



State of California

National
Disaster
Resilience
Competition

Phase II
October 27, 2015

Exhibit B:
Threshold Requirements

[ExhibitBThreshold.pdf](#)

EXHIBIT B – THRESHOLD REQUIREMENTS

The Department of Housing and Community Development (HCD), on behalf of the State of California will follow all applicable laws, regulations, and Executive Orders if awarded, throughout implementation and the grant administration process. This includes but is not limited to laws, regulations and guidance pursuant to Section 3, Fair Housing, Equal Access and OMB administrative requirements and cost principles. HCD has no outstanding civil rights matters or delinquent federal debts. The applicant is not subject to civil rights matters rendering it ineligible for funding under Section III.C.2. of HUD’s FY2014 NOFAs for Discretionary Programs, nor is it ineligible under any other general section threshold.

ELIGIBLE APPLICANT: State of California, Qualifying Disaster Declaration #4158 (The Rim Fire)

ELIGIBLE COUNTY: Tuolumne County

MOST IMPACTED AND DISTRESSED TARGET AREA(S)

The Target Area for California’s application is a Tuolumne sub-county area including the Rim Fire burn and evacuation areas ([Rim Fire Burn Scar, Evacuation Areas and Census Tracts - MID-URN Area Map](#)).

Census Tracts 06109002200, 06109004100, 06109003100, 06109003200, 06109004200

ELIGIBLE ACTIVITY

California’s proposal includes the following eligible activities:

Project Activity	Eligible Activity	Regulatory Citation
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Forest and Watershed Health	Public Infrastructure	HCDA 105(a)2
Biomass Facility & Wood Products Campus	Public Facilities	HCDA 105(a)2
Community Resilience Center	Public Facilities	HCDA 105(2)

RESILIENCE INCORPORATED

As further described in Exhibit E: Soundness of Approach, completion of the plans and activities proposed in the State’s Application designed to increase resilience in local communities, the broader region, and statewide. California has a comprehensive program to address climate change and boost resilience. In 2006, the legislature passed Assembly Bill (AB) 32, the [California Global Warming Solutions Act](#), which requires the state to reduce greenhouse gas emissions to 1990 levels by 2020. In 2009, California was the first state to develop a comprehensive climate adaptation strategy ([2009 Climate Adaptation Strategy](#)). The 2014 update to this strategy, [Safeguarding California](#), identifies risks and resilience needs across sectors. California also incorporated climate change considerations into the [State Hazard Mitigation Plan](#) and the [California Water Action Plan](#). California voters showed further support for our critical resources by approving [Proposition 1](#), a bond for investments to address current drought conditions and develop resilience in the State’s water system. In recognition of the role forests play in delivering clean water to the state's growing



population, a portion of the funds in the bond supports upper watershed health, further advancing protection for vulnerable and critical watersheds and downstream resources.

The State of California will incorporate resilience and create a replicable model for forest and watershed health throughout California and the Western United States. The forest health activities include thinning, fuel breaks, reforestation, biomass removal, rangeland improvements and noxious weed treatments. These activities reestablish carbon storage in living trees, help prevent future fires, secure livestock to protect against erosion and damage to forest infrastructure, reduce invasive species, and provide jobs and revenues to help build strong rural economies. This activity furthers the goals of fostering climate-resilient lands and waters, and managing carbon outlined in the White House's Council on Climate Preparedness and Resilience's [*Priority Agenda: Enhancing the Climate Resilience of America's Natural Resources*](#).

The proposed biomass facility will serve the impacted area, as well as the region, providing a marketable end-use for biomass removed within the county, reducing the need for open burning of biomass in the forest. This facility will further increase community resilience by lessening Tuolumne County's reliance on imported energy, reducing greenhouse gases, and producing jobs in the region.

The two proposed Community Resilience Centers (CRCs) will provide social resilience to Tuolumne and surrounding counties. Tuolumne County is a regional leader in responding to disaster, with the region's only food bank and major evacuation center. Therefore, during emergencies in neighboring counties, they often turn to Tuolumne County for support. The proposed resilience centers will be located in two communities: Groveland and Tuolumne



City. Given the terrain, access to community services is difficult year round, but exacerbated during a disaster. The Tuolumne City location was selected because of its proximity to low- and moderate-income communities, and as a central space within the County. Groveland is the gateway to Yosemite, which receives millions of visitors every year. Groveland is isolated geographically but is a strategic location for providing services to the local residents as well as the adjacent county.

Through the three program pillars, Tuolumne County will address social, economic, and environmental resilience. This combination will serve as a model for rural counties located in California's Sierra Nevada region, and throughout the Western United States.

NATIONAL OBJECTIVE

California has included in this application a request to HUD for a National Objective waiver. The waiver requests that HUD permit the State to use 38% LMI as the definition of Low-Mod Area for projects using the LMA national objective.

As stated below in the Tie-Back section, each of the proposed activities in the Community and Watershed Resilience Program meet the definition of tie-back and therefore, are eligible under Urgent Need. In order to reach the intended low-moderate income beneficiaries, the State would like to carry out the CRC activities under the LMA national objective.

OVERALL BENEFIT

California has included in this application a request to HUD for an Overall Benefit waiver. The waiver requests that HUD permit the State to use 47% of its grant award if both of the



Community Resilience Centers are funded, rather than requiring 50% of all funding being used for the LMI national objective. However, if both CRCs are not funded, the State will need to have the Overall Benefit requirement reduced to whatever portion of funding is awarded for the CRC work.

ESTABLISH TIE-BACK

The qualifying disaster in 2013, the Rim Fire in Tuolumne County, California demonstrates the vulnerability of the State's watersheds, resource-based rural economies, and the fragile and vulnerable relationship between the state's people, economy, and its natural resources. [Eighty-five percent](#) of the San Francisco Bay Area's water comes from within Tuolumne County, so any threat to this water source threatens the economic and natural resources of one of the Country's economic drivers. This region is also representative of large portions of the western states, so this program will have wide applicability throughout the West. Investments made through this program will tie-back to the qualifying disaster. The activities proposed in the State of California's Phase II application directly tie-back to the declared Rim Fire Disaster, with Forest and Watershed health activities taking place within the burn scar and MID-URN area, the Community Resilience Centers within the MID-URN area, and the biomass facility potentially expected to target biomass removal from the Rim Fire burn area.

In the Western United States, the fire season has lengthened and fires have become more frequent and intense due to climate change (Peter Howard, September, 2015). Existing research predicts a 50 percent increase in the area burned in the US by 2050, with particular risk to the Western United States. If we do nothing, California could experience a 36 to 74



percent increase in area burned (Yongqiang et al. April 2014). A wildfire the size of the Rim Fire—one of the three biggest fires in California’s history —results in an uncontrolled release of massive amounts of stored forest carbon and contributes to the state’s greenhouse gas emissions, reinforcing a feedback loop that increases the rate of climate change (Gonzalez et al. July, 2015).

BENEFIT-COST ANALYSIS

The State of California, in partnership with GCR, Earth Economics, and the NDRC steering committee prepared the Benefit Cost Analysis. The NDRC steering committee included: HCD, the Governor’s Office of Planning and Research (OPR), the California Environmental Protection Agency (CalEPA), the California Department of Forestry and Fire Protection (CAL FIRE), U.S. Department of Agriculture Forest Service (USFS), the California Conservation Corps, and Tuolumne County. This group completed the BCA to assess the cost effectiveness of the activities included in each of the three pillars (Forest and Watershed Health, Biomass Facility, and Community Resilience Centers.) The team also assessed the cost effectiveness of the integrated program. The team utilized the structure provided in Appendix H, incorporating best practices in engineering, forest science, and social science to produce a robust BCA for the application.

The Team solicited the expertise of Earth Economics to complete the BCA. Earth Economics completed an economic analysis immediately following the 2013 Rim Fire. This analysis estimated the environmental losses from the Rim Fire as high as \$736 million. The BCA working group conducted meetings relative to each of the three pillars to identify comprehensive lists of the history of hazards associated with each, in addition to evaluating



avoided future costs, damages, and community and social benefits. See [Attachment F](#) for additional detail.

MOST IMPACTED CHARACTERISTICS

Narrative Description of the Qualifying Disaster

The 2013 Rim Fire burned over 250,000 acres in Tuolumne County. The fire destroyed forests, rangelands, tribal lands, public and private cabins and camps, and other forest and rangeland infrastructure – all of which are part of the critical upper watershed for the State’s water supply. The majority of the burn area is in Stanislaus National Forest, but the fire also burned portions of Yosemite National Park and private timber and ranch land. The fire burned for over two months, leading to serious economic disruption to residents and local businesses.

Supporting Data

Public Infrastructure The Rim Fire destroyed permanent public infrastructure, including road systems that provide access in to and out of Stanislaus National Forest. The damage resulted from direct fire impacts, but also as a result of changes in the landscape that caused erosion and landslides that undermined the integrity of the system and wear and tear from ongoing fire recovery efforts. The Rim Fire also destroyed rangelands, fencing, and water troughs that had been in use by cattle ranchers under long-term agreements with the USFS and prevented grazing in the forest. While not an exhaustive list of the impacts, the projects included in the documents referenced below represent **\$2,797,750** in Most Impacted damage to permanent public infrastructure, as well as Unmet Recovery Need.



Impact	Cost Estimate	Source
Roadway and culvert damage	\$1,130,000	USFS-Rim-Roadway/Culvert/Retaining Wall Repair Report
Rangeland infrastructure damage #1	\$1,006,350	USFS - Rim -Range Infrastructure Repair Report #1
Rangeland infrastructure damage #2	\$661,400	USFS- Rim-Range Infrastructure Repair Report #2

Environmental Degradation Earth Economics estimated the environmental benefit losses from the Rim Fire to be in excess of \$100 million, just in the first year following the event, based on estimates of ecosystem services within the burn area before and after the fire ([Earth Economics Rim Fire Report_11.27.2013](#) – page 25, 6. Conclusions). This estimate was calculated using a FEMA accepted and scientifically validated Benefit Transfer Methodology ([Earth Economics Rim Fire Report_11.27.2013](#) – page 4 Preliminary Assessment). This methodology enables quantification of a range of benefits, including open space, public’s willingness to pay for outdoor recreation, water quality, and to determine the costs incurred when healthy ecosystems are degraded. Looking only at the federal land burned, the USFS estimates the following environmental damage in the Forest ([USFS Environmental Degradation Summary Report](#), amounts shown below do not include the infrastructure projects discussed under “Public Infrastructure”):

- Soil and Water: \$3,639,375



- Heritage/Archeological: \$3,054,752;
- Timber: \$117,191,490
- Botanicals: \$9,085,000
- Other Infrastructure: \$1,493,520
- Recreation Revenue losses: \$43,766,779
- **Total Environmental Damage on US Forest Land: \$178,230,916.**

The damage from the Rim Fire has had long-lasting effects on the forests, local communities, and beyond. Local communities, whose economies are closely linked to the health of forests through timber and other wood products, tourism and recreation suffered from business loss and closure, direct public health impacts, and depressed property values. The effects on downstream water storage and supply and the long-term implications for carbon storage have global effects.

XI. MOST DISTRESSED CHARACTERISTICS

Narrative Description

Economically Fragile Area Per current American Communities Survey (ACS) data, the census tract area has an unemployment rate of 15.4 percent, which is 158.4 percent of the national average of 9.7 percent [CA NDRC Target Area Unemployment-Census Tracts](#).

Census Tract	Workforce	Employed Population	Unemployed (%)	MID-URN vs. Nat'l Avg.
06109002200	3,342	2,821	15.6%	160.8%
06109004100	2,471	2,121	14.1%	145.8%



06109003100	2,140	1,777	17.0%	174.8%
06109003200	2,875	2,435	15.3%	157.7%
06109004200	1,487	1,265	14.9%	153.9%
Burn + Evac Area	6,501	5,477	15.8%	162.5%
Burn + Evac + Evac Warning Area	12,315	10,419	15.4%	158.7%

Prior Environmental Distress The Target Area has suffered prior environmental distress due to drought, previous wildfires, and overstocked forests. Most recently, the County has [requested](#) that Governor Brown declare a State of Emergency due to the large number of dead and dying trees in the County. Tree mortality has been exacerbated by drought and beetle infestation. The dead and dying trees pose a hazard to life and safety, but also constitute an enormous fuel load for a future fire. Pre-Rim Fire tree mortality was high due to drought and associated disease, and possibly a changing climate. The dead and dying trees translated into large amounts of fuel, and set the stage for the Rim Fire.

The US Department of Agriculture and National Oceanic and Atmospheric Association’s Drought Monitor Mitigation Map shows that Tuolumne County was under Moderate Drought conditions in August 2012 ([August 14 2012 Drought Monitor Map](#)). Four days before the start of the Rim Fire, a similar map shows that Tuolumne County was



under Severe Drought ([August 13, 2013 Drought Monitor Map](#)). Currently, nearly 40 percent of California, including Tuolumne County, is under Exceptional Drought, the most severe drought ranking used ([Current Drought Monitoring Map](#)), and other than the highest peaks in Tuolumne County, the Target Area in Tuolumne County is and has consistently been under very high fire threat as shown by the [California Fire Threat Map](#). This map is based on 2005 data, which does not include the current drought. After the fire, in addition to direct fire mortality, many surviving trees had been damaged by the fire and died over a period of time. Insect populations increased due to the large numbers of fire-killed trees, migrating onto the surviving stressed trees.

From a regional perspective, the Target Area has experienced regular wildfire events, as shown in the [Tuolumne Burn History Map](#). The 1987 Complex Fire burned 157,000 acres in Tuolumne County, much of which burned again in the Rim Fire. Natural regeneration of trees following wildfires that burn as hot as the Complex and the Rim fires is often insufficient, resulting in type conversion from forest to grass and shrub lands, which are [more susceptible to high severity fire](#) and [store substantially less carbon](#) than healthy forests.

Due to past fire exclusion, declines in timber harvesting and reduced forest management activities, unnaturally dense forests, like the location of the Rim Fire, are common across California and much of the [Western United States](#). Overstocked forests decrease the amount of water absorbed into the soil. In forests with high canopy density, comparatively larger amounts of rain and snow can be captured in the canopy and evaporate rather than making it to the ground and flowing into streams, rivers, and reservoirs ([Bales et al. 2011](#)). Current



forest health and climate change is leading to more frequent and more severe wildfires ([Quantitative Evidence for the Increasing Forest Fire Severity](#), Page 28).

UNMET NEEDS

Narrative Description

Infrastructure As noted in the “Most Impacted” section above, The Rim Fire damaged permanent public infrastructure systems in the forest. Unmet recovery needs provided for threshold include those listed above in “Most Impacted.” The source documentation for these projects are also linked above. The [USFS - Unmet Need-Infrastructure-Sources and Uses](#) for these projects lists the projects, cost estimates and the reason for the gap in financing, which is further discussed and documented above in the “Prior Environmental Distress” section.

Environmental Degradation As noted in Most Impacted Characteristics above, environmental degradation due to the Rim Fire continues to threaten the Target Area. As summarized in the [USFS-Environmental Degradation Summary Report](#), the Rim Fire burn area included 154,430 acres of National Forest lands. The environmental degradation on these lands totaled nearly \$200 million, as discussed in the “Most Impacted – Environmental Degradation Section.” Mitigating these damages will require investments in thinning, reforestation, biomass removal, forest restoration treatments, and sustainable forest management practices. Through 2014 the USFS invested \$134 million in Rim Fire Recovery, and will spend \$6.7 million beginning in January 2015 to support NDRC activities, for a full description refer to Exhibit F. Additional resources are needed to



continue and expand these efforts to mitigate the environmental damages reported in the “Most Impacted – Environmental Degradation” section.

