluation of archaeological and historic period built environment resources associated with the action alternatives, measures to avoid or minimize effects, as well as measures to resolve adverse effects to historic properties that may result from their implementation (see below). The proposed programmatic agreement would also include provisions for the discovery of historic properties or management of any inadvertent effects, consistent with 36 CFR §800.13(b). In the event that any cultural resources are discovered, or inadvertent effects are identified during implementation of the action alternatives, it is anticipated the programmatic agreement would require the Subapplicant to immediately cease work, secure the area, and notify FEMA, Paradise, the State Historic Preservation Office (SHPO), and any consulting parties and consult to resolve the situation.

4.11.1. NO ACTION ALTERNATIVE

Under the no action alternative, existing conditions, including wildfire hazards, would be expected to remain high. Fewer properties would be inspected for defensible space, many individual property owners would not be able to upgrade existing structures with ignition-resistant materials, hazardous fuels along segments of public right-of-way would remain, and hazardous burnt trees with the potential to contribute to further wildfires would remain on private lands. Under the no action alternative, Paradise, Butte County, and individual property owners may continue some wildfire mitigation activities without the implementation of avoidance and minimization measures associated with the action alternatives; thus, there would be the potential for direct disturbance to cultural resources. Further, if people are unable to rebuild and therefore move away, the integrity of built environment historic properties may decline due to neglect. Despite the potential for some wildfire mitigation activities to occur, the risk of wildfire spread would remain high. Depending on their scale and intensity, future wildfires would be expected to have minor to major impacts on archaeological resources or historic period-built environment resources in the APE.

4.11.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

No general consequences under all action alternatives are anticipated, see project-specific consequences below.

Project-Specific Consequences

Alternative 1

Alternative 1 is unlikely to affect historic properties because the actions would be limited to enforcement of defensible space standards. Some property owners may implement defensible space as a result of enforcement actions or educational outreach, but defensible space activities would be similar to ordinary landscape maintenance, would not result in ground disturbance, and would be unlikely to have more than negligible effects on historic properties.

Alternative 2

Alternative 2 would include accepting and approving applications as well as completing ignition-resistant improvements to structures on a property-by-property basis. Because the specific properties that would be included and the improvements that would be implemented as part of the program would remain undetermined until applications have been accepted, the effects of the program on potential historic properties cannot be fully determined prior to approval of the Undertaking. Therefore, pursuant to 36 CFR § 800.14(b), FEMA has proposed developing a programmatic agreement that would provide a process for compliance with Section 106. It would outline a procedure for evaluating, on a property-by-property basis, the potential for the proposed activities at each location to affect any historic properties should they be present. The programmatic agreement would include a process for consultation with consulting parties and the SHPO on any findings and determinations. If the parties determine the proposed activities may adversely affect a historic property, they will consult to develop property-specific mitigation measures on a case-by-case basis prior to implementation of any activities on an individual property.

Alternative 3

Alternative 3 would involve clearing grass, brush, and small trees (less than 6 inches DBH), leaving root balls intact, along 99 miles of public roadways within Paradise using hand tools, mechanical equipment, and herbicides. Work areas would span approximately 275 acres and would be confined to public rights-of-way. This work has the potential to affect historic properties due to the physical disturbance or alteration of potential information-bearing archaeological deposits [36 CFR § 800.5(a)(2)(i)]. While work would be limited to the existing rights-of-way, it is possible that intact, information-bearing archaeological deposits may be present between the road shoulder and edge of right-of-way that survived the road construction. Built environment historic properties, however, are unlikely to be present in the rights-of-way. The proposed programmatic agreement would include provisions for determining the likelihood of such archaeological sites having survived and provide a process for protecting them during project activities. If protection is not feasible, the programmatic

agreement would include a process for resolving any adverse effects in consultation with consulting parties and the SHPO.

Alternative 4

Alternative 4 would involve removing hazardous burnt trees on private property. Specific properties that would be included, as well as the number and location of trees that would be removed, would remain undetermined until after program applications are accepted and arborist assessments have been completed on a property-by-property basis. Similar to Alternative 3, the effects of Alternative 4 on potential historic properties cannot be fully determined prior to approval of the Undertaking because the exact locations are not presently known. However, the proposed tree removal methods are sufficiently defined that it is possible to understand the nature of any potential effects of these project activities on historic properties. Trees would be cut, and the root balls would be left intact; however, removing felled trees would involve either lifting them with a crane or dragging them with mechanical equipment, including potentially having multiple entry and exit points through parcels. No effects are anticipated to build environment resources due to careful use of directional falling. However, there would be the potential to physically disturb or damage archaeological, cultural, or ethnographic sites that might be historic properties by dragging logs or driving tracked equipment across them. The proposed programmatic agreement would include provisions for determining the likelihood of such sites being present and provide a process for protecting them during project activities. If protection is not feasible, the programmatic agreement would include a process for resolving any adverse effects in consultation with Consulting Parties and the SHPO.

4.12. Environmental Justice

Environmental justice is defined by EO 12898 (59 Federal Register 7629) and CEQ guidance (1997). Under EO 12898, demographic information is used to determine whether minority populations or low-income populations are present within the areas potentially affected by the range of project alternatives. If so, a determination must be made whether implementation of the project alternatives may cause disproportionately high and adverse human health or environmental impacts on those populations.

The project area encompasses the Town of Paradise in Butte County, California. This environmental justice analysis is focused at the local (i.e., Town of Paradise) level. The local area included in this analysis is where project-related impacts would occur, potentially causing an adverse and disproportionately high effect on existing minority and low-income populations. A minority and/or low-income population exists in the town if the People of Color Population and/or Low-Income Population equals or exceeds the 50th percentile compared to the average of California. This means that the minority and/or low-income population exceeds the statewide average.

Minority Populations: CEQ (1997) defines the term 'minority' as persons from any of the following groups: Black, Asian or Pacific Islander, American Indian or Alaskan Native, and Hispanic. According to EPA's Environmental Justice Screening and Mapping Tool (EPA 2022b), the town is in the 4th percentile in the state for minority populations. As such, the town would not be considered to contain a minority population because it does not meet the percentile threshold listed above.

Low-Income Populations: Residents of areas with a high percentage of people living below the federal poverty level may be considered low-income populations. The town is in the 68th percentile in the state for low-income population (EPA 2022b). As such, the town would be considered to contain low-income populations because it exceeds the 50th percentile threshold.

4.12.1. NO ACTION ALTERNATIVE

Under the no action alternative, small -scale wildfire mitigation, including fuels reduction work, may be implemented by Paradise, Butte County, and at-risk property owners, reducing the overall risk of wildfire spread; however, property owners would not be able to take advantage of cost-shared funding to implement Ignition-Resistant modifications to their homes. Small-scale fuels reduction work would be spread out spatially and temporally; therefore, implementation would likely not disproportionately impact environmental justice communities. However, low-income populations may experience additional hardship from lack of cost-shared funding. No hazardous burnt trees would be removed from private properties, including those of minority and low-income populations, that would impact their ability to recover and rebuild. Low-income households may be disproportionately impacted by the cost of paying for the removal of hazardous trees, or not be able to afford removing them and thus experience added difficulty in rebuilding damaged structures. Low-income households may be disproportionately more likely to move away, thus affecting the community.

Under this alternative, the risk of wildfire spread would remain high. In the event of a wildfire, the population within the town, including low-income populations, may experience adverse health impacts (such as those described in **Section 4.17**) or damage or loss of property and assets. Low-income populations could be disproportionately and adversely affected by a wildfire because of their limited resources to recover from losses. Therefore, minor to moderate adverse impacts may occur on low-income populations in the project vicinity, depending on the scale, intensity, and location of a wildfire.

4.12.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

No general consequences under all action alternatives are anticipated, see project-specific consequences below.

Project-Specific Consequences

Alternative 1

Alternative 1 would enhance code enforcement activities to manage fuel loads around standing structures (private, public, and commercial properties). The defensible space requirements enforced under Alternative 1 would be applied to the town as a whole and would not be disproportionately applied to the low-income populations. All residents in the town would be subject to creating defensible space at their residence or required to pay the resulting citations detailed in **Section 3.2.3** In addition, all residents would benefit from reduced future wildfire hazards.

Alternative 2

Under Alternative 2, cost-shared programs for ignition-resistant home improvements would have a beneficial effect on low-income populations by providing financial assistance. Ignition-resistant construction would result in temporary and localized impacts, such as noise and reduced air quality, which would impact those proximate to the work location, including low-income residents. However, these effects would not disproportionately impact low-income residents, as these short-term effects would affect all residents near project activities.

Alternative 3

Under Alternative 3, removal of hazardous fuels along public roadways (within town right-of-way), would result in temporary and localized impacts, such as noise and reduced air quality, which would impact those proximate to the work location, including low-income residents. However, these effects would not disproportionately impact low-income residents, as these short-term effects would affect all residents near project activities.

Alternative 4

Under Alternative 4, removal of hazardous burnt trees would result in temporary and localized impacts, such as noise and reduced air quality, which would impact those proximate to the work location, including low-income residents. However, these effects would not disproportionately impact low-income residents, as these short-term effects would affect all residents near project activities. In addition, the removal of hazardous burnt trees from private properties would allow the town's residents to economically recover and rebuild including low-income populations. Low-income population may especially benefit from hazardous burnt tree removal as they may not have the funds to remove these trees themselves. The benefits of reduced risk of wildfire spread would be applicable to the entire town, including low-income and minority populations.

4.13. Hazardous Materials

Hazardous materials are those substances defined by the Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act, and the Toxic Substances Control Act. The Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, which was further amended by the Hazardous and Solid Waste amendments, defines hazardous wastes. In general, both hazardous materials and waste include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or to the environment when released or otherwise improperly managed.

Hazardous materials may be encountered in the course of a project, or they may be generated by the project activities. To determine whether any hazardous waste facilities exist in the vicinity or upgradient of the proposed project area, or whether there is a known and documented environmental issue or concern that could affect the proposed project area, a search for Superfund sites, toxic release inventory sites, industrial water dischargers, hazardous facilities or sites, and multiactivity sites was conducted using EPA's NEPA Assist website (EPA 2022c). According to the

database, there are several hazardous materials dischargers or producers present within the town, including along major roadways and rights-of-way.

4.13.1. NO ACTION ALTERNATIVE

Under the no action alternative, existing conditions would not substantially change. Paradise, in tandem with the county, at-risk property owners, or local groups may implement small-scale fuels reduction work within the project area, which would pose a negligible threat of release of hazardous materials from equipment and potentially localized and negligible site contamination from leaks or spills. However, the risk of wildfire spread would not be effectively reduced under this alternative. In the event of a major wildfire, fire-retardant materials could be applied to burning areas. Fire retardants are generally considered to be nontoxic, but there may be risks to small mammals and other wildlife from concentrated exposures (Modovsky 2007). However, exposures would likely be short term because the application 'footprint' of these chemicals is limited in terms of foraging areas and species habitat for any individual animal, and the ingredients generally degrade in the environment (Modovsky 2007). Therefore, the potential for adverse effects is likely to be negligible. Wildfire damage in residential areas also directly release hazardous materials into the air, soil, and water as plastics burn and materials that are otherwise safely stored are damaged and released (CalRecycle 2020). Although the residential densities in Paradise are generally low because of previous wildfire damage, remaining or recently rebuilt structures would remain at risk. Wildfire could also directly impact hazardous materials sites, potentially releasing contaminants into the ground, water resources, or in the air. Therefore, the potential for a wildfire in the project area to produce hazardous materials from burning homes or release hazardous materials from regulated sites would be minor to major, depending on the scale and intensity of a wildfire.

4.13.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

In the long term, the action alternatives would reduce the risk of wildfire within the town. Reduced risk of wildfire would reduce the potential need for fire-retardant materials and the potential for hazardous material release into soil, air, and water from burning homes and hazardous material sites. Therefore, the action alternatives would have a minor, long-term benefit related to hazardous materials.

Project-Specific Consequences

Alternative 1

Alternative 1 would involve the use of vehicles to assess the town for compliance. Vehicle use would pose the threat of leaks and spills. However, the proposed code enforcement team would only include two inspectors, and vehicle use would be short-term. As such, there would be a negligible contamination threat from vehicle and equipment use in the short term under Alternative 1.

Alternatives 2 and 4

Ignition-resistant construction under Alternative 2 and hazardous burnt tree removal under Alternative 4 would include the use of mechanical equipment and vehicles, which would pose the threat of leaks and spills. The short-term duration of the use of equipment at any individual location and the use of equipment in good condition would reduce any potential effect to a negligible level. All equipment and project activities would adhere to local regulations to reduce the risk of hazardous leaks and spills. Any spills during implementation would be immediately contained and cleaned. Thus, there would be a negligible contamination threat from vehicle and equipment use in the short term.

Alternative 3

The use of mechanical equipment and vehicles during hazardous fuels reduction work under Alternative 3 post a threat of leaks and spills. As discussed under Alternatives 2 and 4, the short-term duration of the use of equipment at any individual location and the use of equipment in good condition would reduce any potential effect to a negligible level. All equipment and project activities would adhere to local regulations to reduce the risk of hazardous leaks and spills. Any spills during implementation would be immediately contained and cleaned. Thus, there would be a negligible contamination threat from vehicle and equipment use in the short term.

In addition, under Alternative 3, herbicides would be used to prevent weed growth along public roadways (within town right-of-way) on a biannual basis. Herbicides are considered hazardous materials; however, only herbicides in compliance with local environmental health regulations and permitting would be used and herbicides would be applied using methods that limit unnecessary exposure (i.e., backpack sprayers and small broadcast sprayers attached to utility terrain vehicles). Thus, there would be a negligible contamination threat from herbicide use in the short term.

4.14. Noise

Sounds that disrupt normal activities or otherwise diminish the quality of the environment are considered noise. Noise events that occur during the night (10 p.m. to 7 a.m.) are more annoying than those that occur during normal waking hours (7 a.m. to 10 p.m.). Assessment of noise impacts includes the proximity of the action alternatives to sensitive receptors, which are defined as an area of frequent human use that would benefit from a lowered noise level. Typical sensitive receptors include residences, schools, churches, hospitals, nursing homes, and libraries.

Typical noise events in the project area are presently associated with climatic conditions (e.g., wind, rain), light traffic noises from nearby roadways, and other intermittent residential conditions (e.g., lawnmowers, leaf blowers).

4.14.1. NO ACTION ALTERNATIVE

Under the no action alternative, small-scale fuels reduction work may be conducted by Paradise in tandem with the county, at-risk property owners, and local groups over time. The tools and equipment used for these activities would be similar to those already in use for general landscape

maintenance around residences, including chainsaws and small chippers. Therefore, there would be negligible change in existing noise levels that could affect sensitive receptors in the project area.

4.14.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

The action alternatives do not propose the installation of any noise-emitting sources nor any long-term operational activities. As such, no long-term noise impacts would occur under the action alternatives.

Project-Specific Consequences

Alternative 1

Under Alternative 1, code enforcement would include the use of vehicles to assess defensible space conditions around the town; however, a small number of vehicles would be used, and noise produced by vehicles would be indiscernible from existing roadway and traffic noise and reconstruction activities occurring in the town. Under Alternative 1, homeowners would implement defensible space around structures through enforcement and education actions. The effects would be similar to normal landscape maintenance currently present in the town and would likely be performed by hand with hand tools and chippers. Increases in noise levels under Alternative 1 would be minor and short-term.

Alternative 2

Alternative 2 would involve construction and vehicle use. Noise produced by daytime use of vehicles and construction equipment would be localized, temporary, and indiscernible from existing reconstruction activities occurring within the town. Construction may result in temporary noise impacts for homeowners living in the residences during construction; however, as a voluntary program, residents would be aware of the potential direct noise impacts related to construction. Increases in noise levels under Alternative 2 would be minor and short-term.

Alternatives 3 and 4

Hazardous fuels reduction along public roadways (within town right-of-way) under Alternative 3 and removal of hazardous burnt trees under Alternative 4 would generate noise through the operation of equipment, such as masticators, chippers, and chainsaws. The loudest equipment likely to be used would be chainsaws and woodchippers, which can produce noise levels up to 85 decibels (dB) and 88 dB, respectively, when perceived from approximately 50 feet away (Federal Highway Administration 2017). The implementation of Alternatives 3 and 4 would increase noise levels within the immediate vicinity of the work for the duration of the work. However, increases in noise levels would be minor and short term at any one location. In addition, all work would occur during daytime hours. Vehicle and equipment run times would be kept to a minimum.

4.15. Transportation

From the north, one major roadway (New Skyway) provides access into the town. Once in town, New Skyway dissipates into three roadways that provide the primary north–south access routes (Skyway, Clark Road, and Pentz Road). At the southern end of the town, Skyway is split into two roads (Skyway and Neal Road), resulting in four major roadways that provide access to the town from the south. These four major roadways are identified as emergency travel and evacuation routes in the event of wildfire (Town of Paradise 2020). East–west access is provided via five major roadways (Wagstaff Road, Billie Road, Elliot Road, Nunnely Road, and Pearson Road). Branching from major roadways are residential access roads. Most residential access roads are paved although some dirt roads and driveways are present. Residential access roads are often dead-end roads or cul-de-sacs, limiting access.

4.15.1. NO ACTION ALTERNATIVE

Under the no action alternative, small-scale hazardous fuels work may be implemented by the town in tandem with the county, at-risk property owners, or local groups over time. This limited activity would be spread out spatially and temporally; thus, transportation in the town would not be directly affected. However, the potential for a major wildfire to spread through the town would remain high. Wildfire may encroach upon roadways and wildfire smoke may inhibit the ability to see roadways clearly. Furthermore, with limited emergency vehicle and evacuation route access, the spread of wildfire could increase risks for residents and firefighters. Therefore, minor to moderate adverse impacts may occur on traffic and transportation in the town, depending on the scale, intensity, and location of a fire.

4.15.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

In the long term, the action alternatives would reduce the risk of wildfire spread, which would reduce potential impacts of wildfire smoke and damage to transportation infrastructure from a major wildfire. In addition, the action alternatives would reduce the risk of future wildfires overtaking the town's roads, providing for safer evacuation for residents and route access for emergency personnel. As such, the action alternatives would have a moderate, beneficial impact on traffic and transportation.

Project-Specific Consequences

Alternatives 1 and 2

Code enforcement crews implementing Alternative 1 and ignition-resistant construction crews implementing Alternative 2 would use existing roads and driveways to determine compliance with defensible space code or transport and stage equipment and materials on individual parcels. A small number of vehicles would be used, which would be dispersed spatially and temporally throughout the transportation network. No detours or road closures would be required. Therefore, Alternatives 1 and 2 would have no impact on traffic and transportation.

Alternatives 3

For hazardous fuels reduction along public roadways (within town rights-of-way) under Alternative 3, crews would access the project area from existing roads and driveways. Staging of construction equipment and vehicles would occur along roadsides and in driveways. Equipment for mowing and cutting of small trees along rights-of-way (Alternative 3) would operate from the road shoulder. The hazardous fuel reduction work under Alterative 3 would require a small number of vehicles for a short duration in any one location and crews would direct traffic around the equipment safety zone. Therefore, there would be negligible to minor, localized impacts on traffic in the short term under Alternative 3.

Alternative 4

Alternative 4 would collect felled logs along roadsides for loading onto haul trucks and removal. Heavy equipment may access some parcels from public roads to reach areas where hazardous burnt trees need to be cut. The hazardous burnt tree removal work under Alternative 4 would require a small number of vehicles for a short duration in any one location and crews would direct traffic around the equipment safety zone. As such, there would be negligible to minor, localized impacts on traffic in the short term.

4.16. Utilities

The town is provided electric power via main overhead power lines and gas services via underground pipes by PG&E. Water is provided by the Paradise Irrigation District via underground pipes although wells are also present. The town is the largest unsewered town in the State of California, relying on on-site septic systems and alternative gray-water systems.

4.16.1. NO ACTION ALTERNATIVE

Although some scattered fuels reduction work may be implemented by the town in tandem with the county, at-risk property owners, or local groups under the no action alternative, the risk of wildfire spread would remain high. Electrical services provided via overhead power lines would continue to be at risk of damage from wildfires. Water wells could be physically damaged by wildfires or experience microbial contamination because of pressure loss during a fire (Montana Department of Environmental Quality 2012). Ash, sediment, and debris from wildfires may contaminate uncovered wells or storage tanks. Intense heat from wildfires could adversely impact water system components on the surface and underground. If intense heat modifies the chemical properties of water system components, such as melting plastic water pipes, chemicals might leach into the water, causing contamination (Pitzer and Beeman 2019). In addition to chemicals leaching into the water system from affected system components, wildfires can result in changes to source-water chemistry that could alter drinking water treatment for municipal water suppliers (U.S. Geological Survey 2019). Damage to drinking water utilities from wildfires may include difficulty reaching the drinking water utility during or after the fire because of road closures, fire hazards, or debris in the road, as well as the water utility losing power as a result of the wildfire, long-term reduction in source water quality, short-term contamination of drinking water sources, need for additional water sampling, loss of

source water, and water demand in excess of water production (The Cadmus Group, Inc. 2013). Most of the functional components of a septic system are usually several feet belowground and therefore are typically resistant to fire damage. However, it is possible that firefighting activities, such as digging fire breaks, may damage septic systems (Montana Department of Environmental Quality 2012). Thus, impacts on private and public utilities could be minor to major, depending on the intensity and scale of a wildfire.

4.16.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

In the short term, the action alternatives would not directly adversely affect utilities. The action alternatives would not require additional demand on utilities or require disruptions in services. In the long term, the action alternatives would reduce the risk of damage to public and private utilities from wildfire spread. Ignition-resistant improvements under Alternative 2 would reduce the risk of structures catching fire and adversely impacting utility connections and service. Under Alternative 3, removal of hazardous fuels along roadways where power lines are present could provide protection to overhead power lines and reduce the potential for powerlines to spark a fire. Removal of hazardous burnt trees under Alternative 4 would not directly benefit utilities; however, it would facilitate landowners' ability to safely rebuild homes and reconnect utility services. Therefore, the action alternatives could have minor, long-term, beneficial effects on utilities and utility users.

Project-Specific Consequences

No project-specific consequences are anticipated.

4.17. Public Health and Safety

As described in Section 2, the town has a history of wildfires resulting in mandatory evacuation and loss of life. Wildfire smoke can exacerbate respiratory health issues, such as asthma and chronic obstructive pulmonary disease. Wildfire smoke may contribute to respiratory infections and cardiovascular concerns (Reid et al. 2016). The town has an extremely high wildfire risk and is located within a WUI area, where homes and forests intermingle. The threat of wildfire and potential losses are constantly increasing as human development and population increase and the WUI areas expand.

Emergency medical services (EMS) are provided by Butte County EMS, First Responder Emergency Medical Services Station 12, and Station 14. Fire and rescue services are provided by Paradise Fire and Rescue, Butte County, and the CAL FIRE. Paradise Fire and Rescue is an all-risk department, responding to fires, emergency medical services, hazardous materials, rescues, and public assists. In the event of an emergency, such as a wildfire or severe winter storm, employees and volunteers of the Paradise Emergency Operations Center are also activated to assist in emergency needs. Policing services are provided by the Paradise Police Department.

4.17.1. NO ACTION ALTERNATIVE

Under the no action alternative, small scale fuels reduction work would be implemented by the town in tandem with the county, at-risk property owners, or other local groups over time; however, current conditions would not substantively change, and the risk of wildfire spread would remain high. In the event of a wildfire, there is an increased risk to public health and safety and to the services established to protect public safety, such as firefighters. Wildfires can generate substantial amounts of particulate matter, which can affect the health of people breathing smoke-laden air. This is a particular concern for vulnerable populations, such as the young and elderly. Wildfires can generate substantial amounts of carbon monoxide, which can pose a health concern for frontline firefighters and emergency personnel. In addition, fires that are burning residences can release toxic materials into the air, soils, and water, posing health risks to populations both during the fire and later during cleanup and recovery (CalRecycle 2020).

Heavy rain conditions following wildfires can contribute to sediment and debris in nearby waterways, which can affect downstream water quality and damage structures, roads, and utilities critical to the safety and well-being of citizens. Under the no action alternative, there could be minor to major impacts on public health and safety depending on the scale and intensity of a wildfire.

4.17.2. ACTION ALTERNATIVES

General Consequences of the Action Alternatives

No general consequences under all action alternatives are anticipated, see project-specific consequences below.

Project-Specific Consequences

Alternative 1

Alternative 1 would not impact public health and safety in the short term, as no roadway detours or closures would occur that would impact emergency response times (Section 4.15). In the long term, code enforcement would increase the number of homes in compliance with defensible space codes, thereby reducing fuel loads and fire hazards, resulting in a minor, long-term, beneficial effect on public health and safety.

Alternatives 2, 3, and 4

Alternatives 2, 3, and 4 would require staging of vehicles and equipment along roadsides and in driveways, which could result in temporary traffic disruptions. Traffic diversions would be temporary and minimal because a small number of crews would be used to perform work. Crews would direct traffic around staged equipment. Therefore, there would be a negligible impact on public health and safety from staging and use of vehicles and equipment. Alternatives 2, 3, and 4 would help to reduce the spread of wildfire in the town. This would create a safer environment for firefighters and allow them to more easily control the spread of a wildfire. These activities would not prevent wildfires but could contribute to containment, which would ultimately reduce the risks, including public health

risks related to air quality and climate change, for people living in the town. In addition, when wildfires are controlled more quickly, a smaller area may be burned, and less sediment and debris may be transported downstream during future precipitation events that could potentially affect water quality. Alternatives 2, 3, and 4 could reduce the probability that emergency services would be focused on firefighting and would allow emergency responders to remain available to respond to other emergencies throughout the town. Therefore, Alternatives 2, 3, and 4 would have a moderate, long-term, beneficial effect on public health and safety.

4.18. Summary of Effects and Mitigation

Table 4-6 provides a summary of the potential environmental effects from implementing the action alternatives, any required agency coordination efforts or permits, and any applicable proposed mitigation or BMPs.

Table 4-6. Summary of Impacts and Mitigation

Resource	Potential Impacts	Agency Coordination or Permits	Mitigation/BMPs
Soils and Topography	Negligible short-term impact on soils, and minor long-term benefit on soils by reducing the risk of wildfire spread No effect on topography.	N/A	• During the fire season, equipment would be limited to chainsaws and hand tools *(Alternative 3)*. • Vegetation larger than 6 inches DBH would be retained (*Alternative 3*). • All equipment would be rubber-tired to minimize ground disturbance *(Alternatives 3 and 4)*. • Root balls would not be disturbed during project implementation *(Alternative 4)*.
Visual Quality and Aesthetics	Negligible to minor short-term adverse effects; minor long-term beneficial effects from reducing the risk of wildfire spread	N/A	• Vegetation larger than 6 inches DBH would be retained during hazardous fuel removal activities *(Alternative 3)*.
Air Quality and Climate	Minor short-term impacts from vehicle and equipment use and activities contributing to the release of fugitive dust; minor long-term beneficial effect by reducing the risk of wildfire spread	N/A	• All equipment would be rubber-tired to minimize ground disturbance *(Alternatives 3 and 4)*. • Cut vegetation may be burned using an air curtain burner that reduces particulate matter released *(Alternative 3)*. • Contractors would comply with state and federal guidance regarding vehicle and equipment idling times *(All action alternatives)*.

Resource	Potential Impacts	Agency Coordination or Permits	Mitigation/BMPs
Surface Waters and Water Quality	Negligible short-term impact; minor long-term beneficial effect by reducing the risk of wildfire spread and associated vegetation loss and sedimentation effects	N/A	• Herbicides use would comply with state and federal regulations (*Alternative 3)*. • Vegetation larger than 6 inches DBH would be retained during hazardous fuel removal activities *(Alternative 3)*. • Rubber-tired vehicles and heavy equipment would be used to minimize soil disturbance (*Alternatives 3 and 4*). • Minimum 25-foot to 150-foot buffer placed around water resources (*Alternatives 3 and 4*). • Project-specific SWPPP plan would be prepared (*Alternatives 3 and 4*). • Temporary erosion and sediment controls, including sediment fencing and straw waddles, would be implemented during hazardous fuels reduction activities (*Alternatives 3 and 4*). • Root balls would not be disturbed during project implementation (*Alternative 4*).
Wetlands	Negligible short-term impacts on wetlands from implementation; minor long-term beneficial effect by reducing the risk of wildfire spread and associated vegetation loss	N/A	• Minimum 25-foot to 150-foot buffer placed around water resources as recommended by NMFS (*Alternatives 3 and 4*). • BMPs such as silt fences and straw waddles would be installed to reduce sedimentation and pollution (*Alternatives 3 and 4*).
Floodplains	No effect; however, there would be minor long-term beneficial effects on floodplains in surrounding areas from the reduced risk of wildfire spread	N/A	N/A
Vegetation	Minor short-term beneficial effect on existing vegetation communities; minor short-term impact from invasive species spread from ground disturbance; minor long-term beneficial effects by reducing the risk of wildfire spread and vegetation loss	N/A	• Beneficial vegetation greater than 6 inches DBH would be retained *(Alternative 3)*. • Herbicide treatments would be implemented twice a year to prevent weed growth (*Alternative 3)*.

Resource	Potential Impacts	Agency Coordination or Permits	Mitigation/BMPs
Fish and Wildlife	Minor short-term adverse impact on wildlife and migratory birds from vegetation removal; negligible short-term impact on eagles; no short-term effect on fish species Minor long-term beneficial effect by reducing the risk of wildfire spread and vegetation loss	USFWS	• Minimum 25-foot to 150-foot buffer placed around aquatic habitats (*Alternatives 3 and 4*). • BMPs such as silt fences and straw waddles would be installed as warranted to protect water quality (*Alternatives 3 and 4*). • If vegetation removal during the nesting season (March 15 to July 31) cannot be avoided, the town would be responsible for determining if active nests are present prior to clearing and obtaining and complying with any necessary permits from the USFWS (*Alternatives 3 and 4*).
Threatened and Endangered Species	It was determined in the Biological Assessment and addendum that the project may affect, but is not likely to adversely affect, California red-legged frog, foothill yellow-legged frog, and valley elderberry longhorn beetle. Therefore, the project would have negligible short-term impacts on listed and proposed species. Minor long-term beneficial effect by reducing the risk of wildfire spread and vegetation loss.	USFWS	• Minimum 100-foot to 150-foot buffer placed around non-fish aquatic species habitats (*Alternatives 3 and 4*). • BMPs such as silt fences and straw waddles would be installed as warranted to protect water quality (*Alternatives 3 and 4*). • General and species-specific avoidance and minimization measures that resulted from consultation with USFWS would be implemented (concurrence received March 7, 2023) (*Alternatives 3 and 4*).
Cultural Resources	No Adverse Effect on Historic Properties	SHPO	• FEMA will implement measures contained in the Programmatic Agreement to resolve adverse effects that may be identified on a parcel-by-parcel basis (*Alternatives 2, 3, and 4*). • In the event that any archaeological resources are discovered during project implementation, work would immediately cease, the area would be secured, and the town would notify the SHPO and FEMA for further evaluation (*Alternatives 2, 3, and 4*). • Project work would be conducted with rubber-tired equipment, and no tracked vehicles would be used (*Alternative 3*).

Resource	Potential Impacts	Agency Coordination or Permits	Mitigation/BMPs
Environmental Justice	No disproportionately high and adverse impacts on minority and low-income populations from Alternatives 1 and 3; Beneficial effect from implementation of Alternatives 2 and 4	N/A	N/A
Hazardous Materials	Negligible short-term contamination threat from vehicle and equipment use; minor long-term benefit on hazardous materials	N/A	• Equipment would be kept in good condition (*All action alternatives*). • Any spills or leaks from equipment would be contained and cleaned up immediately (*All action alternatives*). • All equipment and project activities would adhere to local regulations to reduce the risk of hazardous leaks and spills (*All action alternatives*). • Only herbicides in compliance with local environmental health regulations and permitting would be used and herbicides would be applied using methods to limit unnecessary exposure (*Alternative 3*).
Noise	Minor short-term impacts from increased noise in the immediate vicinity of the work; no long-term noise impacts	N/A	• Noise-producing equipment use would occur during less-sensitive, daytime hours (7 a.m. to 10 p.m.) (*All action alternatives*). • Vehicle and equipment run times would be kept to a minimum (*All action alternatives*).
Transportation	Negligible to minor short-term localized impact from vehicle staging on roadsides. Moderate long-term beneficial effect by reducing the risk of wildfire spread.	N/A	• Crews would direct traffic around the equipment safety zone (*Alternatives 3 and 4*).
Utilities	No short-term impact; minor long-term beneficial effects by reducing the risk of wildfire spread	N/A	N/A
Public Health and Safety	Negligible short-term impact; moderate long-term beneficial effects by reducing the risk of wildfire spread	N/A	N/A

SECTION 5. Cumulative Effects

This section addresses the potential cumulative effects associated with the implementation of the action alternatives. As defined by the Code of Federal Regulations, cumulative effects are effects on the environment that result from the incremental effects of the action alternatives when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes those other actions (40 CFR § 1508.1, 2022). CEQ's regulations for implementing NEPA require an assessment of cumulative effects during the decision-making process for federal projects. The Code also states that cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

As described in Section 3.2.6, PG&E removed approximately 95,000 hazardous trees impacting their power lines, and another estimated 104,700 hazardous trees (Categories 1 through 3 trees) are being removed under Camp Fire Hazard Tree Removal Program (established by the State and FEMA). In addition, town residents could elect to participate in the Private Hazard Tree Removal Program, in which the property owner identifies and removes hazardous trees on their property at their own cost. All property owners in the town were required to enroll in either the Federal/State or Private Hazard Tree Removal Program.

The town participates in the Butte County Fire Safe Council, which provides wildland fire mitigation and recovery services to communities in Butte County. The town is also a participant in the 2015 Butte County Community Wildfire Protection Plan, which outlines pre-fire strategies and tactics to be implemented in cooperation with the fire agencies in Butte County, the Butte County Fire Safe Council, local community groups, and landowners.

The town, through federal- and state-funded programs, offers the Owner-Occupied Housing Rehabilitation and Reconstruction Program, which provides deferred, low-interest loans to low- and moderate-income households for health and safety repairs. Eligible repairs include reconstruction, roof repair or replacement, electrical, and plumbing. Homes lost in the Camp Fire are eligible for this program (Town of Paradise 2022).

There is the potential for these other wildfire mitigation and reconstruction efforts to combine potential effects with the action alternatives with respect to effects on soils, visual quality and aesthetics, air quality and climate, surface waters and water quality, wetlands, vegetation, fish and wildlife, hazardous materials, noise, and transportation. However, it is unlikely that there would be significant cumulative impacts because, in most cases, there would be temporal and spatial separation between activities. These activities would result in long-term cumulative beneficial effects and would complement the action alternatives by reducing the risk of wildfire spread in the town and vicinity.

SECTION 6. Agency Coordination, Public Involvement, and Permits

This section provides a summary of the agency coordination efforts and public involvement process for the proposed Town of Paradise Wildfire Mitigation Projects. In addition, an overview of the permits that would be required under the action alternatives is included in Section 6.3.

6.1. Agency Coordination

On November 19, 2021, FEMA initiated consultation with seven Tribes about the action alternatives to solicit comments and request any additional information about cultural resources that may be impacted by the action alternatives. These included the Berry Creek Rancheria of Maidu Indians, Estom Yumeka Maidu Tribe of the Enterprise Rancheria, Greenville Rancheria of Maidu Indians, Mechoopda Indian Tribe of Chico Rancheria, Mooretown Rancheria of Maidu Indians, United Auburn Indian Community of the Auburn Rancheria, and Washoe Tribe of Nevada and California. The Tribal Historic Preservation Officer (THPO) of the Estom Yumeka Maidu Tribe of the Enterprise Rancheria responded on November 19, 2021, to request further information about the proposed programs. The THPO of the Mechoopda Indian Tribe of Chico Rancheria responded on November 29, 2021, to note that the project area lies within the Tribe's ancestral lands and that there are known cultural resources within or near the APE. The likelihood of encountering inadvertent discoveries is high and the Tribe requested that a Native American monitor from the Mechoopda Indian Tribe of Chico Rancheria be present during any earth moving activities. The United Auburn Indian Community of the Auburn Rancheria replied on December 6, 2021, noting that the project area is outside of the Tribe's traditional territory. The Berry Creek Rancheria of Maidu Indians responded on August 9, 2022, requesting to be updated on all ground disturbing activities. A tribal monitoring plan has been prepared and will be included as an addendum to the secondary programmatic agreement.

On February 6, 2023, FEMA submitted a Biological Assessment to United States Fish and Wildlife Service (USFWS) and requested concurrence with the 'may affect but not likely to adversely affect' determination for California red-legged frog, Foothill yellow-legged frog, and Valley elderberry longhorn beetle. On March 7, 2023, the USFWS concurred with the finding.

Appendix B provides a copy of agency and tribal correspondence.

6.2. Public Participation

In accordance with FEMA's NEPA procedures, FEMA is releasing this draft EA to the public and resource agencies for a 30-day public review and comment period. Comments on this draft EA will be incorporated into the final EA, as appropriate. This draft EA reflects the evaluation and assessment of the federal government, the decision-maker for the federal action; however, FEMA will take into consideration any substantive comments received during the public review period to inform the final decision regarding grant approval and project implementation. If no substantive comments are

received from the public and/or agency reviewers, this draft EA will be assumed to be final and a FONSI will be issued by FEMA.

A public scoping notice and fact sheet about the project action was published on FEMA's website (https://www.fema.gov/disaster-federal-register-notice/dr-4407-ca-public-notice-008) and in the local newspaper on February 2, 2022, to notify and provide the public with an opportunity to comment on the action alternatives, potential alternatives, and preliminary identification of environmental issues. The public comment period on the public notice closed on March 4, 2022. FEMA and the town did not receive any comments.

The draft EA will be available to the public for review on FEMA's website at: [INSERT HYPERLINK]. The town will make the draft EA available on its website at: [INSERT HYPERLINK]. Hard copies of the draft EA will be made available at [INSERT LOCATION]. The comment period for the draft EA will start when the public notice of EA availability is published and will extend for 30 days. Comments on the draft EA may be submitted to fema-rix-ehp-documents@fema.dhs.gov (include 'Town of Paradise' in the subject line). Comments also may be submitted via mail to:

Lisa Holm
Acting Regional Environmental Officer
FEMA Region 9
1111 Broadway, Suite 1200
Oakland, California 94607-4052

6.3. Permits

The Town of Paradise will be responsible for obtaining any necessary local, state, or federal permits needed to conduct the proposed work.

SECTION 7. List of Preparers

The following is a list of preparers who contributed to the development of the Town of Paradise Wildfire Mitigation Projects draft EA for FEMA. The individuals listed below had principal roles in the preparation of this document. Many others contributed, including senior managers, administrative support personnel, and technical staff, and their efforts in developing this EA are appreciated.

CDM Smith

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Federal Emergency Management Agency

Reviewers	Role in Preparation
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Cohen, David	NHPA/SHPO Consultation, Technical Review and Approval
Mullner, Scott	ESA/BA

This document was prepared by CDM Smith under Contract No.: 70FA6020D00000003, Task Order: 70FA6022F00000001.

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Appendix A

General and Species-Specific Avoidance and Minimization Measures

General Avoidance and Minimization Measures

The following general avoidance and minimization measures (GEN AMM) and AMMs specific to the listed species would be implemented under the project.

General Avoidance and Minimization Measures

GEN AMMs provided in the San Francisco Bay-Delta Fish and Wildlife Office (SFWO) Programmatic Biological Opinion (PBO) (USFWS 2019), as modified, would be implemented as appropriate. Where noted, these AMMs have been modified to improve clarity and to eliminate elements that are not applicable to this project. The GEN AMMs are numbered according to the system in the SFWO PBO and may not be sequential.

GEN AMM-1 Erosion and Sedimentation Prevention Measures (modified) – Ground disturbance from project activities is expected to be minimal; however, because many project areas are near aquatic features, the Subapplicant will prepare an Erosion Control Plan to detail the required erosion and sedimentation prevention measures. As part of this plan, the Subapplicant will ensure that sediment-control devices are installed and maintained correctly. For example, sediment will be removed from engineering controls once the sediment has reached one-third of the exposed height of the control. The devices will be inspected frequently (i.e., daily or weekly, as necessary) to ensure that they are functioning properly; controls will be immediately repaired or replaced, or additional controls will be installed as necessary. Sediment that is captured in these controls may be disposed of on-site in an appropriate, safe, approved area or off-site at an approved disposal site.

Any areas of soil disturbance, including temporarily disturbed areas, will be seeded with a regionally appropriate erosion control seed mixture. On soil slopes with an angle greater than 30 percent, erosion control blankets will be installed, or a suitable and approved binding agent will be applied. Runoff will be diverted away from steep or denuded slopes.

Where habitat for covered species is identified within or adjacent to the project footprint, all disturbed soils at the site will undergo erosion control treatment before the rainy season starts and after construction is terminated. Treatment may include temporary seeding and sterile straw mulch.

As noted in Section 2.4, any additional town BMPs for erosion and sediment control will be implemented as applicable.

GEN AMM-3 Dust Control Measures – To reduce dust, all traffic associated with the Subapplicant's construction activities will be restricted to a speed limit of 15 miles per hour (mph) when traveling off of highways or town roads.

Stockpiles of material that are susceptible to windblown dispersal will be covered with plastic sheeting or other suitable material to prevent movement of the material.

During construction, water or other binding materials will be applied to disturbed ground that may become windborne. If binding agents are used, all manufacturers' recommendations for use will be followed.

GEN AMM-4 Spill Control Planning – Subapplicant will prepare a Spill Prevention and Pollution Control Plan to address the storage of hazardous materials and emergency cleanup of any hazardous material that will be available on-site, if applicable. The plan will incorporate hazardous waste, stormwater, and other emergency planning requirements.

GEN AMM-5 Spill Prevention and Pollution Control Measures (modified) – Subapplicant will exercise every reasonable precaution to protect federally listed species and their habitats from pollution caused by fuels, oils, lubricants, or other harmful materials. Project-related pollutants will be collected and transported to an authorized disposal area, as appropriate, per all federal, state, and local laws and regulations.

The Subapplicant will store all hazardous materials in properly designated containers in a storage area with an impermeable membrane between the ground and the hazardous materials. The storage area will be encircled by a berm to prevent the discharge of pollutants to groundwater or runoff into the habitats of covered species. A plan for the emergency cleanup of any hazardous material will be available on-site, and adequate materials for spill cleanup will be maintained on-site.

GEN AMM-6 Equipment Inspection and Maintenance – Well-maintained equipment will be used to perform the work and, except in the case of a failure or breakdown, equipment maintenance will be performed off-site. Equipment will be inspected daily by the operator for leaks or spills. If leaks or spills are encountered, the source of the leak will be identified, leaked material will be cleaned up, and the cleaning materials will be collected and properly disposed. Fueling will be conducted in accordance with the procedures to be developed in the Spill Prevention and Pollution Control Plan.

Vehicles and equipment that are used during the course of a project will be fueled and serviced in a "safe" area (i.e., outside of sensitive habitats) in a manner that will not affect covered species or their habitats. Spills, leaks, and other problems of a similar nature will be resolved immediately to prevent unnecessary effects on covered species and their habitats. A plan for the emergency cleanup of any spills (fuel or other material) will be available on-site, and adequate materials for spill cleanup will be maintained on-site.

GEN AMM-7 Fueling Activities (modified) – AMMs will be applied to protect covered species and their habitats from pollution caused by fuels, oils, lubricants, and other harmful materials. Vehicles and equipment that are used during project implementation will be fueled and serviced in a manner that will not affect covered species or their habitats. Machinery and equipment used during work will be serviced, fueled, and maintained on uplands to prevent contamination of surface waters. Fueling equipment and vehicles will be kept more than 200 feet away from waters of the United States.

GEN AMM-9 Materials Storage and Disposal (modified) – All hazardous materials will be stored in upland areas in storage trailers and/or shipping containers designed to provide adequate

containment. Short-term laydown of hazardous materials for immediate use will be permitted, provided the same containment precautions are taken as described for hazardous materials storage. All construction materials, wastes, debris, sediment, rubbish, trash, and fencing will be removed from the site when project construction is complete; it all will be transported to an authorized disposal area, as appropriate, in compliance with applicable federal, state, and local laws and regulations. No disposal of construction materials or debris will occur in a floodplain. Construction materials or debris will not be stored in a floodplain during flood season.

GEN AMM-10 Fire Prevention – With the exception of vegetation-clearing equipment, no vehicles or construction equipment will be operated in areas of tall, dry vegetation.

The Subapplicant will develop and implement a fire prevention and suppression plan for all maintenance and repair activities that require welding or that otherwise pose a risk for starting a wildfire.

GEN AMM-11 Waste Management (modified) – Work area will be kept free of loose trash. All food waste will be removed from the work areas on a daily basis. All wastes, debris, sediment, rubbish, vegetation, trash, and fencing will be removed from the site once the project is completed; it will all be transported to an authorized disposal area, as appropriate, per all federal, state, and local laws and regulations.

GEN AMM-13 Work Area Designation to Minimize Disturbance (modified) – Subapplicant will reduce (to the maximum extent practicable) the amount of disturbance at a site (to the absolute minimum) necessary to accomplish the project.

Project planning must consider not only the effects of the action itself but also ancillary activities associated with the actions, such as equipment staging and refueling areas, topsoil or spoils stockpiling areas, material storage areas, disposal sites, routes of ingress and egress to the project site, and all other related activities necessary to complete the project.

GEN AMM-14 Access Routes and Staging Areas – When working on stream banks or floodplains, disturbance to existing grades and vegetation will be limited to the actual site of the project and necessary access routes. Placement of all roads, staging areas, and other facilities will avoid and limit disturbance to sensitive habitats (e.g., stream banks, stream channel, and riparian habitat) as much as possible. When possible, existing ingress or egress points will be used and/or work will be performed from the top of the stream banks. After completion of the work, the contours of the stream bed, vegetation, and stream flows will be returned to their preconstruction condition or better.

All staging and material storage areas, including the locations where equipment and vehicles are parked overnight, will be placed outside of the flood zone of a watercourse, above areas of tidal inundation, away from riparian habitat or wetland habitat, and away from any other sensitive habitats. When possible, staging and access areas will be situated in areas that are previously

disturbed, such as developed areas, paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation.

GEN AMM-15 Environmental Awareness Training – All construction personnel will be given environmental awareness training by the project's environmental inspector or biological monitor before the start of construction. The training will familiarize all construction personnel with the covered species that may occur on-site, their habitats, general provisions and protections afforded by the ESA, measures to be implemented to protect these species, and the project boundaries. This training will be provided within 3 days of the arrival of any new worker.

As part of the environmental awareness training, construction personnel will be notified that dogs or any other pets under control of construction personnel will not be allowed within the construction area, and that firearms will not be permitted in the construction area, unless carried by authorized security personnel or law enforcement.

GEN AMM-16 Biological Monitor – If a project involves activities that may result in take of a covered species, as defined by the ESA, a USFWS-approved biologist will be present on-site for all construction activities that occur within 100 feet of habitat for those species. If a USFWS-approved biologist is needed, the Subapplicant will submit the biologist's qualifications to the Service for approval 30 days prior to project construction. The USFWS-approved biologist will ensure that all applicable AMMs in the PBO are implemented during project construction. The USFWS-approved biologist will also ensure that all vehicles entering the site are free of debris that may harbor organisms that could be introduced to the site, such as vegetation or mud from other aquatic areas. The USFWS-approved biologist will also ensure that turbidity, sedimentation, and the release of materials such as dust or construction runoff are controlled, and that spill control measures are enacted properly.

The USFWS-approved biologist will oversee construction activities to ensure that no covered species and/or their habitats are adversely affected. The USFWS-approved biologist will have the authority to stop any work activities that may result in potential adverse effects to covered species and/or their habitats.

Approval requests from the Subapplicant for USFWS-approved biologists must include, at a minimum:

a. Relevant education

b. Relevant training concerning the listed species for which approval is requested, including species identification, survey techniques, handling individuals of different age classes, and handling of different life stages by a permitted biologist or recognized species expert authorized by the Service for such activities

c. Summary of field experience conducting requested activities (to include project/research information)

d. Summary of biological opinions under which they were authorized to work with the requested species and at what level (such as construction monitoring versus handling), including the names and qualifications of persons under which the work was supervised as well as the amount of work experience on the actual project

e. List of Federal Recovery Permits [10(a)1(A)] held or under which they are authorized to work with the species requested (to include the permit number, authorized activities, and name of permit holder)

f. Any relevant professional references with contact information

GEN AMM-17 Daily Work Hours (modified) – Construction activities that may affect suitable habitat for covered species will be limited to daylight hours during weekdays, leaving the nighttime and weekend periods for the species.

GEN AMM-18 Entrapment Prevention (modified) – Equipment and materials that have the potential to entangle or entrap wildlife will be properly contained so that wildlife cannot interact with the materials.

If a covered species is identified on-site, crews will immediately stop work within 50 feet of the individual and inform the construction supervisor and the Service-approved biologist. Work will not continue within 50 feet of the individual until it has traveled off the project site of its own volition. For covered species, refer to the species-specific Conservation Measures section of the PBO.

California Red-Legged Frog and California Tiger Salamander – Specific Avoidance and Minimization Measures

The following AMMs specific to California red-legged frog (CRLF) will be implemented as provided in the USFWS PBO issued by the SFWO (USFWS 2019).

CRLF 1. Biological Monitor – SFWO-approved biologist(s) will be on-site during all activities that may result in encounters with CRLFs.

CRLF 3. Rain Event Limitation – To the maximum extent practicable, no construction activities will occur during rain events or within 24 hours following a rain event. Prior to construction activities resuming, a SFWO-approved biologist will inspect the action area (AA) and all equipment/materials for the presence of CRLF. Construction may continue 24 hours after the rain ceases if no precipitation is forecasted within the upcoming 24 hours. If rain exceeds 0.5 inches during a 24-hour period, work will cease until no further rain is forecasted. The Service may approve modifications to this timing on a case-by-case basis.

CRLF 4. Pre-construction Survey – Not more than 24 hours prior to the date of initial ground disturbance and vegetation clearing, a SFWO-approved biologist—with experience in the identification of all life stages of the CRLF and designated critical habitat—will conduct a preconstruction survey at the project site. The survey will consist of walking the project limits and

observing within the project site to determine possible presence of the species. The SFWO-approved biologist will investigate all areas that could be used by CRLF for feeding, breeding, sheltering, movement, and other essential behaviors, such as small woody debris, refuse, and burrows entries.

CRLF 5. Daily Clearance Surveys – SFWO-approved biologist will conduct clearance surveys at the beginning of each day and regularly throughout the workday when construction activities are occurring that may result in encounters with CRLF.

CRLF 9. Encounters with Species – Each encounter with a CRLF will be treated on a case-by-case basis. If any life stage of the CRLF is found, the following will apply:

- If CRLF are detected in the AA, work activities within 50 feet of the individual that may result in the harm, injury, or death to the animal will cease immediately and the on-site project manager and SFWO-approved biologist will be notified. Based on the professional judgement of the SFWO-approved biologist, if project activities can be conducted without harming or injuring the CRLF, it may be left at the location of discovery and monitored by the SFWO-approved biologist. All project personnel will be notified of the finding and at no time will work occur within 50 feet of a CRLF without a SFWO-approved biologist present.

- Contact with the individual frog will be avoided and it will be allowed to move out of the hazardous situation of its own volition.

CRLF 11. Environmental Awareness Training – Prior to the start of construction, a SFWO-approved biologist—with experience in the ecology of the CRLF and the identification of all their life stages—will conduct a training program for all construction personnel, including contractors and subcontractors. Interpretation for non-English-speaking workers will be provided. All construction personnel will be provided a fact sheet conveying this information. The same instruction will be provided to any new workers before they are authorized to perform project work. The training will include, at a minimum:

- Habitat within the AA

- Explanation of the species status and protection under state and federal laws

- AMMs to be implemented to avoid take of this species

- Communication and work stoppage procedures in case a listed species is observed within the AA

- Explanation of the importance of the environmentally sensitive areas

CRLF 12. Disease Prevention and Decontamination Procedures – To ensure that diseases are not conveyed between work areas by the SFWO-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times.

CRLF 16. Accidental Spills, SWPPP, Erosion Control, and BMPs (modified) – Prior to the onset of work, a plan will be in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and instructed in the appropriate measures to implement if a spill occurs. Stormwater pollution prevention plans (SWPPP) and erosion control BMPs will be developed and applied to minimize any wind- or water-related erosion. These provisions will be included in construction contracts for measures to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges. At a minimum, protective measures will include:

- No discharge of pollutants from vehicle and equipment cleaning is allowed into any storm drains or watercourses.
- Vehicle and equipment fueling and maintenance operations must be conducted at least 200 feet away from aquatic or riparian habitats and not in a location where a spill may drain directly toward aquatic habitat, except at established commercial gas stations or at an established vehicle maintenance facility. The monitor will implement the spill response plan to ensure contamination of aquatic or riparian habitat does not occur during such operations.
- Spill containment kits will be maintained on-site at all times during construction operations and/or staging or fueling of equipment.
- Dust control will be implemented and may include the use of water trucks and nontoxic tackifiers (binding agents) to control dust in excavation and fill areas, rocking temporary access road entrances and exits, and covering of temporary stockpiles when weather conditions require.

CRLF 17. Site Restrictions (modified) – Following site restrictions will be implemented to avoid or minimize effects on the listed species and habitats:

- Speed limit of 15 mph in the project footprint in unpaved areas will be enforced to reduce dust and excessive soil disturbance.
- Construction and ground disturbance will occur only during daytime hours and will cease no less than 30 minutes before sunset and may not begin again earlier than 30 minutes after sunrise.
- Except when necessary for driver or pedestrian safety, to the maximum extent practicable, artificial lighting at a project site will be prohibited during the hours of darkness.
- Routes and boundaries of roadwork will be clearly marked prior to initiating construction or grading.
- All food and food-related trash items will be enclosed in sealed trash containers and properly disposed of off-site.

- No pets will be allowed within work areas during construction.

CRLF 19. Limitation on Insecticide/Herbicide Use (modified) – Insecticides or herbicides will not be applied at the project site where there is the potential for these chemical agents to enter creeks, streams, or waterbodies that contain habitat for the California red-legged frog. Herbicides will not be applied to uplands between October 16 to April 30.

Valley Elderberry Longhorn Beetle – Specific Avoidance and Minimization Measures

The following AMMs specific to valley elderberry longhorn beetle (VELB) will be implemented per the USFWS PBO issued by the SFWO (USFWS 2019) and the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* prepared by the SFWO in 2017 (USFWS 2017).

VELB 1. Fencing – All areas to be avoided during construction activities because of the presence of elderberry shrubs (*Sambucus* sp.), as identified by a SFWO-approved biologist, will be fenced and/or flagged as close to construction limits as feasible.

VELB 2. Avoidance Area – Activities that may damage or kill an elderberry shrub may need an avoidance area of at least 20 feet from the drip-line, depending on the type of activity.

VELB 3. Work Education – SFWO-approved biologist will provide training for all contractors, work crews, and any on-site personnel on the status of the VELB, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance.

VELB 4. Biological Monitor – SFWO-approved biologist will monitor the work area at project-appropriate intervals to ensure that all AMMs are implemented. The amount and duration of monitoring will depend upon the project specifics, and the contractor will discuss it with the SFWO-approved biologist.

VELB 5. Seasonal Avoidance – As much as feasible, all activities that could occur within 50 meters (165 feet) of an elderberry shrub will be conducted between August and February, outside of the flight season of the VELB, which occurs from March to July, coinciding with the bloom period of the elderberry plant.

VELB 6. Trimming – Trimming may remove or destroy VELB eggs or larvae and may reduce the health and vigor of the elderberry shrub. To avoid and minimize adverse effects on VELB when trimming, trimming will occur between November and February and will avoid the removal of any branches or stems that are $\geq$1 inch in diameter. Measures to address regular or large-scale maintenance (trimming) will be established in consultation with the SFWO.

VELB-7 Limitations on Chemical Use – Herbicides will not be used within the drip-line of the shrub. Insecticides will not be used within 98 feet of an elderberry shrub. All chemicals will be applied using a backpack sprayer or similar direct application method.

VELB 8. Mowing – Mechanical weed removal within the drip-line of the shrub will be limited to the season when adults are not active (August – February) and will avoid damaging the elderberry.

VELB-11. Impacts to Individual Shrubs – In certain instances, impacts to elderberry shrubs but not the surrounding habitat may occur. Trimming elderberry shrubs may result in injury or death of eggs, larva, or adults, depending upon the timing and extent of the trimming. Since the larva feed on the elderberry pith while they are developing, any trimming that may affect the health of the plant and cause the loss of stems may kill any larva in those stems. No adverse impacts to the VELB will occur if trimming does not remove stems/branches that are ≥1 inch in diameter and is conducted between November and February. Trimming that occurs outside of this window or removes branches ≥1 inch in diameter may result in adverse effects to VELB. To assess the risk of take from trimming activities, USFWS recommends the following be evaluated:

a. Conduct an exit hole survey on the plant

b. Evaluate the surrounding habitat (riparian vs. non-riparian)

c. Evaluate the potential suitability of the plant to provide VELB habitat

   i. Riparian plants are much more likely to be occupied or colonized by VELB

   ii. Plants in non-riparian locations will be evaluated using the criteria described in Section 4 of the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2017)

Foothill Yellow-Legged Frog – Specific Avoidance and Minimization Measures

The following AMMs specific to Foothill Yellow-Legged Frog (FYLF) will be implemented as provided. These AMMs have been modified from species-specific AMMs for the California red-legged frog included in the SFWO PBO to reflect species-specific considerations (USFWS 2019).

FYLF 1. Biological Monitor – SFWO-approved biologist(s) will be on-site during all activities that may result in encounters with FYLFs.

FYLF 2. High-Water Limitation – To the maximum extent practicable, no construction activities will occur during high-water events or within 24 hours following a high-water event to avoid times when FYLFs are likely to move away from waterways to seek refuge from peak flows. Prior to construction activities resuming, a SFWO-approved biologist will inspect the AA and all equipment/materials for the presence of FYLF. Construction may continue 24 hours after high-water conditions cease. USFWS may approve modifications to this timing on a case-by-case basis.

FYLF 3. Preconstruction Survey – Not more than 24 hours prior to the date of initial ground disturbance and vegetation clearing, a SFWO-approved biologist—with experience in the identification of all life stages of the FYLF—will conduct a preconstruction survey at the project site. The survey will consist of walking the project limits and observing within the project site to determine

possible presence of the species. The SFWO-approved biologist will investigate all areas that could be used by FYLF for feeding, breeding, sheltering, movement, and other essential behaviors, such as small woody debris, refuse, and leaf litter.

FYLF 4. Daily Clearance Surveys – SFWO-approved biologist will conduct clearance surveys at the beginning of each day and regularly throughout the workday when construction activities are occurring that may result in encounters with FYLFs.

FYLF 5. Riparian Vegetation Removal – To the maximum extent practicable, vegetation removal in streamside riparian areas will retain canopy cover of at least 20 percent to maintain conditions preferred by FYLF.

FYLF 6. Encounters with Species – Each encounter with a FYLF will be treated on a case-by-case basis. If any life stage of the FYLF is found, the following will apply:

- If FYLF are detected in the AA, work activities within 50 feet of the individual that may result in the harm, injury, or death to the animal will cease immediately and the on-site project manager and SFWO-approved biologist will be notified. Based on the professional judgment of the SFWO-approved biologist, if project activities can be conducted without harming or injuring the FYLF, it may be left at the location of discovery and monitored by the SFWO-approved biologist. All project personnel will be notified of the finding and at no time will work occur within 50 feet of a FYLF without a SFWO-approved biologist present.

- Contact with the individual frog will be avoided and it will be allowed to move out of the hazardous situation of its own volition.

FYLF 7. Environmental Awareness Training – Prior to the start of construction, a SFWO-approved biologist—with experience in the ecology of the FYLF and the identification of all their life stages—will conduct a training program for all construction personnel, including contractors and subcontractors. Interpretation for non-English-speaking workers will be provided. All construction personnel will be provided a fact sheet conveying this information. The same instruction will be provided to any new workers before they are authorized to perform project work. The training will include, at a minimum, the following topics:

- Habitat within the AA

- Explanation of the species status and protection under state and federal laws

- AMMs to be implemented to avoid take of this species

- Communication and work stoppage procedures in case a listed species is observed within the AA

- Explanation of the importance of the environmentally sensitive areas

FYLF 8. Disease Prevention and Decontamination Procedures – To ensure that diseases are not conveyed between work areas by the SFWO-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times.

FYLF 9. Accidental Spills, SWPPP, Erosion Control, and BMPs (modified) – Prior to the onset of work, a plan will be in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and instructed in the appropriate measures to implement if a spill occurs. SWPPPs and erosion control BMPs will be developed and applied to minimize any wind- or water-related erosion. These provisions will be included in construction contracts for measures to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges. At a minimum, protective measures will include the following:

- No discharge of pollutants from vehicle and equipment cleaning is allowed into any storm drains or watercourses.

- Vehicle and equipment fueling as well as maintenance operations must be conducted at least 200 feet away from aquatic or riparian habitats and not in a location where a spill may drain directly toward aquatic habitat, except at established commercial gas stations or at an established vehicle maintenance facility. The monitor will implement the spill response plan to ensure contamination of aquatic or riparian habitat does not occur during such operations.

- Spill containment kits will be maintained on-site at all times during construction operations and/or staging or fueling of equipment.

- Dust control will be implemented and may include using water trucks and nontoxic tackifiers (binding agents) to control dust in excavation and fill areas, applying rock to temporary access road entrances and exits, and covering of temporary stockpiles when weather conditions require.

FYLF 10. Site Restrictions – The following site restrictions will be implemented to avoid or minimize effects on the listed species and habitats:

- A speed limit of 15 miles per hour in the project footprint in unpaved areas will be enforced to reduce dust and excessive soil disturbance.

- Construction and ground disturbance will occur only during daytime hours, will cease no less than 30 minutes before sunset, and may not begin again earlier than 30 minutes after sunrise.

- Except when necessary for driver or pedestrian safety, to the maximum extent practicable, artificial lighting at a project site will be prohibited during the hours of darkness.

- Routes and boundaries of roadwork will be clearly marked prior to initiating construction or grading.

- All food and food-related trash items will be enclosed in sealed trash containers and properly disposed of off-site.

- No pets will be allowed within work areas during construction.

FYLF 11. Limitation on Herbicide Use (modified) – To minimize the potential for herbicides to reach aquatic habitats that may support FYLF via runoff or drift, herbicides will not be applied within 200 feet of aquatic features occurring within the AA.

FYLF 12. Seasonal Work Restriction – To the extent practicable, project activities will be confined to times outside of the FHYLF breeding season (May–July) to avoid the period when individuals are likely to be travelling to and from breeding sites.

References

United States Fish and Wildlife (USFWS). 2017. Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus). U.S. Fish and Wildlife Service; Sacramento, California. 28 pp.

_____. 2019. Programmatic Formal Section 7 Consultation of Federal Emergency Management Agency's Disaster, Mitigation, and Preparedness Programs within the Sacramento Fish and Wildlife Office's Jurisdiction, California. USFWS Sacramento Fish and Wildlife Office, Sacramento, CA.

Appendix B

Agency and Tribal Correspondence

United States Department of the Interior
FISH AND WILDLIFE SERVICE
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Sacramento, California 95825-1846
SFWO_mail@fws.gov

In Reply Refer to:
2023-0004450-S7-001

March 7, 2023

Kenneth Sessa
Acting Regional Environmental Officer, Region IX
FEMA Region IX-U.S. Department of Homeland Security
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Kenneth.Sessa@fema.dhs.gov

Subject: Informal Consultation and Conference on the Town of Paradise—Hazardous Fuels Reduction Program and Category 4 Tree Removal Project, Butte County, California (FEMA HMGP-4407-255-060/4407-305-057)

Dear Kenneth Sessa:

This letter is in response to the Federal Emergency Management Agency's (FEMA) February 16, 2023, request for initiation of informal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Town of Paradise—Hazardous Fuels Reduction Program and Category 4 Tree Removal Project (proposed project) in Butte County, California. At issue are the proposed project's effects on the federally threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (beetle) and California red-legged frog (*Rana draytonii*) (red-legged frog), and the proposed threatened North Feather Distinct Population Segment of the foothill yellow-legged frog (*Rana boylii*) (yellow-legged frog). This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

The federal action on which we are consulting is FEMA providing funding through their Hazard Mitigation Grant Program authorized by section 404 of the Stafford Act to the town of Paradise (subapplicant) in order to undertake the proposed project. Pursuant to 50 CFR 402.12(j), you submitted a biological assessment for our review and requested concurrence with the findings presented therein. These findings conclude that the proposed project may affect but is not likely to adversely affect the species at issue.

In considering your request, we based our evaluation on the following:

1) Your February 16, 2023, email requesting initiation of informal consultation and conference;

2) The February 2023 *Biological Assessment—Town of Paradise—Hazardous Fuels Reduction Program and Category 4 Tree Removal Town of Paradise, California HMGP-*

4407-255-060 and 4407-305-057 (biological assessment), including appendices, prepared by CDM Smith (consultant);

3) The February 2023 *Biological Assessment Foothill Yellow-Legged Frog Addendum—Town of Paradise—Hazardous Fuels Reduction Program and Category 4 Tree Removal Town of Paradise, California HMGP-4407-255-060 and 4407-305-057* (addendum) prepared by the consultant;

4) Technical assistance via email and meeting communication between the Service and FEMA; and

5) Other information available to the Service.

The proposed project is within the subapplicant's jurisdiction of the town of Paradise, Butte County, California, and contains two activities with the potential to affect federally listed species: (1) hazardous fuel reduction along town rights-of-way and (2) hazardous tree removal. These activities will be conducted over three years.

Hazardous Fuel Reduction

Hazardous fuel reduction will be conducted within public rights-of-way along 99 miles of public roads within the town. Approximately 275 acres of vegetation will be treated using a combination of mechanical and chemical methods. Hazardous fuels reduction will be conducted by a three-person team using masticators mounted on excavators. Root balls will not be removed, and subsurface disturbance is not anticipated. Any retained vegetation will be cut to a minimum height above grade so that near bare soil conditions are achieved. A limited amount of the cut vegetation may be chipped and broadcast in place, while the remainder will be taken to a green waste yard. Twice a year, herbicide spraying will be conducted over a period of three weeks using a backpack sprayer and utility terrain vehicle.

Onsite staging and stockpiling areas will be located where vegetative growth has been cleared and along the shoulder of roadways. The equipment for hazardous fuel reduction work will include trucks and trailers for transport of equipment, a water tank, chippers, masticators, and mulchers. All equipment will be rubber tired. When not in use, equipment will be stored at the Public Works Yard owned by the subapplicant. Mechanical equipment use and herbicide spraying will be performed outside of the fire season. During the fire season, hand tools will be used to avoid the potential for mechanical equipment to spark and ignite fires. Herbicide spraying activities will be conducted in compliance with local environmental health, training, and permitting regulations. All equipment will be operated on pavement or previously disturbed road shoulders. Public roads will be used to access the public rights-of-way and no new access routes will be needed.

Hazardous Tree Removal

The subapplicant proposes to remove standing and felled burnt trees on private properties within the town limits. Hazardous trees are generally defined as trees that have a diameter at breast height greater than 6 inches with more than 50 percent of the crown damaged or destroyed; with a split trunk, broken branches, or exposed heartwood; or that are leaning at an angle greater than 30 degrees. Hazardous trees may be located anywhere within the town limits and interested property owners will apply to the subapplicant to participate in the program. Hazardous trees will be identified by a certified arborist who will make site-specific recommendations regarding

access and removal methods. It is estimated that more than 200,000 eligible hazardous trees can be found within the town.

Once trees are marked by a certified arborist, a licensed timber operator will fell the trees in accordance with logging industry best practices. Felling methods include manual felling with ground crews using hand-operated power tools (e.g., chain saws) or mechanical felling methods such as the use of wheeled tractors, crawler-type tractors, or specially designed vehicles with attached implements designed to cut, crush, or chop target vegetation. Felled trees will be removed from the stump location via heavy equipment or by crane and moved to the nearest road where they will be loaded onto trucks. Trees may be left on the ground for a few days where they were dropped before being removed to roadsides for transport. Logs will be transported either as whole logs to end-use facilities or to a green waste yard for disposal. Slash will be chipped and spread on disturbed soil for erosion control or transported to the green waste yard for disposal.

Best Management Practices

Staff working on the proposed project will receive training on stormwater pollution prevention and best management practices. A project-specific Stormwater Pollution Prevention Plan will be prepared and implemented. This plan will identify the seasonal streams within the town limits. No vegetation clearing will be performed near streams, and a 25-foot to 150-foot setback will be maintained from all streams, depending on stream class and slope per California Forest Practice Rules (California Department of Forestry and Fire Protection 2022). Streams that provide habitat for the yellow-legged frog will have a setback of no less than 100 feet.

Conservation Measures

The following is a summary of the proposed conservation measures, as outlined in the biological assessment and addendum, to avoid and minimize effects to the species at issue. The conservation measures described below are considered part of the proposed project evaluated by the Service in this letter.

These measures have been adapted from those in the March 27, 2019, *Programmatic Formal Section 7 Consultation on Federal Emergency Management Agency's Disaster, Mitigation, and Preparedness Programs within the Sacramento Fish and Wildlife Office's Jurisdiction, California* (Service File 08ESMF00-2018-F-3331-1) and retain the numbering from that document for consistency. Measures from that document that are not applicable to the proposed project have been excluded; therefore, the numbering is not always sequential.

General Conservation Measures

GEN AMM-1 Erosion and Sedimentation Prevention Measures (modified) – Ground disturbance from project activities is expected to be minimal; however, because many project areas are near aquatic features, the subapplicant will prepare an Erosion Control Plan to detail the required erosion and sedimentation prevention measures. As part of this plan, the subapplicant will ensure that sediment-control devices are installed and maintained correctly. For example, sediment will be removed from engineering controls once the sediment has reached one-third of the exposed height of the control. The devices will be inspected frequently (i.e., daily or weekly, as necessary) to ensure that they are functioning properly; controls will be immediately repaired or replaced, or additional controls will be installed as necessary. Sediment that is captured in

these controls may be disposed of on-site in an appropriate, safe, approved area or off-site at an approved disposal site.

Any areas of soil disturbance, including temporarily disturbed areas, will be seeded with a regionally appropriate erosion control seed mixture. On soil slopes with an angle greater than 30 percent, erosion control blankets will be installed, or a suitable and approved binding agent will be applied. Runoff will be diverted away from steep or denuded slopes.

Where habitat for covered species is identified within or adjacent to the project footprint, all disturbed soils at the site will undergo erosion control treatment before the rainy season starts and after construction is terminated. Treatment may include temporary seeding and sterile straw mulch.

GEN AMM-3 Dust Control Measures – To reduce dust, all traffic associated with the subapplicant's construction activities will be restricted to a speed limit of 15 miles per hour (mph) when traveling off of highways or town roads.

Stockpiles of material that are susceptible to windblown dispersal will be covered with plastic sheeting or other suitable material to prevent movement of the material. During construction, water or other binding materials will be applied to disturbed ground that may become windborne. If binding agents are used, all manufacturers' recommendations for use will be followed.

GEN AMM-4 Spill Control Planning – The subapplicant will prepare a Spill Prevention and Pollution Control Plan to address the storage of hazardous materials and emergency cleanup of any hazardous material that will be available on-site, if applicable. The plan will incorporate hazardous waste, stormwater, and other emergency planning requirements.

GEN AMM-5 Spill Prevention and Pollution Control Measures (modified) – The subapplicant will exercise every reasonable precaution to protect federally listed species and their habitats from pollution caused by fuels, oils, lubricants, or other harmful materials. Project-related pollutants will be collected and transported to an authorized disposal area, as appropriate, per all federal, state, and local laws and regulations.

The subapplicant will store all hazardous materials in properly designated containers in a storage area with an impermeable membrane between the ground and the hazardous materials. The storage area will be encircled by a berm to prevent the discharge of pollutants to groundwater or runoff into the habitats of covered species. A plan for the emergency cleanup of any hazardous material will be available on-site, and adequate materials for spill cleanup will be maintained on-site.

GEN AMM-6 Equipment Inspection and Maintenance – Well-maintained equipment will be used to perform the work and, except in the case of a failure or breakdown, equipment maintenance will be performed off-site. Equipment will be inspected daily by the operator for leaks or spills. If leaks or spills are encountered, the source of the leak will be identified, leaked material will be cleaned up, and the cleaning materials will be collected and properly disposed. Fueling will be conducted in accordance with the procedures to be developed in the Spill Prevention and Pollution Control Plan.

Vehicles and equipment that are used during the course of a project will be fueled and serviced in a "safe" area (i.e., outside of sensitive habitats) in a manner that will not affect covered species

or their habitats. Spills, leaks, and other problems of a similar nature will be resolved immediately to prevent unnecessary effects on covered species and their habitats. A plan for the emergency cleanup of any spills (fuel or other material) will be available on-site, and adequate materials for spill cleanup will be maintained on-site.

GEN AMM-7 Fueling Activities (modified) – Vehicles and equipment that are used during project implementation will be fueled and serviced in a manner that will not affect covered species or their habitats. Machinery and equipment used during work will be serviced, fueled, and maintained on uplands to prevent contamination of surface waters. Fueling equipment and vehicles will be kept more than 200 feet away from waters of the United States.

GEN AMM-9 Materials Storage and Disposal (modified) – All hazardous materials will be stored in upland areas in storage trailers and/or shipping containers designed to provide adequate containment. Short-term laydown of hazardous materials for immediate use will be permitted, provided the same containment precautions are taken as described for hazardous materials storage. All construction materials, wastes, debris, sediment, rubbish, trash, and fencing will be removed from the site when project construction is complete; it all will be transported to an authorized disposal area, as appropriate, in compliance with applicable federal, state, and local laws and regulations. No disposal of construction materials or debris will occur in a floodplain. Construction materials or debris will not be stored in a floodplain during flood season.

GEN AMM-10 Fire Prevention – With the exception of vegetation-clearing equipment, no vehicles or construction equipment will be operated in areas of tall, dry vegetation.

The subapplicant will develop and implement a fire prevention and suppression plan for all maintenance and repair activities that require welding or that otherwise pose a risk for starting a wildfire.

GEN AMM-11 Waste Management (modified) – Work area will be kept free of loose trash. All food waste will be removed from the work areas on a daily basis. All wastes, debris, sediment, rubbish, vegetation, trash, and fencing will be removed from the site once the project is completed; it will all be transported to an authorized disposal area, as appropriate, per all federal, state, and local laws and regulations.

GEN AMM-13 Work Area Designation to Minimize Disturbance (modified) – The subapplicant will reduce (to the maximum extent practicable) the amount of disturbance at a site (to the absolute minimum) necessary to accomplish the project.

Project planning must consider not only the effects of the action itself, but also ancillary activities associated with the actions, such as equipment staging and refueling areas, topsoil or spoils stockpiling areas, material storage areas, disposal sites, routes of ingress and egress to the project site, and all other related activities necessary to complete the project.

GEN AMM-14 Access Routes and Staging Areas – When working on stream banks or floodplains, disturbance to existing grades and vegetation will be limited to the actual site of the project and necessary access routes. Placement of all roads, staging areas, and other facilities will avoid and limit disturbance to sensitive habitats (e.g., stream banks, stream channel, and riparian habitat) as much as possible. When possible, existing ingress or egress points will be used and/or work will be performed from the top of the stream banks. After completion of the work, the

contours of the stream bed, vegetation, and stream flows will be returned to their preconstruction condition or better.

All staging and material storage areas, including the locations where equipment and vehicles are parked overnight, will be placed outside of the flood zone of a watercourse, above areas of tidal inundation, away from riparian habitat or wetland habitat, and away from any other sensitive habitats. When possible, staging and access areas will be situated in areas that are previously disturbed, such as developed areas, paved areas, parking lots, areas with bare ground or gravel, and areas clear of vegetation.

GEN AMM-15 Environmental Awareness Training – All construction personnel will be given environmental awareness training by the project's environmental inspector or biological monitor before the start of construction. The training will familiarize all construction personnel with the covered species that may occur on-site, their habitats, general provisions and protections afforded by the Act, measures to be implemented to protect these species, and the project boundaries. This training will be provided within 3 days of the arrival of any new worker.

As part of the environmental awareness training, construction personnel will be notified that dogs or any other pets under control of construction personnel will not be allowed within the construction area, and that firearms will not be permitted in the construction area, unless carried by authorized security personnel or law enforcement.

GEN AMM-16 Biological Monitor – If a project involves activities that may result in encounters with listed species, a Service-approved biologist will be present on-site for all construction activities that occur within 100 feet of habitat for those species. If a Service-approved biologist is needed, the subapplicant will submit the biologist's qualifications to the Service for approval 30 days prior to project construction. The Service-approved biologist will ensure that all applicable conservation measures are implemented during project construction. The Service-approved biologist will also ensure that all vehicles entering the site are free of debris that may harbor organisms that could be introduced to the site, such as vegetation or mud from other aquatic areas. The Service-approved biologist will also ensure that turbidity, sedimentation, and the release of materials such as dust or construction runoff are controlled, and that spill control measures are enacted properly.

The Service-approved biologist will oversee construction activities to ensure that no listed species and/or their habitats are adversely affected. The Service-approved biologist will have the authority to stop any work activities that may result in potential adverse effects to listed species and/or their habitats.

Approval requests from the subapplicant for Service-approved biologists must include, at a minimum:

a. Relevant education
b. Relevant training concerning the listed species for which approval is requested, including species identification, survey techniques, handling individuals of different age classes, and handling of different life stages by a permitted biologist or recognized species expert authorized by the Service for such activities
c. Summary of field experience conducting requested activities (to include project/research information)
d. Summary of biological opinions under which they were authorized to work with the requested species and at what level (such as construction monitoring versus handling),

including the names and qualifications of persons under which the work was supervised as well as the amount of work experience on the actual project

e. List of Federal Recovery Permits [10(a)1(A)] held or under which they are authorized to work with the species requested (to include the permit number, authorized activities, and name of permit holder)
f. Any relevant professional references with contact information

GEN AMM-17 Daily Work Hours (modified) – Construction activities that may affect suitable habitat for listed species will be limited to daylight hours during weekdays, leaving the nighttime and weekend periods for the species.

GEN AMM-18 Entrapment Prevention (modified) – Equipment and materials that have the potential to entangle or entrap wildlife will be properly contained so that wildlife cannot interact with the materials.

Species-specific Conservation Measures

If a listed species is identified on-site, crews will immediately stop work within 50 feet of the individual and inform the construction supervisor and the Service-approved biologist. Work will not continue within 50 feet of the individual until it has traveled off the project site of its own volition.

Valley Elderberry Longhorn Beetle

VELB-1. Fencing – All areas to be avoided during construction activities because of the presence of elderberry shrubs (*Sambucus* spp.), as identified by a Service-approved biologist, will be fenced and/or flagged as close to construction limits as feasible.

VELB-2. Avoidance Area – Activities that may damage or kill an elderberry shrub may need an avoidance area of at least 20 feet from the drip-line, depending on the type of activity.

VELB-3. Work Education – A Service-approved biologist will provide training for all contractors, work crews, and any on-site personnel on the status of the beetle, its host plant and habitat, the need to avoid damaging the elderberry shrubs, and the possible penalties for noncompliance.

VELB-4. Biological Monitor – A Service-approved biologist will monitor the work area at project-appropriate intervals to ensure that all conservation measures are implemented. The amount and duration of monitoring will depend upon the project specifics, and the contractor will discuss it with the Service-approved biologist.

VELB-5. Seasonal Avoidance – As much as feasible, all activities that could occur within 50 meters (165 feet) of an elderberry shrub will be conducted between August and February, outside of the flight season of the beetle, which occurs from March to July, coinciding with the bloom period of the elderberry plant.

VELB-6. Trimming – Trimming may remove or destroy beetle eggs or larvae and may reduce the health and vigor of the elderberry shrub. To avoid and minimize adverse effects on the beetle when trimming, trimming will occur between November and February and will avoid the removal of any branches or stems that are >1 inch in diameter.

VELB-7 Limitations on Chemical Use – Herbicides will not be used within the drip-line of any elderberry shrub. Insecticides will not be used within 98 feet of any elderberry shrub. All chemicals will be applied using a backpack sprayer or similar direct application method in these areas.

VELB-8. Mowing – Mechanical weed removal within the drip-line of the shrub will be limited to the season when adults are not active (August–February) and will avoid damaging the elderberry.

VELB-11. Impacts to Individual Shrubs – No adverse impacts to the beetle will occur if trimming does not remove stems/branches that are >1 inch in diameter and is conducted between November and February. In order to avoid take due to trimming activities, the Service recommends the following be evaluated:

a. Conduct an exit hole survey on the plant
b. Evaluate the surrounding habitat (riparian vs. non-riparian)
c. Evaluate the potential suitability of the plant to provide VELB habitat
    i. Riparian plants are much more likely to be occupied or colonized by VELB
    ii. Plants in non-riparian locations will be evaluated using the criteria described in Section 4 of the *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (Service 2017)

<u>California Red-legged Frog</u>

CRLF-1. Biological Monitor – Service-approved biologist(s) will be on-site during all activities that may result in encounters with red-legged frogs.

CRLF-3. Rain Event Limitation – To the maximum extent practicable, no construction activities will occur during rain events or within 24 hours following a rain event. Prior to construction activities resuming, a Service-approved biologist will inspect the action area and all equipment/materials for the presence of red-legged frogs. Construction may continue 24 hours after the rain ceases if no precipitation is forecasted within the upcoming 24 hours. If rain exceeds 0.5 inches during a 24-hour period, work will cease until no further rain is forecasted. The Service may approve modifications to this timing on a case-by-case basis.

CRLF-4. Pre-construction Survey – Not more than 24 hours prior to the date of initial ground disturbance and vegetation clearing, a Service-approved biologist—with experience in the identification of all life stages of the red-legged frog and designated critical habitat—will conduct a preconstruction survey at the project site. The survey will consist of walking the project limits and observing within the project site to determine possible presence of the species. The Service-approved biologist will investigate all areas that could be used by red-legged frogs for feeding, breeding, sheltering, movement, and other essential behaviors, such as small woody debris, refuse, and burrows entries.

CRLF-5. Daily Clearance Surveys – A Service-approved biologist will conduct clearance surveys at the beginning of each day and regularly throughout the workday when construction activities are occurring that may result in encounters with red-legged frogs.

CRLF-9. Encounters with Species – Each encounter with a red-legged frog will be treated on a case-by-case basis. If any life stage of the red-legged frog is found, the following will apply:

- If red-legged frogs are detected in the action area, work activities within 50 feet of the individual that may result in the harm, injury, or death to the animal will cease immediately and the on-site project manager and Service-approved biologist will be notified. Based on the professional judgement of the Service-approved biologist, if project activities can be conducted without harming or injuring the red-legged frog, it may be left at the location of discovery and monitored by the Service-approved biologist. All project personnel will be notified of the finding and at no time will work occur within 50 feet of a red-legged frog without a Service-approved biologist present.

- Contact with the individual red-legged frog will be avoided and it will be allowed to move out of the hazardous situation of its own volition.

CRLF-11. Environmental Awareness Training – Prior to the start of construction, a Service-approved biologist—with experience in the ecology of the red-legged frog and the identification of all their life stages—will conduct a training program for all construction personnel, including contractors and subcontractors. Interpretation for non-English-speaking workers will be provided. All construction personnel will be provided a fact sheet conveying this information. The same instruction will be provided to any new workers before they are authorized to perform project work. The training will include, at a minimum:

a. Habitat within the action area
b. Explanation of the species status and protection under state and federal laws
c. Conservation measures to be implemented to avoid take of this species
d. Communication and work stoppage procedures in case a listed species is observed within the action area
e. Explanation of the importance of the environmentally sensitive areas

CRLF-12. Disease Prevention and Decontamination Procedures – To ensure that diseases are not conveyed between work areas by the Service-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force (see Enclosure) will be followed at all times.

CRLF-16. Accidental Spills, Stormwater Pollution Protection Plan, Erosion Control, and Best Management Practices (modified) – Prior to the onset of work, a plan will be in place for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and instructed in the appropriate measures to implement if a spill occurs. Stormwater pollution prevention plans and erosion control best management practices will be developed and applied to minimize any wind- or water-related erosion. These provisions will be included in construction contracts for measures to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges. At a minimum, protective measures will include:

- No discharge of pollutants from vehicle and equipment cleaning is allowed into any storm drains or watercourses.
- Vehicle and equipment fueling, and maintenance operations must be conducted at least 200 feet away from aquatic or riparian habitats and not in a location where a spill may drain directly toward aquatic habitat, except at established commercial gas stations or at an established vehicle maintenance facility. The monitor will implement the spill response plan to ensure contamination of aquatic or riparian habitat does not occur during such operations.

- Spill containment kits will be maintained on-site at all times during construction operations and/or staging or fueling of equipment.
- Dust control will be implemented and may include the use of water trucks and nontoxic tackifiers (binding agents) to control dust in excavation and fill areas, rocking temporary access road entrances and exits, and covering of temporary stockpiles when weather conditions require.

CRLF-17. Site Restrictions (modified) – Following site restrictions will be implemented to avoid or minimize effects on the listed species and habitats:

- Speed limit of 15 mph in the project footprint in unpaved areas will be enforced to reduce dust and excessive soil disturbance.
- Construction and ground disturbance will occur only during daytime hours and will cease no less than 30 minutes before sunset and may not begin again earlier than 30 minutes after sunrise.
- Except when necessary for driver or pedestrian safety, to the maximum extent practicable, artificial lighting at a project site will be prohibited during the hours of darkness.
- Routes and boundaries of roadwork will be clearly marked prior to initiating construction or grading.
- All food and food-related trash items will be enclosed in sealed trash containers and properly disposed of off-site.
- No pets will be allowed within work areas during construction.

CRLF-19. Limitation on Insecticide/Herbicide Use (modified) – Insecticides or herbicides will not be applied at the project site where there is the potential for these chemical agents to enter creeks, streams, or waterbodies that contain habitat for the red-legged frog. Herbicides will not be applied to uplands between October 16 to April 30.

<u>North Feather Distinct Population Segment of the Foothill Yellow-legged Frog</u>

FYLF-1. Biological Monitor – Service-approved biologist(s) will be on-site during all activities that may result in encounters with yellow-legged frogs.

FYLF-2. High-Water Limitation – To the maximum extent practicable, no construction activities will occur during high-water events or within 24 hours following a high-water event to avoid times when yellow-legged frogs are likely to move away from waterways to seek refuge from peak flows. Prior to construction activities resuming, a Service-approved biologist will inspect the action area and all equipment/materials for the presence of yellow-legged frogs. Construction may continue 24 hours after high-water conditions cease. Service may approve modifications to this timing on a case-by-case basis.

FYLF-3. Preconstruction Survey – Not more than 24 hours prior to the date of initial ground disturbance and vegetation clearing, a Service-approved biologist—with experience in the identification of all life stages of the yellow-legged frog—will conduct a preconstruction survey at the project site. The survey will consist of walking the project limits and observing within the project site to determine possible presence of the species. The Service-approved biologist will investigate all areas that could be used by yellow-legged frogs for feeding, breeding, sheltering, movement, and other essential behaviors, such as small woody debris, refuse, and leaf litter.

FYLF-4. Daily Clearance Surveys – A Service-approved biologist will conduct clearance surveys at the beginning of each day and regularly throughout the workday when construction activities are occurring that may result in encounters with yellow-legged frogs.

FYLF-5. Riparian Vegetation Removal – To the maximum extent practicable, vegetation removal in streamside riparian areas will retain canopy cover of at least 20 percent to maintain conditions preferred by the yellow-legged frog.

FYLF-6. Encounters with Species – Each encounter with a yellow-legged frog will be treated on a case-by-case basis. If any life stage of the yellow-legged frog is found, the following will apply:

- If yellow-legged frogs are detected in the action area, work activities within 50 feet of the individual that may result in the harm, injury, or death to the animal will cease immediately and the on-site project manager and Service-approved biologist will be notified. Based on the professional judgment of the Service-approved biologist, if project activities can be conducted without harming or injuring the yellow-legged frog, it may be left at the location of discovery and monitored by the Service-approved biologist. All project personnel will be notified of the finding and at no time will work occur within 50 feet of a yellow-legged frog without a Service-approved biologist present.
- Contact with the individual yellow-legged frog will be avoided and it will be allowed to move out of the hazardous situation of its own volition.

FYLF-7. Environmental Awareness Training – Prior to the start of construction, a Service-approved biologist—with experience in the ecology of the yellow-legged frog and the identification of all their life stages—will conduct a training program for all construction personnel, including contractors and subcontractors. Interpretation for non-English-speaking workers will be provided. All construction personnel will be provided a fact sheet conveying this information. The same instruction will be provided to any new workers before they are authorized to perform project work. The training will include, at a minimum, the following topics:

- Habitat within the action area
- Explanation of the species status and protection under state and federal laws
- Conservation measures to be implemented to avoid take of this species
- Communication and work stoppage procedures in case a listed species is observed within the action area
- Explanation of the importance of the environmentally sensitive areas

FYLF-8. Disease Prevention and Decontamination Procedures – To ensure that diseases are not conveyed between work areas by the Service-approved biologist, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force (see Enclosure) will be followed at all times.

FYLF-9. Accidental Spills, Stormwater Pollution Protection Plan, Erosion Control, and Best Management Practices (modified) – Prior to the onset of work, a plan will be in place for prompt and effective response to any accidental spills.

All workers will be informed of the importance of preventing spills and instructed in the appropriate measures to implement if a spill occurs. Stormwater pollution protection plans and erosion control best management practices will be developed and applied to minimize any wind-

or water-related erosion. These provisions will be included in construction contracts for measures to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges. At a minimum, protective measures will include the following:

- No discharge of pollutants from vehicle and equipment cleaning is allowed into any storm drains or watercourses.
- Vehicle and equipment fueling as well as maintenance operations must be conducted at least 200 feet away from aquatic or riparian habitats and not in a location where a spill may drain directly toward aquatic habitat, except at established commercial gas stations or at an established vehicle maintenance facility. The monitor will implement the spill response plan to ensure contamination of aquatic or riparian habitat does not occur during such operations.
- Spill containment kits will be maintained on-site at all times during construction operations and/or staging or fueling of equipment.
- Dust control will be implemented and may include using water trucks and nontoxic tackifiers (binding agents) to control dust in excavation and fill areas, applying rock to temporary access road entrances and exits, and covering of temporary stockpiles when weather conditions require.

FYLF-10. Site Restrictions – The following site restrictions will be implemented to avoid or minimize effects on the listed species and habitats:

- A speed limit of 15 miles per hour in the project footprint in unpaved areas will be enforced to reduce dust and excessive soil disturbance.
- Construction and ground disturbance will occur only during daytime hours, will cease no less than 30 minutes before sunset, and may not begin again earlier than 30 minutes after sunrise.
- Except when necessary for driver or pedestrian safety, to the maximum extent practicable, artificial lighting at a project site will be prohibited during the hours of darkness.
- Routes and boundaries of roadwork will be clearly marked prior to initiating construction or grading.
- All food and food-related trash items will be enclosed in sealed trash containers and properly disposed of off-site.
- No pets will be allowed within work areas during construction.

FYLF-11. Limitation on Herbicide Use (modified) – To minimize the potential for herbicides to reach aquatic habitats that may support yellow-legged frogs via runoff or drift, herbicides will not be applied within 200 feet of aquatic features occurring within the action area.

FYLF-12. Seasonal Work Restriction – To the extent practicable, project activities will be confined to times outside of the yellow-legged frog breeding season (May–July) to avoid the period when individuals are likely to be travelling to and from breeding sites.

Valley Elderberry Longhorn Beetle

For the most recent comprehensive assessment of the rangewide status of the beetle, please refer to the *Revised Recovery Plan for Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)* (Service 2019). The beetle occurs in the Central Valley from Shasta County to Madera County below 500 feet in elevation and is dependent on the presence of elderberry

(*Sambucus* spp.), its obligate larval host plant. Occupancy of elderberry by the beetle is generally low but tends to be highest in riparian communities.

There are known occurrences of the beetle in the California Natural Diversity Database (Database) along drainages downstream of the proposed project area (Service 2019, Database 2023). The Service's mapping of the current range of the beetle extends up the riparian canyon of Honey Run just inside the western boundary of the town of Paradise, which is otherwise at an elevation of 1,778 feet, well above the elevational range of the beetle. Therefore, it is unlikely that beetles are present within the proposed project area.

After reviewing all the available information, the Service concurs with your determination that the proposed project may affect but is not likely to adversely affect the beetle. The proposed project reached the "may affect" level for the beetle, and the subsequent requirement for a biological assessment, since a portion of the proposed project is within the mapped current range of the beetle, elderberry plants are found within the proposed project area, and the beetle is known to occur in the vicinity. However, due to the low likelihood that the beetle will be found in the proposed project area and considering the proposed conservation measures, the Service believes that any potential adverse effects to the beetle from the proposed project are extremely unlikely to occur, and thus are considered discountable for the purposes of this consultation.

California Red-legged Frog

For the most recent comprehensive assessment of the rangewide status of the red-legged frog, please refer to the *California Red-Legged Frog (*Rana draytonii*) 5-Year Review: Summary and Evaluation* (Service 2022). The red-legged frog persists in isolated populations in the Sierra Nevada, breeding in ponds or slow-moving streams and utilizing adjacent upland habitat for foraging, shelter, and occasionally long-distance movement.

The closest known occurrence of the red-legged frog is approximately 8.5 miles to the east of the proposed project area at Hughes Pond on the Plumas National Forest (Service 2022, Database 2023). While most proposed project work will occur along roadways and adjacent to existing development, portions of the proposed project area contain suitable habitat for the red-legged frog, including perennial and seasonal streams. Since the 2018 Camp Fire, surveys and monitoring for listed species have occurred due to other debris clean up and rehabilitation projects. Although yellow-legged frogs have been found, red-legged frogs have not been documented within the town of Paradise (Database 2023). Therefore, it is unlikely that red-legged frogs are present within the proposed project area.

After reviewing all the available information, the Service concurs with your determination that the proposed project may affect but is not likely to adversely affect the red-legged frog. The proposed project reached the "may affect" level for the red-legged frog, and the subsequent requirement for a biological assessment, since the proposed project is within the range of the red-legged frog, habitat for the red-legged frog exists within the proposed project area, and the red-legged frog is known to occur in the vicinity. However, due to the low likelihood that the red-legged frog will be present in the proposed project area and considering the proposed conservation measures, the Service believes that any potential adverse effects to the red-legged frog from the proposed project are extremely unlikely to occur, and thus are considered discountable for the purposes of this consultation.

North Feather Distinct Population Segment of the Foothill Yellow-legged Frog

For the most recent comprehensive assessment of the rangewide status of the yellow-legged frog, please refer to the *Species Status Assessment Report for the Foothill Yellow-legged Frog (*Rana boylii*)* (Service 2021). The yellow-legged frog is a stream-obligate species, breeding along mainstem channels and overwintering in smaller tributary streams. The proposed project area is within the range of the North Feather Distinct Population Segment of the yellow-legged frog.

There are seven known occurrences of the yellow-legged frog in the Database within the proposed project area, including five documented since the Camp Fire (Database 2023). Most of the proposed work will occur along roadways and adjacent to existing development, and no work will occur within 100 feet of any streams that provide suitable habitat for the yellow-legged frog. Because the yellow-legged frog is closely tied to its aquatic habitat, it is unlikely that they would be found within any areas of proposed work. In addition, the subapplicant has proposed several conservation measures, including daily surveys and biological monitoring, that are expected to prevent any adverse effects to the yellow-legged frog.

After reviewing all the available information, the Service concurs with your determination that the proposed project may affect but is not likely to adversely affect the yellow-legged frog. The proposed project reached the "may affect" level for the yellow-legged frog, and the subsequent requirement for a biological assessment, since the proposed project is within the range of the yellow-legged frog, habitat for the yellow-legged frog exists within the proposed project area, and the yellow-legged frog is known to occur within the proposed project area. However, due to the low likelihood that the yellow-legged frog will be present in the proposed project work areas and considering the proposed conservation measures, the Service believes that any potential adverse effects to the yellow-legged frog from the proposed project are extremely unlikely to occur, and thus are considered discountable for the purposes of this consultation.

This concludes the Service's review of the Town of Paradise—Hazardous Fuels Reduction Program and Category 4 Tree Removal Project. No further coordination with the Service under the Act is necessary at this time. Please note, however, that this letter does not authorize take of listed species. As provided in 50 CFR §402.16(a), reinitiation of consultation is required and shall be requested by the federal agency or by the Service where discretionary federal involvement or control over the action has been retained or is authorized by law, and:

1) New information reveals the effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this review;

2) The agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this review; or

3) A new species is listed or critical habitat designated that may be affected by the action.

If you have any questions regarding this letter, please contact Lily Douglas, Senior Fish and Wildlife Biologist, by email (lily_douglas@fws.gov) or by phone at (916) 414-6685, or me by email (megan_cook@fws.gov), by phone at (916) 414-6492, or at the letterhead address.

Sincerely,

MEGAN COOK Digitally signed by MEGAN COOK
Date: 2023.03.07 14:06:37 -08'00'

Megan Cook
Sacramento Valley Division Supervisor

Enclosure

ec:
Adam Klatzker, Environmental and Historic Preservation, FEMA Region 9, Oakland, California

LITERATURE CITED

[Database] California Department of Fish and Wildlife. 2023. California Natural Diversity Database (Database) – Government version dated January 2, 2023. Accessed February 2023.

California Department of Forestry and Fire Protection. 2022. California Forest Practice Rules 2022. Title 14, California Code of Regulations, Chapters 4, 4.5, and 10.

[Service] U.S. Fish and Wildlife Service. 2017. Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). Sacramento, California. May 2017.

[Service] U.S. Fish and Wildlife Service. 2019. Revised Recovery Plan for Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). Pacific Southwest Region, Region 8, Sacramento, California. October 4, 2019.

[Service] U.S. Fish and Wildlife Service. 2021. Species Status Assessment Report for the Foothill Yellow-legged Frog (*Rana boylii*), Version 2.0. Sacramento Fish and Wildlife Office, Sacramento, California. October 2021.

[Service] U.S. Fish and Wildlife Service. 2022. California Red-Legged Frog *(Rana draytonii*) 5-Year Review: Summary and Evaluation. Sacramento Fish and Wildlife Office, Sacramento, California. December 2022.

Enclosure

The Declining Amphibian Task Force Fieldwork Code of Practice

A code of practice, prepared by the Declining Amphibian Task Force (DAPTF) to provide guidelines for use by anyone conducting field work at amphibian breeding sites or in other aquatic habitats. Observations of diseased and parasite-infected amphibians are now being frequently reported from sites all over the world. This has given rise to concerns that releasing amphibians following a period of captivity, during which time they can pick up unapparent infections of novel disease agents, may cause an increased risk of mortality in wild populations. Amphibian pathogens and parasites can also be carried in a variety of ways between habitats on the hands, footwear, or equipment of fieldworkers, which can spread them to novel localities containing species which have had little or no prior contact with such pathogens or parasites. Such occurrences may be implicated in some instances where amphibian populations have declined.
Therefore, it is vitally important for those involved in amphibian research (and other wetland/pond studies including those on fish, invertebrates and plants) to take steps to minimize the spread of disease and parasites between study sites.

1. Remove mud, snails, algae, and other debris from nets, traps, boots, vehicle tires and all other surfaces. Rinse cleaned items with sterilized (e.g. boiled or treated) water before leaving each study site.

2. Boots, nets, traps, etc., should then be scrubbed with 70% ethanol solution (or sodium hypochlorite 3 to 6%) and rinsed clean with sterilized water between study sites. Avoid cleaning equipment in the immediate vicinity of a pond or wetland.

3. In remote locations, clean all equipment as described above upon return to the lab or "base camp". Elsewhere, when washing machine facilities are available, remove nets from poles and wash with bleach on a "delicates" cycle, contained in a protective mesh laundry bag.

4. When working at sites with known or suspected disease problems, or when sampling populations of rare or isolates species, wear disposable gloves and change them between handling each animal. Dedicate sets of nets, boots, traps, and other equipment to each site being visited. Clean and store them separately and the end of each field day.

5. When amphibians are collected, ensure the separation of animals from different sites and take great care to avoid indirect contact between them (e.g. via handling, reuse of containers) or with other captive animals. Isolation from un-sterilized plants or soils which have been taken from other sites is also essential. Always use disinfected/disposable husbandry equipment.

6. Examine collected amphibians for the presence of diseases and parasites soon after capture. Prior to their release or the release of any progeny, amphibians should be quarantined for a period and thoroughly screened for the presence of any potential disease agents.

7. Used cleaning materials (liquids, etc.) should be disposed of safely and if necessary taken back to the lab for proper disposal. Used disposable gloves should be retained for safe disposal in sealed bags.

Mechoopda Indian Tribe of Chico Rancheria

Re: DC-HMGP-4407-189-058 / HMGP-4407-255-060 / HMGP-4407-305-057

Dear David Cohen:

On Behalf of the Mechoopda Indian Tribe of the Chico Rancheria ("Tribe"), We hereby Submit the following comments to express the Tribe's concerns related to the impacts to sacred places, properties and features of religious, ceremonial and cultural significance to the Tribe with regard to the above-referenced project ("Project")

The Project site lies within the ancestral lands of the Tribe. After cross-referencing with our database we have noticed that there are cultural resources on or in close proximity to the APE of these projects. With this information we deem these areas sensitive and believe that the likelihood of inadvertent discoveries is very high.

We request a Mechoopda Indian monitor shall be present during all earth moving and grading activities to assure that any potential cultural resources, found during Project ground disturbance be protected.

The Tribe's goal is simple and Clear: ensure the careful and complete implementation of all statutory and regulatory mechanisms for protecting cultural and historical resources to protect tribal cultural and historical resources that may be impacted by the Project.

We look forward to working with you on this matter.
Sincerely,

Kyle McHenry, Tribal Council

Tribal Historic Preservation officer

Mechoopda Tribe

125 Mission Ranch Blvd. Chico, CA 95926 **ph.** (530) 899-8922 **fx.** (503) 899-8517

Lisa Holm

From: Cohen, David <david.cohen@fema.dhs.gov>
Sent: Monday, December 13, 2021 9:49 AM
To: Lisa Holm
Subject: FW: Sec.106: Town of Paradise Wildfire Mitigation Program

Follow Up Flag: Follow up
Flag Status: Flagged

From: Anna Cheng <acheng@auburnrancheria.com>
Sent: Monday, December 6, 2021 3:30 PM
To: Cohen, David <david.cohen@fema.dhs.gov>
Cc: Anna Starkey <astarkey@auburnrancheria.com>
Subject: Sec.106: Town of Paradise Wildfire Mitigation Program

Dear Mr. Cohen,

On behalf of the United Auburn Indian Community's Tribal Historic Preservation Department, thank you for the notification and opportunity to consult on the project referenced above. We have reviewed the project location and determined that it falls outside of the UAIC's geographic area of traditional and cultural affiliations. Therefore, we will not be commenting on the project. Thank you.

Best,
Anna C.

The United Auburn Indian Community is now accepting electronic consultation request, project notifications, and requests for information! Please fill out and submit through our website. Do not mail hard copy letters or documents. https://auburnrancheria.com/programs-services/tribal-preservation ***Bookmark this link!***

Anna Cheng
Cultural Regulatory Assistant
Tribal Historic Preservation Department| UAIC
10720 Indian Hill Road
Auburn, CA 95603
Cell: (530) 492-4822
acheng@auburnrancheria.com |www.auburnrancheria.com

From: Point of Contact Berry Creek Rancheria
To: Young, Thomas N
Subject: Re: Town of Paradise Wildfire Mitigation programs (FEMA_HMGP-4407-189-058 / HMGP-4407-255-060 / HMGP-4407-305-057)
Date: Tuesday, August 9, 2022 8:41:22 AM

Considering we have already assessed the entire burn scar when it comes to the Camp Fire we do not have any concerns. There will be some mitigation needed in regard to ground disturbing activities when they do occur. If you could keep me updated on all ground disturbing activities I would greatly Appreciate it.

Thanks,
Jedediah Brown

From: Young, Thomas N <thomasn.young@fema.dhs.gov>
Sent: Monday, August 8, 2022 2:48 PM
To: Point of Contact Berry Creek Rancheria <poc@berrycreekrancheria.com>
Subject: Re: Town of Paradise Wildfire Mitigation programs (FEMA_HMGP-4407-189-058 / HMGP-4407-255-060 / HMGP-4407-305-057)

Jed, just wanted to let you know that there will not be any ground disturbing/tree removal/vegetation clearing activities for this phase of the project; they are strictly assessing properties and collecting data for environmental reviews and planning. There is no set date for tree removal to begin at this time.

Thomas N Young
Historic Preservation Specialist | Environmental & Historic Preservation | Region 9
Office/Mobile: (202) 251-3802
thomasn.young@fema.dhs.gov

Federal Emergency Management Agency
fema.gov

From: Reno Franklin <renokeoni@me.com>
Sent: Friday, November 19, 2021 2:03 PM
To: Lisa Holm
Cc: Cohen, David; Young, Thomas N; Creig Marcus; Cindy Smith; Crystal Gilbert
Subject: Re: Town of Paradise Wildfire Mitigation Programs (FEMA-HMGP-4407-189-058 / HMGP-4407-255-060 / HMGP-4407-305-057)
Attachments: 4407_Paradise_TCL_Estom Ymeka_Franklin.pdf; ATT00001.htm

Follow Up Flag: Follow up
Flag Status: Flagged

Thank you Lisa. We like like to learn more about the proposed program and it's potential effects to tribally significant cultural and historic properties.

Please consider this a request for more information.

Reno Keoni Franklin

On Nov 19, 2021, at 1:32 PM, Lisa Holm <holm@pacificlegacy.com> wrote:

Dear Mr. Franklin:

On behalf of FEMA, we are forwarding a letter sent via certified mail on November 19, 2021 for the Town of Paradise Wildfire Mitigation Programs (HMGP-4407-189-058 / HMGP-4407-255-060 / HMGP-4407-305-057), which would be centered in the Town of Paradise in Butte County, California. The Town proposes to implement the Residential Ignition Resistant Improvement Program (HMGP-4407-189-058), Hazardous Fuels Reduction Program (HMGP-4407-255-060), and Category 4 Tree Removal Program (HMGP-4407-255-
060) to mitigate damage from the 2018 Camp Fire and reduce risks from future wildfires within the Town limits.

If you have any questions or concerns regarding the programs, please do not hesitate to contact David Cohen at 510-627-7063 (office) or 202-812-5546 (mobile), via email at david.cohen@fema.dhs.gov, or at the following address:

U.S. Department of Homeland Security
Federal Emergency Management Agency, Region IX
1111 Broadway, Suite 1200
Oakland, CA 94607-4052

Due to remote working requirements, email and phone are FEMA's preferred methods of communication.
Thank you very much,

Lisa Holm
Senior Archaeologist &
Geospatial Analyst
Pacific Legacy, Inc.
900 Modoc Street

Berkeley, CA 94707
510.393.1160
holm@pacificlegacy.com

Appendix C

Eight-Step Decision-Making Process for Wetlands

Executive Order 11988 Floodplain Management Checklist (44 CFR Part 9)

Project Information

Date: 8/22/23

Reviewer: Annamarie Weddle

Disaster/Program: HMGP

Project Number: 4407-189-058, 4407-255-060, 4407

Project Title: Town of Paradise Wildfire Mitigation Projects

Latitude: 39.760047

Longitude: -121.622492

Description of Proposed Action:

Paradise proposes to implement four wildfire mitigation projects that are connected geographically, with each project to be funded under a separate FEMA grant. The four projects include: Defensible Space Code Enforcement, enhancing code enforcement activities to manage hazardous fuels and defensible space; Residential Ignition-Resistant Improvement Program, introducing a residential

Applicability

Actions which have the potential to affect floodplains or their occupants, or which are subject to potential harm by location in floodplains.

Will the proposed action potentially adversely affect the floodplain or support floodplain development?

Yes ☐ No ☒

Will the proposed action potentially be adversely affected by the floodplain?

Yes ☐ No ☒

Critical Action

Determine whether the proposed action is an action for which even a slight chance of flooding is too great. Critical actions must be reviewed against the 500-year floodplain.

Is the action a critical action?

☐ Yes, review against the 500-year floodplain

☐ No, review against the 100-year floodplain.

☒ Not Applicable, the action is located in wetlands only

Step 1: Determine Proposed Action Location

Determine whether the proposed action is located in the 100-year floodplain (500-year floodplain for critical actions); and whether it has the potential to affect or be affected by a floodplain or wetland (44 CFR Section 9.7).

Floodplain Determination

Flood Hazard Data (Check the box that applies)

Is the project located in a 100 year floodplain as mapped by a FEMA FIRM?

Yes ☐ No ☒

FIRM Panel Number: 06007C0400E, 06007C0375E, 06007C0550E, an

Date: January 6, 2011

Is the project located in a 500 year floodplain as mapped by a FEMA FIRM?

Yes ☐ No ☒

FIRM Panel Number: 06007C0400E, 06007C0375E, 06007C0550E, ar

Date: January 6, 2011

Is the project located in a floodplain as mapped by a FEMA draft/preliminary study?

Yes ☐ No ☒

Study Name:

Date:

Is the project located in a floodplain as mapped by another agency (State, USACE, USGS, NRCS, local community, etc)?

Yes ☐ No ☒

Study Name:

Date:

Is the project outside the floodplain but has potential to affect the floodplain, including support of floodplain development?

Yes ☐ No ☒

Flood Hazard Data Not Available

Is the proposed action subject to flooding based on an evaluation from soil surveys, aerial photos, site visits, and other available data?

Yes ☐ No ☒

Evaluation material:

Does FEMA assume the Proposed Action is subject to flooding based on previous flooding of the facility/structure?

Yes ☐ No ☒

Floodway/Coastal High Hazard Area

Is the project located in a floodway or coastal high hazard area (full 8 step process is required)?

Yes ☐ No ☒

Source, other than FIRM:

Wetland Determination

Is the project in a wetland as mapped by the National Wetlands Inventory?

Yes ☒ No ☐

Wetland Classification: freshwater forested/shrub wetlands

Date: March 10, 2022

Is the project in a wetland as mapped by another agency (USACE, state, local community)?

Yes ☐ No ☒

Name of study:

Date:

Scope

Select the appropriate block for the steps required.

☐ Steps 1, 4, 5, and 8 (44 CFR Part 9.5(g))

☐ Steps 1, 2, 4, 5, and 8. (44 CFR Part 9.5(d))

☒ All 8 steps

Step 2: Early Public Notice

Notify the public at the earliest possible time of the intent to carry out an action in a floodplain and involve the affected and interested public in the decision-making process (44 CFR Section 9.8).

Was notice provided as part of a disaster cumulative notice?

Yes ☒ No ☐ Not Applicable ☐

Was a project specific notice provided?

Yes ☒ No ☐ Not Applicable ☐

If yes, select the type of notice:

☐ Newspaper, name:

☒ Post Site, location: https://www.fema.gov/disaste

☐ Broadcast, station:

☐ Direct Mailing, area:

☐ Public Meeting, dates:

☐ Other:

Date of Public Notice: February 22, 2022

Step 3: Analysis of Practicable Alternatives

Identify and evaluate practicable alternatives to locating the proposed action in a floodplain (including alternate sites, actions, and the "no action" option). If a practicable alternative exists outside the floodplain, FEMA must located the proposed action at the alternative site (44 CFR Section 9.9).

Alternative Options

Is there a practicable alternative site location outside the 100-year floodplain (or 500-year floodplain for critical actions?)

Yes ☐ No ☐ Not Applicable ☒

If yes, describe the alternative site:

Is there an alternative action which has less potential to affect or be affected by the floodplain?

Yes ☐ No ☐ Not Applicable ☒

If yes, describe the alternative action:

Is the "no action" alternative the most practicable alternative?

Yes ☐ No ☐ Not Applicable ☒

If any answer is yes, that FEMA shall take that action and the review is concluded.

Floodway

Is the action new construction (i.e. construction of new structure, demolition/ rebuilding, reconstruction, replacement) or substantial improvement (for structures damaged in equal or excess of 50% of its market value or the total replacement cost of the structure)?

Yes ☐ No ☐ Not Applicable ☒

If Yes, is the action a functional dependent use (cannot perform its intended purpose unless it is located or carried out in close proximity to water) or a facility or structure that facilitates open space use?

Yes ☐ No ☐ Not Applicable ☐

If yes, explain:

If no, FEMA cannot fund this action

Is the action an alteration of a structure or facility listed on the National Register of Historic Places or a State Inventory of Historic Places?

Yes ☐ No ☐ Not Applicable ☐

If yes, then this is not substantial improvement and the action may proceed as long as it does not cause any increase of flood levels within the community during the occurrence of the base flood discharge.

Coastal High Hazard Zone

Is the action new construction (i.e. construction of new facility or structure, demolition/ rebuilding of facilities or structures, reconstruction of facilities or structures, replacement of facilities or structures)?

Yes ☐ No ☐ Not Applicable ☒

If Yes, is the action a functional dependent use (cannot perform its intended purpose unless it is located or carried out in close proximity to water) or a facility or structure that facilitates open space use?

Yes ☐ No ☐ Not Applicable ☐

If yes, explain:

If no, FEMA cannot fund this action.

Step 4: Identify Impacts

Identify the potential direct and indirect impacts associated with the occupancy or modification of the floodplains and the potential direct and indirect support of floodplain development that could result from the proposed action (44 CFR Section 9.10).

Is the proposed action based on incomplete information?

Yes ☐ No ☒ Not Applicable ☐

Is the proposed action in compliance with the NFIP?

Yes ☒ No ☐ Not Applicable ☐

Does the proposed action increase the risk of flood loss?

Yes ☐ No ☒ Not Applicable ☐

Will the proposed action result in an increased base discharge or increase the flood hazard potential to other properties or structures?

Yes ☐ No ☒ Not Applicable ☐

Does the proposed action minimize the impact of floods on human health, safety, or welfare?

Yes ☐ No ☒ Not Applicable ☐

Will the proposed action induce future growth and development, which will potentially adversely affect the floodplain?

Yes ☐ No ☒ Not Applicable ☐

Does the proposed action involve dredging and/or filling of a floodplain?

Yes ☐ No ☒ Not Applicable ☐

Will the proposed action result in the discharge of pollutants into the floodplain?

Yes ☐ No ☒ Not Applicable ☐

Does the proposed action avoid the long and short term impacts associate with the occupancy and modification of floodplains?

Yes ☒ No ☐ Not Applicable ☐

Note: If wetlands are near or potentially affected, refer review to an Environmental Specialist.

Will the proposed action forego an opportunity to restore the natural and beneficial values served by floodplains?

Yes ☐ No ☒ Not Applicable ☐

Does the proposed action restore and/or preserve the natural and beneficial values served by floodplains?

Yes ☒ No ☐ Not Applicable ☐

Will the proposed action result in an increase to the useful life of a structure or facility?

Yes ☐ No ☒ Not Applicable ☐

Will the action encroach on the Floodway in manner that causes any increase of flood levels within the community during the occurrence of the base flood discharge?

Yes ☐ No ☒ Not Applicable ☐

Step 4 Remarks:

The proposed projects are not located within a floodplain. Freshwater forested/shrub wetlands are located within the project area. Short-term impacts on wetlands could occur if sedimentation or pollutants were to enter a wetland during or after implementation of the projects. Stormwater runoff from nearby work areas could impact wetlands. The proposed

Step 5: Minimize Impacts

Minimize the potential adverse impacts and support to or within floodplains as identified under Step 4; restore and preserve the natural and beneficial values served by floodplains (44 CFR Section 9.11).

Minimization Measures

Were flood hazard reduction techniques (see NFIP technical bulletins) applied to the proposed action to minimize flood impacts? Note: New construction or substantial improvement of a structure (i.e. walled or roofed building) requires elevation or flood proofing (non-residential), except for listed Historic Structures.

Yes ☐ No ☐ Not Applicable ☒

Identify any flood hazard reduction techniques required as a condition of the grant:

Were avoidance and minimization measures applied to the proposed action to minimize the short-term and long-term impacts on the floodplain?

Yes ☐ No ☐ Not Applicable ☒

Identify minimization measures required as a condition of the grant:

Were measures implemented to restore and preserve the natural and beneficial values of the floodplain?

Yes ☐ No ☐ Not Applicable ☒

Identify any restoration or preservation measures required as a condition of the grant:

Floodway/Coastal High Hazard Areas

Is there a practicable alternative site location or action outside of the Floodway or coastal high hazard area (CHHA) (but within the floodplain)?

Yes ☐ No ☐ Not Applicable ☒

Site Location:

Is there a practicable alternative action outside of the Floodway or CHHA that will not affect the Floodway or CHHA?

Yes ☐ No ☐ Not Applicable ☒

Alternative Action:

Are functionally dependent new construction in the CHHA elevated on adequately anchored pilings or columns such that lowest portion of the structural members of the lowest floor are above base flood elevation? (**Note: The use of fill for elevation is prohibited in the CHHA**.)

Yes ☐ No ☐ Not Applicable ☒

Step 5 Remarks:

The proposed projects are not located within a floodplain. In order to minimize the potential impacts on wetlands, no vegetation removal would be performed near any wetlands, ponds, or rivers and a minimum 25-foot to 150-foot buffer would be placed around these resources,

Step 6: Reevaluate Practicable Alternatives

Reevaluate the proposed action to first determine if it is still practicable in light of its exposure to flood hazards, the extent to which it will aggravate the hazards to others, and its potential to disrupt floodplain values. Second, evaluate if alternatives preliminarily rejected at Step 3 are practicable in light of the information gained in Steps 4 and 5. FEMA shall not act in a floodplain unless it is the only practicable location (44 CFR Section 9.9)

Is the action still practicable at a floodplain site in light of the exposure to flood risk and ensuing disruption of natural values?

Yes ☐ No ☐ Not Applicable ☒

Is the floodplain site the only practicable alternative?

Yes ☐ No ☐ Not Applicable ☒

Is there any potential to limit the scope or size of the action to increase the practicability of previously-rejected non-floodplain sites or alternative actions?

Yes ☐ No ☐ Not Applicable ☒

Can minimization of harm to or within the floodplain be achieved using all practicable means?

Yes ☐ No ☐ Not Applicable ☒

Does the need for action in a floodplain clearly outweigh the requirements of Executive Order 11988?

Yes ☐ No ☐ Not Applicable ☒

Step 6 Remarks:

Other alternatives were considered to address the wildfire hazards within Paradise. The no action alternative would maintain or increase the existing wildfire risk. Alternatives further from wetlands would not address the hazardous fuels and burnt vegetation in close

Step 7: Final Public Notice

Prepare and provide the public with a finding and public explanation of any final decision that the floodplain is the only practicable alternative (44 CFR Section 9.12).

Was notice provided as part of a disaster cumulative notice?

Yes ☐ No ☒ Not Applicable ☐

Was a project specific notice provided?

Yes ☒ No ☐ Not Applicable ☐

If yes, select the type of notice:

☐ Newspaper, name:

☐ Post Site, location:

☐ Broadcast, station

☐ Direct Mailing, area:

☐ Public Meeting, dates:

☐ Other:

Date of Public Notice: TBD

After providing the final notice, FEMA shall, without good cause shown, wait at least 15 days before carrying out the proposed action.

Step 8: Implementation

Review the implementation and post-implementation phases of the proposed action to ensure that the requirements stated in 44 CFR Section 9.11 are fully implemented. Oversight responsibility shall be integrated into existing processes.

Was grant conditioned on review of implementation and post-implementation phases to ensure compliance of Executive Order 11988?

Yes ☐ No ☒ Not Applicable ☐

The following conditions are not reflected in the Scope of Work and are required:

This project is in compliance with the provisions outlined in Section 9.11. No additional conditions are required in the Scope of Work to meet the General Minimization provisions included in Section 9.11 (b) and (c).