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# BRIC 2020 Paradise Recreation & Park District Innovative Wildfire Risk Reduction Buffers (Camp Fire)

Status: Submitted to recipient

## Scope of work

The project Scope of Work (SOW) identifies the eligible activity, describes what will be accomplished and explains how the mitigation activity will be implemented. The mitigation activity must be described in sufficient detail to verify the cost estimate. All activities for which funding is requested must be identified in the SOW prior to the close of the application period. FEMA has different requirements for project, planning and management cost SOWs.

Subapplication title (include type of activity and location)

**BRIC 2020 Paradise Recreation & Park District Innovative Wildfire Risk Reduction Buffers (Camp Fire)**

## Activities

Primary activity type

**Develop or conduct engineering, environmental, feasibility and/or benefit cost analyses**

Secondary activity type (Optional)

**Conduct meetings, outreach and coordination with subapplicants and community residents**

Tertiary activity type (Optional)

**Activities supporting development of applications**

Geographic areas description

**The Project centers around the footprint of the 2018 Camp Fire including the foothill communities of Paradise and Magalia. However, we are quite aware that the Project findings have**

implications statewide and beyond. The project places a special focus on vulnerable fire-prone high risk (steep slopes, high fuels, and strong winds), high-density areas near the Wildland Urban Interface (WUI) where catastrophic fire continues to threaten communities and infrastructure. The project area also encompasses portions of the Feather River Canyon, Pulga, Concow, Yankee Hill, and Butte Creek Canyon, where successful risk-reduction measures will also reduce catastrophic fire risks to nearby communities, including Oroville, Chico, Cohasset, and Forest Ranch.

## Community lifelines

Primary community lifeline

Primary sub-community lifeline

Secondary community lifeline (optional)

## Hazard sources

Primary hazard source

Secondary hazard source (optional)

If Uncategorized please specify

Safety and security

Community safety

Fire

Uncategorized

The principal benefit of this project is the reduction of wildfire risk through the creation of a community-scale wildfire buffer. This nature-based solution provides multiple benefits and enables the community to contend with a wide variety of known and yet unforeseen hazards. For example, the buffers may allow for opportunities to connect roads (allowing for improved evacuation, and public and emergency access), and as regained open space may help attenuate the impact of storm events (delayed run-off to streams and reduced landslide impacts).

Tertiary hazard source (optional)

How will the mitigation activity be implemented?

**This project will scope and refine scenarios for community-scale risk-reduction buffers and will design a network of Resiliency Parks as nature-based wildfire mitigation action for the communities of Paradise and Magalia. The project focuses on a research-supported, proactive investment in community resilience and cultivates the local support required to execute an implementation project. In this scoping effort, we will develop a site-specific feasibility assessment and action plan for the application of strategically located, open space that to reduce wildfire risks, provide comprehensive fuels reduction, improved road connectivity (access for firefights and emergency egress), and an economically sustainable finance strategy to maintain these areas for the benefit of the regional economy. This innovative approach shows much promise and support from the community. This project builds on an innovative approach initiated with other partners during a preliminary study and engagement with a technical advisory committee. The subapplicant has developed strong local, state and federal agency, scientists, and local business and community group partnerships. The project will • Utilize technical analyses to: Refine wildfire modeling; Identify the potential and magnitude of strategically located lands with enlightened management to reduce wildfire risks; Perform a benefit-cost analysis and Explore long-term management funding mechanisms. • Conduct outreach and education to: Assess participation with key landowners (private and public); Provide information to the general public; Engage a Technical Advisory Committee to provide direction on study issues and explore long-term participation. • Commence Development of Land Management Options and a Program Blueprint to: Refine future project designs; Outline implementation; Examine mechanisms for participation, acquisitions, or other entitlements. This scoping Project creates a bridge from the scientific analysis of buffers and coordinated land management to an innovative model for implementing significant risk reduction. A notable deliverable will be a complete subapplication under BRIC to initiate recommended management actions and secure strategically-**

located parcels. The project explores options to reduce risks and provide multiple benefits to the community. We anticipate the approach will yield innovative partnerships and mechanisms (financial and agreements) to meet long-term risk reduction, land management, and financial costs and also effectively reduce wildfire risks. The exploration of a project to meet multiple bottom lines will make risk reduction efforts more robust and opens up creative cost-subsidy opportunities from agricultural, recreational, silvicultural, insurance (exploration of resiliency bonds and community based catastrophe insurance and risk reduction proceeds) and other economic activities. So far, we have developed extraordinary cross discipline and sector partnerships. Funding toward this effort will sharpen that focus and may bring multiple funding sources or in-kind resources from our stakeholders and offer multiple benefits to a community in addition to the benefit of risk reduction. For example, recreational opportunities could provide a local economic boost; partnerships with private and educational institutions may yield cost effective approaches to incorporate agricultural uses (grazing or orchard development), which in exchange for use, provides cost-neutral (or subsidized) fuels reduction and in turn could provide a basis for local food security or agritourism.

What is the scope of work of the proposal? Will it result in a complete project application for future funding opportunities?

This scoping project refines scenarios and actions for community-scale risk-reduction buffers and designs a comprehensive network of Resiliency Parks as nature-based wildfire mitigation action for the wildfire ravaged communities of Paradise and Magalia. The project centers around the exploration, creation, and long-term maintenance of a risk-reduction buffer to protect communities. Buffers show promise that strategically located, landscape-scale, nature-based, open-space buffers may provide a cost-effective measure to mitigate the risk of catastrophic wildfire and provide community-scale protection and multiple benefits. The project footprint focuses on the area impacted from the devastating 2018 Camp Fire. The project builds on the scientific framework developed through an innovative pilot study with The Nature Conservancy. The "Paradise Nature-Based Fire Resilience Project: Final Report (completed by Conservation Biology Institute), demonstrated that identified parcels could provide measurable

**ignition risk reduction and other benefits. This project represents a research-supported, proactive investment in community resilience and cultivates the local support required to execute an implementation project. We will explore and refine the feasibility of reducing wildfire risks from a) strategic acquisition of vacant parcels near the Town boundary; b) land management practices (including the removal or reduction of flammable structures and vegetation); c) vegetation and soil management; and d) coordination and collaboration with public and private landowners on community-scale risk reduction. This project requires community engagement, and detailed benefit-cost analysis and the development of technical information to create a protective buffer to address wildfire threats. Resiliency buffers will be located on and around properties that suffered catastrophic damage during the Camp Fire. Acquisition of these properties will also prevent the rebuilding of structures and re-introduction of risk to human lives in these areas. These high-risk properties threaten the remainder of the community because in the absence of active management, these steep, upwind, areas with poor access are highly flammable and both transmit flames and divert emergency resources from the rest of the Town. Even with modern Wildfire Urban Interface (WUI) building codes, these high-risk properties increase the threat and risk to people and infrastructure within the entire community. Tasks**

**This scoping project accomplishes the following tasks to set for a successful BRIC/HMGP application, and ultimately fund implementation of the proposed mitigation actions: 1) Task 1 – Project Management/Procurement and Startup • Manage project tasks, obligations, and reporting. • Assemble Technical Team: bring together the core team of collaborating partners, including The Nature Conservancy, Earth Economics, a real estate contractor, and wildfire science contractor – to provide support throughout the project on issues including modeling, feasibility, benefit-cost analysis, and landowner outreach; execute cooperative agreements and subcontracts, as necessary. • Convene a Technical Advisory Committee (TAC) to provide feedback and peer review, including vetting of budget and management scenarios, refinement of models, local parameter development, approach to local outreach, knowledge of first-responder practices, feedback on**

**messaging/marketing, and local land use planning and management; TAC will meet periodically throughout the life of the project. 2) Task 2 - Technical Analyses • Refine existing fire models to evaluate multiple ignition scenarios, including a Camp Fire-like event and other more frequent, lower intensity events and compare existing (pre-fire) conditions to a Resilience Parks model to test performance under different ignition scenarios. We will identify scenarios (under different ownership models) to implement innovative open space and nature-based management practices. • Conduct a property analysis of ownership and acreage of land most suitable and cost-effective for risk reduction. We will develop a package of land ownership and incentive options to maximize the impact of actions and maintain risk reduction over time. • Conduct a feasibility assessment of alternative scenarios to inform feasibility – including analysis of scenarios costs, constraints, public acceptance, environmental compliance, and effectiveness of risk reduction and long-term public safety. • Develop a refined Benefit-Cost Analysis (BCA) and collect more detailed data to support refined modeling, cost estimation, and environmental benefits analysis. 3) Task 3 - Action/Implementation Plan • Develop a detailed blueprint for implementing Land Management Options and Program Blueprint • Assemble a Stewardship Technical Team to compile region-specific best management practices (park management, agricultural land use management, other management alternatives...) – potential participants include UC Extension, public land management agencies, large-scale private land managers, local land trusts) for evaluation of long-term management approaches; • Complete management plans for buffer areas and Resilience Park units, which will allow for the application of uniform approaches to the development of management, stewardship, and restoration options for site-specific unit plans to maximize wildfire risk reduction. • Cultivate partnerships with neighboring public and private commercial landowners. Create cooperative agreements that will assure that neighboring land management practices complement the risk-reduction performance of the Resilience Parks. • Develop a menu of real estate options and capacity: evaluate fee acquisition options as well as easements and other real estate alternatives. Match various options with the**

interests of landowners and develop a transaction strategy. This can be folded into the property analysis noted above. • Initiate surveys and work to support environmental compliance on identified properties. • Develop a long-term financial analysis to explore the strategy to support both upfront capital investment and long-term management costs. We are especially interested in examining how a mix of public and private funding may fund mitigation action and long-term maintenance. We will also explore incentives for nearby landowners to ensure that nearby land-uses maintain the effective risk reduction. • Develop future BRIC subapplication, including project peer review to support activities.

4) Task 4 - Outreach and Education • Utilize a diverse Technical Advisory Committee (TAC) to solicit specific feedback from scientists, fire and disaster professionals, and practitioners to better document cross-sectoral knowledge of wildfire risk reduction afforded by managed greenspaces; • Prepare a Community Engagement Plan and translate the technical analysis documents – together with cross-sectoral input from the TAC – into educational materials that are digestible by the public, to maximize local support for Resilience Parks. • Disseminate educational materials, cultivate interest and relationships with selected landowners, and secure commitments from willing sellers; • Continue building support for wildfire risk reduction with other local agency stakeholders and elected officials, and begin the process of integrating the approach into local planning efforts (Long-Term Recovery Plan, Local Hazard Mitigation Plans, General Plans, Camp Fire Forest Management Plans, etc.). We anticipate the result of this scoping effort will be to refine and develop the scientific and community support and a blueprint to implement the benefits of Resilience Parks at the community level. We anticipate this work will result in a complete project application for a future BRIC or HMGP funding opportunity. (Please see problem definition for context)

Who will manage and complete the mitigation activity?

The Paradise Recreation and Parks District (District) will be the lead the project with overall project management, Technical Team leadership, Technical Advisory Committee (TAC) Chair, and project management of partners conducting the required analyses. Contract support includes wildfire model development, marketing

and community engagement, real estate practice. The District will convene and coordinate a partner team and Technical Advisory Committee to develop foundational data, models, and analysis (wildfire risk reduction value, ancillary benefits, benefit-cost analysis, and other feasibility factors), conduct public engagement (public education, planning agency, and landowner outreach, regional land-use and -management coordination), and develop the organizational blueprint and capacity required to implement the long-term ultimate project. The team represents local, governmental, business, educational, conservation, and scientific sectors. Notably, The Nature Conservancy will provide technical support on all project aspects, particularly nature-based mitigation, land protection prioritization, open space management, and collaborative partnerships with public and private neighboring landowners. Additional expertise will be provided by engagement with our TAC. We anticipate a robust process with involvement from the following:  Butte Fire Safe Council  34North  Bureau of Land Management (BLM)  Butte County  Butte Fire Safe Council  CSU Chico; Ecological Reserves; Geographical Information Center; North State Planning and Development Collective  Earth Economics  Melton Design Group  North Valley Community Foundation  Paradise Irrigation District  Paradise Ridge Chamber of Commerce  Paradise Unified School District,  Rebuild Paradise Foundation  Sacramento River Watershed Program  The Nature Conservancy  Town of Paradise  University of California (UC) Cooperative Extension  USDA, Feather River Ranger District

What are you doing to consider other risks in the project area?

An underlying operating principle will be to develop measures that provide overall community resiliency; as discussed above the nature-based mitigation approach proposed here will provide flexible mitigation benefits that will perform well under numerous hazard scenarios. Our community recognizes that natural infrastructure is a component of our overall resilience strategy. The development of green infrastructure around the community and the identification and development of community assets will assist with a robust response to future risks and challenges.

Is there an estimate for when the mitigation activity will take place?

There is considerable urgency in moving forward with this project.



**Much science and analysis have already occurred to aid in prioritizing acquisitions and understanding restoration and stewardship of open space for wildfire risk reduction. This project will lay the groundwork for the implementation of the buffer project. Without We anticipate no longer than 24 months to complete this project and without The Nature Conservancy, and other funders/partners, have already provided good support for this effort. While we anticipate submitting an application for implementation for BRIC funding in 2021, the District has used this science and analysis to identify priority acquisitions. We have discovered numerous willing sellers already. As time passes from the Camp Fire, we believe that opportunities will dissipate and the opportunity for long-term protection will diminish. This scoping project lays the foundation for implementation. We believe that acquisition, restoration, and stewardship activities should start no later than early 2022 and with rigorous planning beforehand, much of the work could be completed in a 3-year period.**

What alternatives will be considered?

**The purpose of this scoping project is, in part, to develop a suite of feasible alternatives for the ultimate implementation project. We anticipate, applying wildfire scenarios to the potential ownership scenarios, at a minimum: 1. Wildfire Scenarios:  A Camp Fire like scenario and  Other more frequent scenarios (defined by weather, slope, and/or fuel-driven wildfire events) 2. Ownership scenarios  No action alternative (Retention of current ownership and practices)  Strategically located buffers and/or the creation of resiliency parks (acquisition for public purposes) around the community and near the Wildland Urban Interface  Hybrid model to examine the combination of acquisition of key lands and the incentives required to develop the buffer across property ownership (this includes management alternatives on public lands and commercial lands that are not part of an acquisition scenario). Intent will be to determine the management scheme that maximizes benefits.**

Do activities being considered align with hazard mitigation plan?

**Yes. The activity quite clearly meets a number of the Butte County Local Hazard Mitigation Plan goals adopted in 2019. In particular, the plan identified actions to: • Develop of a Community Buffer (Rim and Watershed) Park Feasibility Study and Plans (PRPD Action 2). • Enhance and Add (Property Acquisition or Easements) for Existing**

**Parks to Improve Fuels Management, Road Connectivity and Access and Recreation • Expand Fuels Management Projects (Action 8) and watershed protection projects (Action 9). • Study Land-use and Appropriate Park Development in the Concow/Yankee Hill/Feather River Canyon Region (Action 11) Once the project moves into the implementation phase, the future project also supports the following larger County-wide goals: • Goal 1: Minimize risk and vulnerability of the community to hazards and reduce damages and protect lives, properties, and public health in Butte County • Goal 2: Provide protection for critical facilities, infrastructure, and services from hazard impacts. • Goal 3: Increase public awareness of the risk and vulnerability of the community to hazards and promote personal awareness and responsibility • Goal 4: Increase communities' ability to be prepared for, respond to, and recover from a disaster event • Goal 5: Reduce fire severity and intensity in Butte County and surrounding lands • Goal 6: Coordinate land use development with LHMP and General Plan • Goal 7: Increase community resiliency to climate change's influence on disasters**

Additional comments (optional)

**The project will provide opportunity to work with the Butte Fire Safe Council, Town of Paradise, and Butte County to work on upcoming General Plans and the Forest Health Plan. We attached our preliminary study with TNC and CBI on Wildfire Risk Reduction Buffers (Paradise Nature-Based Fire Resilience Project Final Report). We also attached the Town of Paradise Long Term Recovery Plan, a remarkable document that lays out some of the goals for the community (this project aligns well with it) ([https://issuu.com/makeitparadise/docs/2350rptbook\\_final190624](https://issuu.com/makeitparadise/docs/2350rptbook_final190624) )**

## Attachments

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Filename	Date uploaded	Uploaded by	Label	Description
<a href="#">2.Appendix.A.Paradise.Fire.Resilience.Literature.Review.pdf</a>	12/02/2020	defseaff@paradisepd.com	Scope of Work Attachments	Paradise Nature-Based Fire Resilience Project Conservation Biology Institute In partnership with TNC an Paradise Recreation & Parks Distric Appendix A: Literature Review June 2020
<a href="#">1.Paradise.Final.Report.2020.0715.pdf</a>	12/02/2020	defseaff@paradisepd.com	Scope of Work Attachments	Paradise Nature-Based Fire Resilience Project Final Report Conservation Biology Institute In partnership with The Nature Conservancy and Paradise Recreation & Parks Distric June, 2020

Filename	Date uploaded	Uploaded by	Label	Description
<a href="#">3.Appendix.B.Wildfire.Risk.Reduction.Buffer.Design.and.Analysis.Methods.pdf</a>	12/02/2020	defseaff@paradiseprpd.com	Scope of Work Attachments	Paradise Nature-base Fire Resilience Project Conservation Biology Institute In partnership with TNC an Paradise Recreation & Parks Distric Appendix B: Wildfire Risk Reduction Buffer Desig and Analysis Methods June, 2020 Table of

Filename	Date uploaded	Uploaded by	Label	Description
<a href="#">4.Appendices.C.and.D.Notes.Tools..pdf</a>	12/02/2020	defseaff@paradisepd.com	Scope of Work Attachments	Paradise Nature-Based Fire Resilience Project Conservation Biology Institute In partnership with TNC an Paradise Recreation & Parks Distric Appendix C: Paradise TAC Notes and Feedback Appendix D: Land Managemen Tools for Fire Risk Reduction June, 2020
<a href="#">TOP.Long.Term.Recovery.Plan.2350RptBook_FINAL190624.pdf</a>	12/02/2020	defseaff@paradisepd.com	Scope of Work Attachments	Town of Paradise Long Term Recovery Plan, Urban Design Associates. June 2019.

Filename	Date uploaded	Uploaded by	Label	Description
<a href="#">2020.BRIC.PRPD.Problem Definition.pdf</a>	12/02/2020	defseaff@paradisepdpd.com	Scope of Work Attachments	Problem Definition an context related to Scope of Work.

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