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AFFORDABLE HOUSING AND NATURAL DISASTERS: A Practitioner's Guidebook



02

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04

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05

CALIFORNIA COALITION FOR RURAL HOUSING

Formed in 1976, CCRH is the oldest statewide association of affordable housing developers and advocates in the nation. Its mission is to improve the living conditions of rural and low-income Californians through the production and preservation of decent and affordable housing and creation of sustainable rural communities. CCRH's members are nonprofit housing developers, state and local government officials, lenders, housing advocates, and social service providers. CCRH achieves its mission through comprehensive programs of training and technical assistance, asset-building, leadership development, community and tenant organizing, research, public education, and public advocacy. CCRH's programs include rural housing capacity development, American Indian tribal housing capacity development, foreclosure disposition and neighborhood stabilization, the Internship for Diversity in Nonprofit Housing, the CCRH Emerging Leaders Program, and the Annual Rural Housing Summit.



06

FORWARD

For those of us who live in rural areas that sit outside California's major cities, natural disasters are woven into the fabric of our daily lives. Even populated areas close to large cities are not immune, despite their more urban features. And while these are not new or isolated occurrences, climate change has caused the increasing frequency of such events to force the natural beauty of our rural homes to go hand-in-hand with natural devastation.

As the North Bay's leading affordable housing nonprofit, Burbank Housing has been headquartered in Santa Rosa, CA for 41 years – meaning that sadly, we've seen our share of disasters. Our communities have evacuated from wildfires during 3 out of the last 4 years. Warm, windy afternoons serve as instant reminders to check our wildfire "go-bags" and prepare for hasty exits at any hour of the day. Lightning storms keep us awake at night, incessantly scanning local news and social media for fire alerts. And should a fire actually spark, most Burbank employees can't help but measure the distance from the fire to our homes and to Burbank's communities, comparing the distance to past wildfires that remain fresh in our memories, like the 2017 North Bay Fires, the 2019 Kincaid Fire, and the 2020 Walbridge & Glass Fires.

But here in the North Bay, we don't just face wildfires. The minute wildfire season ends, and sometimes before, flood season begins. Our communities along the Russian River brace for a very different type of disaster, one that may leave homes standing, but covers them with water, mud and mold. And after the floods end, the droughts begin.

Repeatedly facing natural disasters has caused Burbank Housing to prioritize opportunities that help better prepare rural communities for such events. There is a critical need for rural areas to anticipate, minimize, and thrive throughout disasters, recovering in a socially equitable manner that strengthens community resiliency.

Drawing from the mounting body of rural natural disaster knowledge and experience, the California Coalition for Rural Housing (CCRH), a statewide coalition of over 40 significant rural organizations and American Indian tribal communities, has created this guidebook focused on rural disaster planning and recovery. Burbank Housing is thrilled to participate in this effort, remaining dedicated to ensuring resiliency from natural disasters among all rural communities.



A handwritten signature in blue ink, appearing to read 'Efren Carrillo'.

Efren Carrillo
Board Member, CCRH
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07

PRIMARY AUTHORS	02
ACKNOWLEDGEMENTS:	03
CASE STUDY INTERVIEWEES	03
DISASTER COMMITTEE	04
CALIFORNIA COALITION FOR RURAL HOUSING	05
FORWARD	06
INTRODUCTION	10
CLIMATE CHANGE & NATURAL DISASTERS	13
WATER SUPPLY & DROUGHT	15
FIRES, TREES, & INFESTATION	16
COVID-19, POWER SHUTOFFS & 2020 FIRE SEASON	19
HEAT WAVES & HEALTH	22
MEASURING SOCIAL VULNERABILITIES & IDENTIFYING HAZARDS	23

08

BUILDING & DESIGNING FOR HAZARD MITIGATION & RESILIENCY	27
LEVERAGING COMMUNITY RESOURCES: LESSONS FROM THE AFFORDABLE HOUSING FIELD	39
FEDERAL RESOURCES FOR DISASTER RECOVERY AND COVID-19:	44
FEDERAL EMERGENCY MANAGEMENT AGENCY AND SMALL BUSINESS ASSOCIATION	44
HUD COMMUNITY DEVELOPMENT BLOCK GRANT FOR DISASTER RECOVERY (CDBG-DR) & DISASTER HOUSING ASSISTANCE PROGRAM (DHAP)	46
CONCLUSION	50
RECOMMENDATIONS	51
RURAL HOUSING DEVELOPERS	52
LOCAL GOVERNMENT	52
STATE GOVERNMENT	53
PHILANTHROPIC PARTNERS	54
FEDERAL GOVERNMENT	54

09

CASE STUDY: SELF-HELP ENTERPRISES	56
CASE STUDY: PEOPLE'S SELF-HELP HOUSING	68
CASE STUDY: BURBANK HOUSING	75
CASE STUDY: COMMUNITY HOUSING IMPROVEMENT PROGRAM (CHIP)	81
CASE STUDY: COMMUNITY HOUSINGWORKS	95
CASE STUDY: NORTHERN CIRCLE INDIAN HOUSING AUTHORITY	101
REFERENCES	107

10

INTRODUCTION



Climate change is real and the impact in the past few years from numerous fires, as well as previous droughts, is causing havoc in an increasing number of rural communities throughout California. Disasters are nothing new to rural communities, but the increased number and intensity of rural fires is frightening. Rural California has always been disproportionately subject to natural disasters due to detrimental lack of physical infrastructure; historic under-resourcing; lower levels of staffing and capacity with government and community organizations; geographic isolation; incredible spans of defensible space; and other factors. The fires and subsequent flooding in the past few years have led to a significant loss of rural lives and devastated communities. It is likely that hotter and drier weather in coming years, coupled with a lack of infrastructure and systems of utility companies and organizations, will increase creating the conditions for more fires and other natural disasters. These climate-exacerbated disasters come in addition to the earthquakes, flooding, and mudslides communities in California have always had to prepare for and recover from. There is a critical need for rural communities to be better positioned to plan for, minimize the impact of, and recover from disasters.

This need presents an opportunity to build the capacity of rural communities to engage in disaster planning and recovery more effectively and equitably, to become more adaptable, and able to rebuild stronger. At the same time, rural communities have demonstrated tremendous strength

11

and resiliency in responding to the ‘new normal’ of increasingly common natural disasters. There is a growing body of knowledge and experience that rural communities can draw from to continue to strengthen their resiliency. The California Coalition for Rural Housing (CCRH), a statewide coalition of over 40 significant rural organizations and American Indian tribal communities, has made rural disaster planning and recovery one of the highest priorities of the organization. CCRH is committed to building knowledge, capacity, practice, and resources through advocacy and policy that will enable communities to help prepare for, prevent, and respond to the growing number of natural disasters that are occurring across rural California.



*FIGURE 1: THE FOUR-STAGE DISASTER CYCLE AS
CONCEPTUALIZED IN THE FIELD OF EMERGENCY MANAGEMENT*

12

This Guidebook is intended as a primer on the current state of disaster issues for affordable housing practitioners and means of familiarizing disaster planners with the innovations coming forward in the affordable housing sector. Affordable housing is a critical community resource with its own unique vulnerabilities in the context of disaster risk. At the same time, affordable housing providers can be key stakeholders in all four major phases of the disaster cycle: mitigation, preparedness, response, and recovery (see Figure 1). CCRH members have approached the complexities of disaster preparedness and recovery with the same zeal and compassion with which they provide homes for lower income Californians in rural communities. Increased collaboration between the affordable housing and disaster planning sectors will help protect vulnerable residents and promote equitable disaster recovery throughout the state and nation.



13

CLIMATE CHANGE AND NATURAL DISASTERS



The increase in the atmospheric concentration of greenhouse gases and carbon dioxide has led to steadily increasing temperatures throughout the world. Since the 1970s, the World Meteorological Organization has observed a five-fold increase in natural disasters because of climate change. The fire season in the United States has lengthened by 105 days since the 1970s according to Climate Central (Klein, 2019). Fires also have the negative effect of releasing significant levels of carbon, worsening air pollution and particulate matter across large geographic areas. The rural fires in Northern California in 2017, 2018, and 2019 released particulate pollutants over several hundred-mile radii, causing respiratory challenges for many people, especially those with existing health conditions such as asthma. Across California, over five million people have been diagnosed with asthma. Lower income communities and communities of color, particularly Black and Indigenous communities, disproportionately experience more severe asthma symptoms and higher rates of asthma hospitalizations – which is just one of the many ways natural disasters compound existing racial and income disparities (Milet, Tran, Eatherton, Flattery, & Kreutzer, 2007).

Climate change is increasing the frequency and severity of natural disasters nationwide. Population growth, particularly in vulnerable geographies, and the growing value of property and wealth threatened by these disasters have led to unprecedented economic losses. Natural disasters cost the United States economic damage

14

of more than \$10 billion for the fifth consecutive year (Smith, 2020). For California, weather and climate events that have great economic and societal costs tend to be wildfires, droughts/heatwaves, and floods, all of which are becoming more common and costly in rural communities throughout California. Rural communities face unique challenges including physical isolation; limited government capacity; lack of diversified economies in most places; limited access to health care lack of resources; higher poverty levels; and an aging population compared to urban and suburban communities. Large municipalities are more likely to have robust planning departments and dedicated staff with disaster expertise committed to anticipating and mitigating natural and man-made hazards, but most small towns, and rural regional governments do not. With limited resources, it is harder for local governments to anticipate, plan, and respond to climate change. While high-quality disaster planning, response, and recovery in any area must include robust engagement of residents and community-based organizations, this lack of governmental capacity makes regional assets such as community leaders, resident associations, and local organizations – both private and public – even more critical in rural areas.

In addition to the limited capacity of local governments, rural areas face resource capacity constraints in the broader community which inhibit their ability to respond effectively to disasters. Rural communities are becoming more vulnerable and less adaptable, as discussed further in the Social Vulnerability Index section. The capacity to be adaptable is a critical strategy for anticipating and recovering from natural disasters. Social networks are an important part of

15



adaptability and when they are frayed because of a large disaster that causes displacement, such as the 2018 Camp Fire in Butte County, it takes longer for new capacity and leadership to emerge. Rural communities are home to 14% of the U.S. population, while rural land makes up 72% of the U.S. landmass including parks; publicly owned land; and private land for agricultural and mining interests (Economic Research Service (ERS), 2020). Residents of rural communities are more likely to depend upon climate-sensitive natural resources and activities for their livelihoods, as is in the case in farming and ranching communities. Climate change endangers residents of rural areas directly through the increased incidence of natural disasters and indirectly as land becomes less fertile and natural resources less available.

WATER SUPPLY AND DROUGHT

Climate change has significant detrimental impacts on water supply. Global temperature increases affect rainfall patterns, causing more intense rain to occur in the winter and early spring months and snowpack to decline in higher mountains, with the consequence of less water for residential and agricultural uses. Droughts affect the amount and quality of water for some rural residents, resulting in the need to dig deeper wells, which is costly or altogether unattainable for many families with limited resources.

Lack of access to good drinking water is another challenge due to drought and climate change. There are increasing sources of contaminants in the water including arsenic, which significantly exceeds the standards established by the Center for Disease Control. The lack of safe drinking water is particularly acute in many agricultural regions of California,

16

where major drought and over-pumping by farms have combined to lead to contamination and dry wells, particularly in the Central Valley, the Salinas Valley, and the Coachella Valley. Across California, more than a million people lack access to safe and affordable water, including nearly 100,000 in the Central Valley alone (London, et al., 2018).

Another drought issue is that California Agriculture has had to leave more land fallowed because of lack of water. 2.2. billion acres were left fallow in 2014, and over 12 million trees died due to lack of water. Having adequate water is critical as California's agricultural sector expands and its population grows: Fresno County alone saw its population more than double between 1970 and 2010 (County of Fresno, 2015). Yet now-valuable agricultural land increasingly cannot be farmed due to lack of water. Agriculture interests have been forced to increase the amount of groundwater extractions which lowers the base flow of water for rivers, streams, and ponds. This impacts the natural environment because creeks and pools become disconnected from food web systems affecting diverse life. Low-income families, notably farmworkers, are also impacted by lack of water and often need help digging wells and other subterranean sources of water that are vital to their lives.

FIRES, TREES, AND INFESTATION

Drought and higher temperatures have placed the trees in a considerable portion of the western United States under increased climatic stress, leading to an increase in the frequency and intensity of wildfires (Klein, 2019). Warmer

17



Warmer summer temperatures and reduced rainfall in the Western portion of the United States are projected to extend the wildfire season by 10 to 30% (Brown, Hall, & Wester, 2004). This means that fire season will lengthen from 73 days to 105 and the average duration of major fires will increase from just over a week to more than a month (from 7.5 to 37.1 days) (Klein, 2019).

Another stressor on forests throughout the western United States is the increasing number of Mountain Pine beetle infestations. Also known as “bark beetles,” these native insects’ larvae kill trees in large numbers, particularly Douglas Firs and Ponderosa Pines (Matthews, 2020). Pest management techniques such as removal of infested trees, insecticide, and pheromone-based traps have mitigated infestation somewhat, but as climate change creates drier and hotter weather, bark beetle infestations become more prevalent. These infestations leave brittle, inflammable dead trees in their wake: dry fuel for the next wildfire.

Outdated forest management practices have contributed to increased fires as well. Prior to the 1970s, the U.S. Forest and Park Service focused their efforts exclusively on the suppression of all wildfires (Forest History Society, 2020). This long history of fire suppression led to an overgrowth of trees and brush: too many trees and too much dead wood available to burn when a wildfire does break out. In recent decades, the policy has shifted to allow for prescribed fires^[1] which are set intentionally by professionals and designed to better match natural forest wildfire cycles, improving the ecosystem, and reducing the risk of catastrophic wildfires. In the aftermath of

[1] also referred to as “controlled burns” or “managed burns”

18

the 2017 fires, the California State Legislature increased funding for managed prescribed fires and thinning of trees (Mathews, 2020). Despite this additional funding allocation, controlled burning and tree thinning remain insufficiently funded.

One hallmark of increasing wildfire intensity is that “plume-dominated” fires have become more common (Cappucci, 2020). Plume-dominated fires occur when a fire burns hot enough to disrupt the wind patterns around it (Scott & Reinhardt, 2001). In contrast to “wind-driven” fires which spread mainly in the direction of prevailing winds, plume-dominated fires spread more rapidly and less predictably, often precluding direct fire suppression methods. Plume-dominated fires can generate vortexes with tornado-strength winds, as was the case with the Carr Fire (Lareau, Nauslar, & Abatzoglou, 2018). The Carr fire vortex reached speeds of 143 miles per hour making it dangerous for both the fire fighters and civilians. Civilians need to evacuate immediately if the velocity of a fire is increasing rapidly. Creating a buffer of defensible space between buildings and wildland area through vegetation management is essential because once the fire hits a structure such as a house, the structure and whatever it contains (appliances, gas, oil, etc.) become fuel. Trees and plants will be more damaged the closer they are to a house. Low fire severity habitat helps prevent the spread of fires.

California is experiencing the nation’s greatest housing crisis. The loss of housing in communities affected by wildfire and other disasters produces a multiplier effect on California’s undersupply of affordable housing by creating direct displacement due to reduced housing supply and new demand for housing, which drives up housing costs. These effects echo into surrounding communities, resulting in low- and

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fixed-income residents across rural California facing even greater difficulties finding adequate and safe housing. Disasters also threaten the existing stock of affordable homes. Across California, there are 140,000 units of affordable housing in the wildland-urban interface, vulnerable to fire (Gabbe, Gregory, & Oxlaj, 2020). A comprehensive set of tools and resources supported by local, state, and federal government can better manage the ecosystem to reduce fires and protect housing in California and rural communities in the U.S.



20

COVID-19, POWER SHUTOFFS, AND THE 2020 CALIFORNIA FIRE SEASON

The state of California anticipated an early fire season in 2020 due to the lack of rain and snowpack at only 63% of average level. The 2020 fire season had the potential to be especially dangerous given the COVID-19 pandemic, which meant robust evacuation plans had to be adjusted to minimize interaction between community members, allow for social distancing, and include consideration for handwashing and other preventatives.



FIGURE 2: CPUC HIGH-FIRE THREAT DISTRICT MAP, JAN. 2019.

21

COVID-19 affected the number of fire fighters available to respond to fires and how they interact as a group, since fire fighters needed to be separated within the crew and the crew and when they ate or slept outdoors.

Since 2007, utility companies in California have responded to increasingly common wildfire conditions by regularly implementing public safety power shutoffs when high winds, dry vegetation, and hot temperatures combine to create hazardous conditions (Luna, 2019). Areas with an extreme or elevated wildfire risk (see Figure 2) are more likely to experience shutoffs, which present serious risk to older adults and people with health conditions that require power, such as people who rely on ventilators. Across California, 343,000 residential utilities customers are enrolled in medical baseline programs provided by utility companies to people who depend on power for medical and/or independent living needs and receive advance notice of public safety shutoffs (Luna, 2019). Medical baseline customer databases were not designed as an emergency response tool, however, and include only a fraction of Californians who depend on electricity to remain healthy.

Shutoffs presented an additional challenge while the pandemic necessitated continued sheltering in place and social distancing. As extreme fire seasons become more common, intentional electricity shutoffs are likely to become more common and long-lasting. The needs of lower-income people, people with disabilities, and older adults who are particularly vulnerable during shutoffs should be addressed by stakeholders, including affordable housing providers, and utility companies.

California experienced a record-breaking fire season in 2020. 4,357,863 acres were burned: four percent of the entire land mass of California. There were 9,917 incidents of fire and tragically 33 people lost their lives due to fires. 10,488 structures were destroyed and the estimated cost for the fire season was \$12.79 billion including fire suppression costs.

22

The fire season lasted from July to December with August and September being the height of the fire season, especially in Northern California. A combination of excessive heat, wind, and dryness led to hundreds of fires in August and September, notably on August 16th and 17th. One fire, called the August Fire Complex, burned over 1 million acres of land across seven counties, scorching more land than the entire state of Rhode Island, and was referred to as the first “gigafire” (Lampen, 2020). This terrifying development has huge implications for rural communities throughout the state of California.

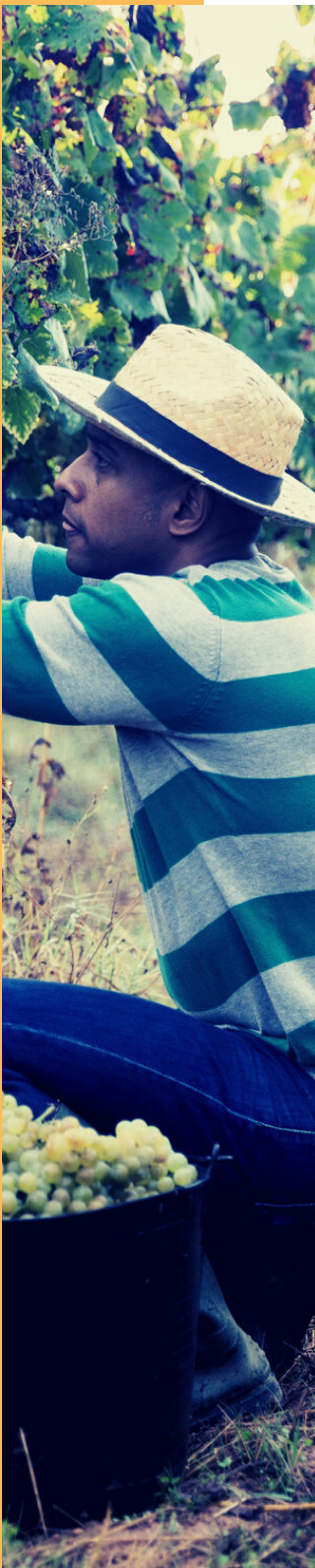


FIGURE 3: CAL FIRE 2020 INCIDENT SUMMARY

HEAT WAVES AND HEALTH

One of the other consequences of climate change is the increase of heat-wave morbidity and mortality which disproportionately affects low-income and people of color due to factors such as lack of social supports; preexisting health conditions; and the availability and expense of residential air conditioning. For example, studies of major metro areas have shown Black people have a 5.3% higher prevalence of heat morbidity in comparison to white people, most of which is attributable to disparate access to air conditioning (Shonkoff, Morello-Frosch, Pastor, & Sadd, 2011).

23



Agricultural workers are particularly vulnerable to heat waves, and 71% of agricultural workers who die from heat strokes are Latino. Higher temperatures increase surface-level ozone, creating harmful respiratory health effects, particularly for people who work outside. California towns including rural areas have the highest ozone levels in the country. These include the communities of Bakersfield, Visalia, Fresno, and Sacramento (Shonkoff, Morello-Frosch, Pastor, & Sadd, 2011).

MEASURING SOCIAL VULNERABILITY AND IDENTIFYING HAZARDS

An extreme adverse event becomes a disaster when it exceeds a community's ability to manage the physical and social disturbance it creates. Thus, a disaster is determined not just by an event's impact, but the surrounding community's physical and social vulnerability. A common definition of social vulnerability is a community's "capacity to anticipate, cope with, resist and recover from the [direct and indirect] impacts of a natural hazard" (Blaikie, Canon, Davis, & Wisner, 1994).

Socially vulnerable populations (youth, people with disabilities, older adults, people of color) and low-income communities are more impacted by natural disaster than affluent white communities. Evidence shows that people experiencing poverty are more vulnerable before, during, and after a disaster. Research on the aftermath of Hurricane Katrina demonstrated that socioeconomic

24

factors had a huge negative impact on mortality rates, housing destruction, health issues, and other indicators. Children and older adults are the most vulnerable age groups in a disaster. People with disabilities are also especially vulnerable (Flanagan, Gregory, Hallisey, Heitgerd, & Lewis, 2011).

The concept of social vulnerability has been refined by the Center for Disease Control into a Social Vulnerability Index (SVI), which can be a helpful tool for rural housing developers to strengthen their case for targeting resources to vulnerable communities. The SVI measures 15 socioeconomic factors:

1. Percent of individuals below poverty level
2. Percent of unemployed individuals
3. Percent of per capita income below median
4. Percent of persons with no high school diploma
5. Percent of persons older than 65
6. Percent of persons younger than 17
7. Percent of persons older than five with a disability
8. Percent of households with no spouse present with younger children
9. Percent of households who are minority
10. Percent of households with people older than five who do not speak English well
11. Percent of multi-family housing
12. Percent of mobile homes
13. Percent of crowding
14. Percent of households with no vehicles
15. Percent of people living in group quarters (SROs, correctional houses, etc.)

The disaster management field conceptualizes a given community's vulnerability to natural disaster with the following formula (Flanagan, Gregory, Hallisey, Heitgerd, & Lewis, 2011):

$$\text{Risk} = \text{Hazard} * (\text{Vulnerability} - \text{Resources})$$

25

- Risk is defined as the likelihood or expectation of loss
- Hazard is a condition posing threat or harm,
- Vulnerability is the extent to which persons or things are likely to be affected, and
- Resources are the assets in place that will diminish the effects of hazards.

Thus, risk is determined by not just the severity of the threat, but by the preexisting strengths and weaknesses in the threatened area. FEMA and partners have collaborated to combine social vulnerability indicators and data on 18 natural hazards into a National Risk Index [2] that evaluates a baseline relative risk measurement for each county and census tract in the United States.

In California, the California Governor's Office of Emergency Services (Cal OES) oversees hazard identification; coordinates mitigation planning at the state and local level; and distributes hazard mitigation funding. CalOES provides the MyHazards[3] mapping tool to help individuals be informed of local hazards and take action to become better prepared for disasters. CalOES also has the mapping tool MyPlan[4] geared towards the emergency management staff and planners who create state-mandated Local Hazard Mitigation Plans (LHMPs). Both mapping tools and LHMPs can help affordable housing providers and other community members identify a site's vulnerabilities to both major natural and man-made hazards, as well as associated mitigation strategies to consider in project scoping. Keeping LHMPs up to date can be a challenge for rural jurisdictions with low staff capacity,

[2] Available at <https://hazards.geoplatform.gov/portal/apps/MapSeries/index.html>

[3] Available at <https://www.caloes.ca.gov/cal-oes-divisions/hazard-mitigation/myhazards-internet-mapping-tool>

[4] Available at <https://www.caloes.ca.gov/cal-oes-divisions/hazard-mitigation/myplan-internet-mapping-tool>

26

particularly as climate change subjects regions to new types of disasters and increasing disaster severity. Yet up to date LHMPs are critical: to remain eligible for most FEMA assistance, jurisdictions must update and re-submit their hazard mitigation plans to FEMA every 5 years (FEMA, 2021).

Rural communities are at greater risk of natural disaster at every stage: more likely to include geographies where hazards are greater, such as fire areas; more likely to be socially vulnerable; and less likely to be well-resourced. Vulnerable communities need additional types of support to recover. Considering this disaster management risk equation and the idea of social vulnerability underscores the need to improve communities' socioeconomic conditions through all four phases of the disaster cycle, in mitigation, preparedness, response, and recovery. Doing otherwise leaves vulnerable populations at risk of even greater harm.

“By balancing awareness of hazards and vulnerabilities with increased access to and awareness of assets, we can change the social vulnerability equation for rural Californians.”

Given the prevalence of hazards and vulnerable populations across rural California, the remainder of this Guidebook focuses on mitigation and resiliency strategies for affordable housing providers; resources available to communities identified by studying exemplary disaster planning and response; and recommendations for stakeholders at all levels about building on available assets. By balancing awareness of hazards and vulnerabilities with increased access to and awareness of assets, we can change the social vulnerability equation for rural Californians.

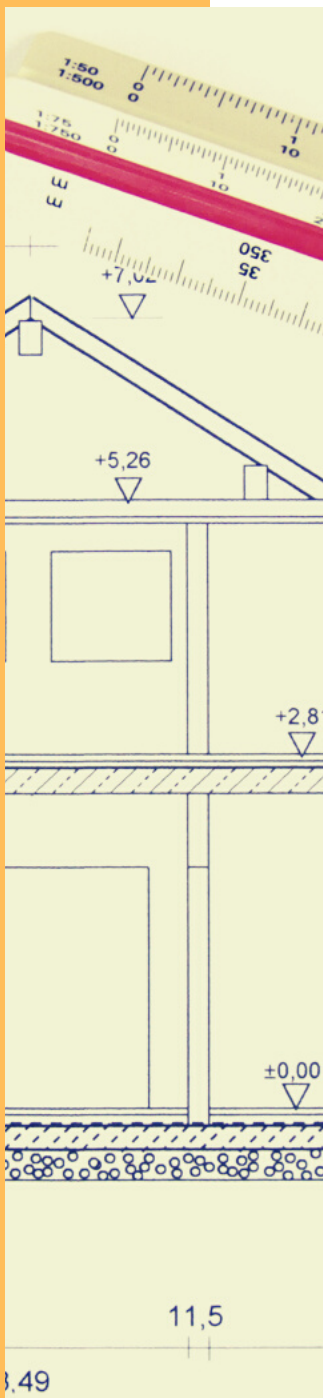
27

BUILDING AND DESIGNING FOR HAZARD MITIGATION AND RESILIENCY[5]

Building codes play an important role in protecting communities from natural disasters by making structures more resistant to hazards. The International Building Code (I-Code), a model building code which has been adopted as basis for code standard by most jurisdictions in the United States, has included hazard-resistant provisions since its inception. FEMA develops recommendations for making building codes such as the I-Codes more hazard resistant based on the observations of Mitigation Assessment Teams. FEMA also promotes the adoption of hazard-resistant building codes and incentivizes adoption through voluntary programs such as the National Flood Insurance Program, through which compliant jurisdictions can achieve discounted flood insurance premiums (FEMA, 2020). FEMA's building code work has focused primarily on hurricanes, earthquakes, floods, and wind, rather than fires.

In 2018, the International Code Council (ICC) published the International Wildland-Urban Interface Code as an addition to the I-Codes (IIC, 2017), providing a model code to mitigate the risk from wildfires to wildlife, life, and property in areas where human developments abut undeveloped land with more vegetation and forests.

[5] This section draws extensively from some research that, CCRH Executive Director, Dr. Robert Wiener has done in partnership between California and New Zealand affordable housing building and design leaders. Both locations share similar climate and topography as well as being active earthquake zones.



28

“FEMA estimates that over a 20-year period, cities and counties with modern building codes could avoid at least \$32 billion in losses from earthquakes, flooding, and wind, when compared to jurisdictions without modern building codes. Yet across the nation, only 35% of counties, cities, and towns have adopted modern building codes (FEMA, 2020).”

Development in the WUI is at higher threat of damage from fire. The ICC's model and other WUI codes supplement a jurisdiction's other codes, including fire code, building code, land use code, and zoning code (National Fire Protection Association, 2013). The major elements of a typical WUI code include:

- a. Structure density and location with setbacks to minimize interface.
 - b. Building materials and construction- roof assembly and coverings, eaves, vents, gutters, exterior walls, windows, and non-combustible materials.
 - c. Vegetation management- tree trimming, spacing, and pruning under tree canopy.
 - d. Emergency vehicle access- driveways, turnarounds, emergency access roads, marking routes, and property addresses in rural communities.
 - e. Water supply- ground water sources, and adequate supply of water.
 - f. Fire protection- automatic sprinklers, spark arresters, and propane gas storage.
- (Colorado Department of Local Affairs, 2018)

Communities that adopt updated building codes to reflect natural hazard risks and enforce those provisions are more resilient and can realize substantial savings. Adoption of modern codes saves \$11 for every \$1 invested (National Institute of Building Sciences, 2019). FEMA estimates that over a 20-year period, cities and counties with modern building codes could avoid at least \$32 billion in losses from earthquakes, flooding, and wind, when compared to jurisdictions without modern building codes. Yet across the nation, only 35% of counties, cities, and towns have adopted modern building codes (FEMA, 2020).

29



Whether operating in a jurisdiction without modern building codes or seeking to exceed baseline code standards, affordable housing providers can mitigate potential damage from fires and other disasters to current and future affordable housing developments of all types through efficiencies across four domains: location, design, construction, and operation.

Location efficiencies – Where buildings are sited makes a huge difference in how they respond to natural disasters. Location efficiencies are important for new construction but can also be adapted to existing housing. Some of the major efficiencies and strategies include:

Brownfield mitigation – Brownfield mitigation is an essential prerequisite for safe and healthy housing. Environmental toxins need to be minimized and if a site has many compounding toxic substances, pollutants, and/or contaminants (e.g., underground oil storage, asbestos), organizations should look for a new site for the development. The predevelopment costs will rise significantly with extensive mitigation.

Geological soil engineering – The analysis of soil could identify potential problems including sinkholes and rockslides. The project will need to be relocated if the area is susceptible to sinkholes or landslides.

Evacuation routes and emergency services – The major tragedy with the Camp Fire in late 2018 is that many people could not escape the fire and died as a result. There need to be multiple evacuation routes both within the development as well as outside the development. The same is true for access routes for emergency service vehicles, notably the fire departments.

30

Avoidance of:

Active flood plains – Geological surveys will help identify active flood plains with the caveat that climate change is creating conditions both for more intense rain that could lead to flooding and drought in other locations.

Active earthquake and volcanic zones – California is laced with active earthquake faults. Multi-family housing and single units should use the most current earthquake design standards and ensure that the building is braced and bolted to ensure minimal damage. Adoption of the 2018 International Residential Code (IRC) and International Building Code (IBC), the model building codes developed by the International Code Council (also known as the I-Codes), versus codes represented by 1990-era design, has a 12:1 cost to benefit ratio when it comes to earthquake hazard mitigation (Multi-Hazard Mitigation Council, 2019).

Frequent atmospheric events – This includes hurricanes, tornados, severe winds, and flash floods. The last two impact California and flash floods can be very damaging especially in arid climates where the land does not absorb water from floods.

Proximity to unprotected wood burning areas – Certain types of wood can be very flammable such as Eucalyptus trees and pines damaged by drought and/or bark beetle infestations. Damaging fires can result easily from these conditions.

Proximity to exposed/unsecured hill sites – Both landslides and fires can result from unsecured hill sites that have not been properly maintained. Locations with steep land that has limited foliage and is saturated with water are particularly prone to landslides. Due to community opposition to affordable homes, major affordable housing projects can be more likely to be located near these sites.

31

Proximity to rising water – Properties built near rivers can be vulnerable to water. There have been several major floods along the Russian River in Sonoma County in recent years: Burbank Housing has adapted by building housing that is well above the flood plains. Rivers in the Central Valley and foothill regions have the potential to flood as a result of melting snowpack and heavy rainstorms at the same time.

Design Efficiencies – There is a correlation between location and design efficiencies for buildings since design is derived from location. Design efficiencies can be considered as new construction is planned or as a part of retrofitting existing housing. Well-considered design choices will often be effective in making a structure more resistant to multiple hazards: good insulation protects against extremely high and extremely low temperatures; wider hallways designed to help residents evacuate more quickly proved effective at reducing residents' COVID-19 exposure through enhanced ventilation as well. Some of the major design elements to consider for mitigating natural disasters include:

Location – Open pattern pedestrian and vehicular circulation is essential so that residents can quickly evacuate, particularly families with young children and adults with physical mobility challenges.

Site Ingress and Egress – Effective site ingress enables residents to evacuate quickly with support from staff. Residents need to be able to get out of their unit as quickly as possible, so location of door and exit is critical. Residents need to leave potentially dangerous situations in minimal time and know where to go. Staff and evacuation personnel can assist residents in leaving the property in a safe and timely manner. Practice Drills are critical to ensure residents know where to safely assemble and get to the best and quickest evacuation routes.



32

Access for emergency response vehicles, personnel, and equipment – Driveways, parking lots, and roads must facilitate quick access for emergency response vehicles and personnel, since mere seconds could be critical in helping a resident facing a potential health or environmental disaster. Design features should consider the size of emergency vehicles that may be needed for a potential disaster. In addition, design of a residential building must consider the ability to get emergency response apparatuses to help people from ladders to stretchers. This is best achieved through open space and minimal steps.

Units per building, entryways, and floors – Sufficient entryways for the given number of residents and floor area are important for providing escape opportunities for residents. Residents with mobility limitations should not have to navigate long distances or long exit routes. Exits should be located in several places on any major floor. Consult emergency responders regarding where to place fire escape(s). Number and placement of stairwells and exits are critically important in efforts to speed up exiting a building.

Raising buildings – Buildings that are near flood zones, rivers, and other bodies of water should be elevated to minimize damage from rising water. Water causes a myriad of damage to floors and walls. Water damage can lead to negative health effects: mold is a major asthma trigger, and lower income children and older adults are disproportionately likely to have asthma. In some cases, more cost-effective retrofits can resolve flooding problems, such as sealing off the stairwells to underground parking with metal doors.

Hazard-mitigating design choices must be balanced against other design goals. In particular, as developments become denser and transit-oriented, incorporation of sufficient egress space for both people and vehicles can become a challenge. Disaster hazard is an important component of context-sensitive density. These

33



challenges can also be met with partnerships with transportation providers, discussed in more detail below. Any dichotomy between resiliency and density is false. With consideration and creativity, all communities can become sustainable and holistic.

Hazard-mitigating design choices must be balanced against other design goals. In particular, as developments become denser and transit-oriented, incorporation of sufficient egress space for both people and vehicles can become a challenge. Disaster hazard is an important component of context-sensitive density. These challenges can also be met with partnerships with transportation providers, discussed in more detail below. Any dichotomy between resiliency and density is false. With consideration and creativity, all communities can become sustainable and holistic.

Construction Efficiencies – Affordable housing construction faces several challenges in rural California due to an array of potential disasters including earthquake, fire, drought, mudslides, and floods during the rainy season. The construction process needs to consider potential disasters in the building or renovating of safe and quality housing. The major construction efficiencies include:

Earthquake fortification – A considerable portion of California is in an active earthquake zone. New construction must meet stringent earthquake standards and existing buildings need to be braced and bolted so that the foundation does not collapse during an earthquake. Earthquake insurance mandates that buildings meet earthquake codes.

Solid footings and foundations – The foundation must be braced firmly in the ground with solid footings in earth that

34

has stable bedrock. River basins and sand are not a place to locate a new housing development.

Fire-resistant noncombustible materials – Use fire resistant building and roofing materials such as fire-retardant wood, gypsum boards, brick, concrete, silicate sodium, and mineral wood. These materials and others will help prevent internal fires and external fires from causing severe damage. Harden water and sewer line infrastructure by minimizing plastics which degrade and leech chemical contaminants such as benzene into drinking water after exposure to high temperatures (Isaacson, et al., 2021).

Durable, non-degradable materials – These materials will reduce the likelihood of fire as well as negative health consequences including off-gassing; formaldehyde; certain types of pests; and mold and moisture leading to asthma.

On-site drainage system and grades – Water can cause a lot of damage if there is not an effective drainage system to pull the water away from the house and its foundation. Drainage systems are especially important on slopes where water can run down quickly during major rainstorms.

Drought resistance measures – These measures are of growing importance with California experiencing drought conditions for most of the past decade. Effective drought measures include low-water use showerheads and toilets; flow limiters on faucets; high-efficiency drip irrigation; on-site water storage and recycling; and native plants and landscaping. Plants which are indigenous to unique climates in California serve to save water and prevent erosion or other types of soil loss. Succulent plants from other dry regions such as parts of Mexico and Southern Africa also tend to be drought resistant as well.

35



Operation Efficiencies – Operation efficiencies are invaluable for property management, maintenance, and asset preservation in preventing and mitigating major natural disasters. The important operational efficiencies include:

Contingency planning – Most disasters are not predictable in terms of occurrence. Contingency planning is focused on creating options and scenarios in the case of a disaster to allow the organization to respond in a nimble and thoughtful way that may prevent serious injuries and fatalities. Contingency planning can be incorporated into a disaster response strategy to allow for new options and creative thinking during and after a disaster.

Alternative shelter for evacuees – For affordable housing providers, contingency plans might include familiarizing themselves with potential shelter sites for residents. Some residents can live with relatives nearby, but many other residents will need to be housed in temporary shelter until they can return. The Red Cross and other organizations can help identify and secure shelter for some of the residents. Securing lodging for residents is a major challenge. Some non-profit and for-profit developers may be able to provide some temporary shelter. The goal should be to house as many residents as possible within 25 miles, especially families who have children in schools.

Transportation options – In affordable housing communities where personal vehicle ownership is less likely, as with transit-oriented developments, identifying transportation options in case of an evacuation is critical. Approaches include locating EV rideshare infrastructure on-site, basing vanpools in affordable housing communities, coordinating resident carpool networks, and partnering with transit agencies.

36

Disaster response training and emergency planning for residents – Residents need to know where to go, what to bring if they have time, and where they can stay if their unit is damaged. Helping residents develop individual emergency plans can also help identify the strengths and vulnerabilities across a development's community: who will need additional help to evacuate? Who has access to a personal vehicle? The more disaster response training provided, the greater the likelihood people will know where to go and what to do and, importantly, how to help others that are less certain or have more limited physical and mental functions.

Special accommodations for older adults and people with disabilities – The American Disability Act (ADA) established a framework for enabling people to live in safe homes and neighborhoods. The concepts behind the ADA of universal access design and safety features can be applied to helping residents with disabilities evacuate a facility in a quick and safe manner.

Technology – Technology is critical for reaching residents and stakeholders during and after a disaster. Residents, resident services, and other key stakeholders (such as the Red Cross and emergency responders) need access to technology. Technology and infrastructure become more important when rural housing projects are dispersed throughout a large geographic area.

“*Technology training and resources in multiple languages, notably Spanish, are vital in rural communities throughout California.*”

Technology training and resources in multiple languages, notably Spanish, are vital in rural communities throughout California. The need for timely and accurate translations of disaster warning and information was vividly illustrated during the 2017 Thomas Fire. Advocates raised concerns that Ventura County's disaster readiness website and evacuation warnings relied on an automatic translator that made errors such as translating the “brush” in brush fire into a word that suggested “hairbrush” rather than “brush wood,” creating confusion and delaying critical evacuations (Wilson, 2017).

37

This incident prompted State Senator Hannah-Beth Jackson to introduce Senate Bill 160 directing counties to make their emergency plans more culturally competent by interpreting all emergency communications, including community groups in emergency planning, and using culturally appropriate disaster readiness resources. SB 160 went into effect in 2020.

Disaster-mitigating maintenance – Many elements of property maintenance can also mitigate the severity of a disaster event. For example, keeping roofs and gutters clear to reduce fire hazards and keeping drains clear in case of floods. Removal of dead trees and thinning overgrown trees and brush to create defensible space will also reduce wildfire risk.

Close coordination with disaster responders – Rural housing and community developers are not in the disaster business, but they need to understand it and have strong relationships with disaster response organizations. The more the Red Cross and early responders know about specific affordable housing developments and their emergency strategies, the more effective they will be evacuating residents especially those with limited mobility.

Relocation assistance – Relocation resources are needed for both residents and the affordable housing developers. These funds can be from a combination of private insurance, state, and federal disaster assistance. One of the challenges is that FEMA dollars and state and other federal funds can take a long time to be deployed.

Insurance claims assistance – Disaster insurance is essential for both non-profits and individual homeowners. It is also of particular concern for affordable housing providers who assist lower income families with homeownership through self-help and other programs to ensure their residents stay housed. Private insurance dollars are usually first to become available, followed by state and federal dollars. Ensure residents are familiar with and availing themselves of the FEMA

38



Disaster Recovery Centers[6] that provide information housing and rental assistance; help with FEMA assistance application; and give insurance advice.

Plan for rapid re-housing – Rural affordable housing developers in California have started developing new housing initiatives in response to the fires of 2017 and 2018. Several rural housing developers including CHIP and Burbank Housing have ramped up their development capacity to address growing housing shortages resulting from disasters. It takes time to build affordable housing, so the sooner the plans, permits, and designs are ready, the sooner projects can be completed, and residents re-housed in their former communities.

Emergency fire lanes – Emergency fire lanes are an essential design, construction, and operational prerequisite for protecting residents of affordable housing. The fire lanes need to be open and not congested, since emergencies can happen at any time. There needs to be adequate space to evacuate people with mobility and other physical challenges and take them to hospitals or shelters depending upon their circumstances.

[6] FEMA Disaster Recovery Centers (DRCs) are easily accessible facilities and mobile offices set up in a community after a disaster.

LEVERAGING COMMUNITY RESOURCES: LESSONS FROM THE AFFORDABLE HOUSING FIELD

a. Essential role of affordable housing community development in preparedness, planning, and recovery – The need for the production and preservation of affordable housing in a rural area cannot be overstated. There is not a large supply of housing in rural areas and affordable housing is at a particular premium, especially for vulnerable populations. Ensuring an adequate supply of affordable homes prior to disasters, including transitional and permanent housing for vulnerable populations, prevents thousands of low-income community members from becoming homeless in the wake of natural disasters. Production and provision of affordable housing is both a homelessness prevention and disaster preparedness strategy.

Absent a sufficient housing supply, disasters lead to displacement as well as homelessness. People who lost their housing in the Camp Fire in some cases had to move hundreds of miles away. While Paradise was the largest community impacted, there were significant losses in the neighboring town of Magalia and smaller communities such as Concow and Yankee Hill. CHIP and Northern Circle are CCRH member developer organizations that lost housing because of recent fires in Butte and Mendocino Counties.

The affordable housing developers in the case studies included in this report have done significant planning and preparation for potential disasters. Burbank Housing had a detailed evacuation plan for their affordable housing developments including even the creative use of boats when



Affordable
Housing

40

the Russian River overflows during major winter rainstorms. Housing and community revitalization are a critical elements of disaster planning, preparedness, and recovery – and community-based development organizations often have the lead role to play in rural communities. Each of the case study respondents who have been involved in recent fires have ramped up their housing production. They are doing more affordable housing production than before, in part to respond to the significant loss of housing in these communities.

There is also the issue of long-term recovery and rebuilding. The American Red Cross, Salvation Army and others are focused on short-term disaster and recovery: it is the affordable housing and community development organizations that are in it for the long-term recovery and community building.

b. Stabilizing the affordable housing and community development organizations – Affordable housing and community development organizations need to have their own disaster plans so that the records and systems are preserved in case of a disaster. In flood country, it is important to have vital records and systems on the second floor of a building. In case of a fire threatening the headquarters of an organization or major affordable housing developer, the organization will need a plan to either fireproof the records and systems or be able to move the materials quickly to a safe location. Staff members need to be taken care of so they can help others recover from natural disasters. The staff need to be accessible to where the disasters are likely to occur so they can help with the recovery. Each housing complex needs to have clear evacuation plan for the residents especially for young children, older adults, and people with disabilities. These plans need to be disseminated to and practiced with the residents to ensure their understanding of how and ability to execute in a disaster.

Accessing critical funding is also important during the recovery phase. The response to COVID-19 has made new funding available

41

and often coupled it with emergency services support. CCRH has been able to capitalize a COVID-19 Rural Rental Housing Emergency Assistance Program to support food, health, education, and critical income needs for vulnerable residents of affordable housing communities and in the surrounding communities.

c. Accessing financial resources for planning and recovery – One of the strengths of affordable housing and community development organizations is their ability to access diverse public, private, and civic funding sources, as well as their ability to generate their own resources. This has proven especially true during the COVID-19 pandemic: CCRH members have been able to raise funds from local United Ways, Community Foundations, health systems, and corporate partners including Pepsi Cola. This creativity and flexibility are key as federal resources vary in how quickly they reach communities. While FEMA and USDA dollars are deployed relatively rapidly, this CDBG-DR programs, which are the primary source of funding for housing, often have lengthy delays. These delays mean it is critical to have funds or loans available from Community Development Financial Institutions (CDFIs) who serve rural communities throughout California.

d. Collaboration and partnership –All of the case study interviewees spoke to the importance of collaboration and partners in disaster recovery, and notably in COVID-19 response. These partners helped residents recover from fire and drought and provided essential services during the COVID-19 outbreak including food, water, mental health, health, and protective gear. The array of partners has been quite diverse, from traditional ones like United Way and school systems, to more non-traditional partners like corporations. County Offices of Emergency Services (OES) are an especially pivotal partner for affordable housing providers seeking to make their communities hazard resistant – case study interviewees mentioned several instances where a local OES was able to make or break their disaster planning efforts.

42

The unexpected and potentially overwhelming magnitude of COVID-19 made organizations more receptive to partnerships that could bring needed services and supports to low-income residents to help them survive the pandemic. People's Self-Help Housing Corporation (PSHHC) partnered with local school districts to have free and reduced meals dropped off at major PSHHC residential, education, and recreation facilities. Self-Help Enterprise (SHE) staff delivered gallons fresh water to local residents, paid for by Coca Cola and other corporate sponsors. Faith-based organizations have also been involved in providing emergency services and food to residents in CCRH member affordable housing complexes as well as self-help housing.

e. Mutual Aid Agreements – Disasters can overwhelm the resources and response capabilities of a single jurisdiction. To lessen the risk of delay and consequential risk of loss of life and property, government agencies establish mutual aid agreements that prepare for a quick and effective coordination and deployment of resources at scale. Mutual aid agreements codify the terms for how one party will provide resources to another party. These resources can include but are not limited to experienced personnel, facilities, equipment, and supplies (FEMA, 2017). Mutual aid agreement can support many activities before, during, and after the natural disaster.

Mutual aid agreements exist in various forms among and between all levels of government to authorize mutual aid between two or more neighboring communities, between all jurisdictions within a state and between states. The California Office of Emergency Services (Cal OES) divides California into six mutual aid regions, organized into three administrative regions: Inland, Coastal, and Southern[7]. The mutual aid system is one component of California's Standardized Emergency Management System (SEMS), which CalOES monitors and integrates with the National Incident Management System (NIMS) (CalOES, 2020). This statewide framework formalizes mutual aid systems for fire and rescue; law enforcement; coroners; and other disciplines.

[7] Region maps available at <https://www.caloes.ca.gov/cal-oes-divisions/regional-operations>

43

Local jurisdictions must be familiar with the foundational support offered by the statewide system. Localities can also create additional mutual aid agreements with and between private agencies (e.g., hospitals, ambulance companies), nonprofit organizations, and other community partners. Those working on disaster preparedness should consider community-wide assets and capabilities and establish written agreements that facilitate access to potentially needed resources.

f. Resident involvement in planning, response, and recovery –

Residents have a better understanding of their needs and priorities than property management staff. Their voices need to be prioritized in disaster planning. Affordable housing developers have engaged residents in planning for potential natural disasters in many ways. Prospective residents can weigh in on details such as stair placement and evacuation routes for developments as they are designed. Residents of established communities have useful feedback on communication systems, especially for non-English speakers, and how to disseminate information about how to evacuate and to where.

COVID-19 has presented a series of new challenges given shelter-in-place and social distance. Technology has become a more important medium for information sharing, making it critical that residents have access to technology to help them receive basic services. Some residents have limited computer knowledge, while others do not have internet access, so computer training and access to computers in large facilities is important for addressing social isolation and access to services. Residents must have the ability to weigh in on what services are needed during and after a disaster and/or pandemic.

44

FEDERAL RESOURCES FOR DISASTER RECOVERY AND COVID-19

Federal Emergency Management Agency and Small Business Association[8]

The Federal Emergency Management Agency (FEMA) was established to help individuals and communities recover from natural disasters. State Governors must request that the federal government declare an area a natural disaster to allow the deployment of federal resources through FEMA, the Small Business Administration (SBA), Department of Agriculture, and other agencies. The President must approve and designate the areas. FEMA provides both public and individual disaster response.

FEMA's Individuals and Households Program (IHP)[9] provides financial and direct services to eligible individuals and households affected by a disaster, including:

1. Rental assistance or reimbursement of hotel costs, as well as direct leases.
2. Repair or replacement funding for owner-occupied homes, designed to cover the gap between insurance and cost to renovate or rebuild.
3. Direct temporary housing through the provision of FEMA Manufactured Housing Units (MHUs)[10] for up to 18 months.
4. There is also assistance for medical expenses, childcare, and other supports.

To apply for and receive the maximum level of FEMA assistance as an individual or a business, disaster victims must first apply to an SBA loan for residential/small business recovery.

[8] The Federal Resource section draws heavily from the work of the National Low-Income Housing Coalition Disaster Housing Recovery Coalition (DHRC) and several of their reports.

[9] <https://www.fema.gov/assistance/individual/program>

[10] Despite the colloquial use of "FEMA trailers" to refer to this temporary housing, FEMA's direct housing policies do not include the use of recreational vehicles or trailers. FEMA only provides HUD-approved MHUs for temporary housing.



45

Individuals who have been impacted by a natural disaster are required to fill out an application online or in person at a designated Disaster Recovery Center. The application process is challenging for several reasons: outreach is often in English and some families do not have English-speaking capability; people often lose or can't find documentation in the aftermath of a disaster; immigrants and refugees often lack official documentation; undocumented immigrants are ineligible, people experiencing homelessness are not eligible for assistance since they don't have an official residence; transportation assistance is not available; and many low-income employees do not have flexibility and are essential workers who must remain close to their work. Applications can be rejected for minor administrative reasons and while the rejections can often be corrected, users report navigating the correction process is difficult, confusing, and time consuming.

46

HUD COMMUNITY DEVELOPMENT BLOCK GRANT FOR DISASTER RECOVERY (CDBG-DR) AND DISASTER HOUSING ASSISTANCE PROGRAM (DHAP)



The U.S. Department of Housing and Urban Development (HUD) provides flexible grants to help cities, counties, and states recover from Presidentially declared disasters. CDBG-DR funding is subject to the availability of supplemental Congressional appropriations. CDBG-DR grants aim to rebuild disaster affected areas, particularly low-income communities that otherwise might not recover due to limited resources. Like all CDBG funds, 70% of CDBG-DR funds must be used for to benefit low- and moderate-income residents, unless a waiver is granted for a lesser percentage. Eligible activities include both rehab and new construction of housing; infrastructure; and economic development including job training and small business loans. The California Department of Housing and Community Development (HCD) has CDBG-DR funding from 2017 and 2018 wildfires. The State of California was allocated \$212,374,000 in CDBG-DR funds for the 2017 fires, \$124,155,000 of which is intended to address unmet recovery needs and \$88,219,000 is to be used for preparedness and mitigation needs, while the 2018 allocation totaled \$1,017,399,000. Funding can only be spent in the relevant year's federally declared disaster areas and 80% of the total allocation must be spent in the designated most impacted and distressed areas. Details on the counties covered by these designations and the Action Plans associated with each CDBG-DR tranche are available on HCD's website[11]. In 2018, the CDBG Mitigation (CDBG-MIT) Program was created to support disaster-impacted communities in increasing their resilience to disasters and reducing their long-term risks.

Disaster Housing Assistance Programs (DHAP) are coordinated by the local Public Housing Authority. DHAP is aimed at serving low-income households that face significant barriers accessing FEMA's transitional shelter assistance.

[11] <https://www.hcd.ca.gov/community-development/disaster-recovery-programs.shtml>

47

DHAP was created in the aftermath of Hurricane Katrina to provide long-term funding towards disaster recovery and is designed to provide additional temporary rental assistance to cover the difference between what a household can afford and their rent, as well as providing wrap-around counseling services. The Trump Administration decided not to use DHAP, opting instead for a more limited motel voucher program.

Both DHAP and CDBG-DR funding is often delayed both because of the lengthy time it takes to get approval for supplemental appropriations, the additional time that it takes the Federal Government to transfer the funds to state governments, and eventual deployment. It has taken over two years for CDBG-DR funds to reach the California Government for providing housing finance in the aftermath of the Wine Country Fires in October 2017 and December 2017 fires, mudflows, and debris flows impacted counties across Southern California. The National Low Income Housing Coalition (NLIHC) and other national affordable housing organizations have partnered to advocate for CDBG-DR to become an annually appropriated fund so that resources are more readily available when disasters occur.

The HUD funds can also be used for mitigation and resiliency aid. The mitigation funds must be used to increase resiliency to mitigate disasters and reduce the loss of life and property. Planning is an eligible activity. The projects must be CDGB-eligible and targeted at least 50% towards low- and moderate-income residents. The mitigation funding can be used for matched purposes. Eligible uses include infrastructure (risk reduction, retrofitting); housing (buyouts, residential retrofit or construction); and economic development in the form of commercial mitigation.

Challenges – There are a series of additional challenges that low-income residents and other vulnerable communities face during disasters and in accessing federal disaster resources. Advocating for increased local and state capacity vis-à-vis disaster planning and response is key given the growing number of disasters. The following are challenges identified consistently by CCRH partners in their work with disaster-affected communities:

48

- a. Low-income residents are often not notified of an impending disaster, whether it is a hurricane or large fire. Factors such as the “digital divide” between those who have ready access to computers and the internet and those who do not mean that lower income people, particularly in rural areas, are less likely to have access to formal communication channels providing information about how and where to evacuate. Lower income people are also more likely to have limited English proficiency and be best served by disaster notifications in languages other than English, which can be even more difficult for jurisdictions to issue in general, much less in a timely and effective manner.
- b. Low-income communities and communities of color have historically been underinvested in by federal and state governments and are more likely to have antiquated infrastructure as a result, as well as more than their fair share of toxic environmental sites. One of the more egregious examples is that 88% of the city of Houston’s open sewage sites lie in historically Black communities (Saadian Mickelson, et al., 2020). Federal relief funding calculations tend to only take the current disaster into account, rather than compensating for this historic underinvestment, continuing the cycle of underfunding. While CDBG-DR funds must be administered in compliance with the Fair Housing Act, this compliance is under-monitored and underenforced, leading to disaster recovery efforts that reconstruct communities with the same or worse structural inequities that were present prior to the disaster.
- c. People with disabilities are two to four times more likely to die or suffer a critical injury during a disaster (Timmons, 2017), so it is essential to have a plan to help individuals with disabilities evacuate and find temporary shelter that is accessible given their respective conditions.
- d. People experiencing homelessness face unique challenges because they are not eligible for disaster aid. Accessing FEMA’s individual assistance requires a permanent address and proof of

49

“While CDBG-DR funds must be administered in compliance with the Fair Housing Act, this compliance is under-monitored and underenforced, leading to disaster recovery efforts that reconstruct communities with the same or worse structural inequities that were present prior to the disaster.”

residence which are often impossible for an unsheltered person to provide and can be a disqualifying requirement for those living in informal situations if they are not listed on a lease or utility bill, as may be the case if someone is renting a room or staying in a recreational vehicle on someone else's property. Nongovernmental organizations often struggle to provide disaster aid to people experiencing homelessness on a logistical level, given that individuals are often not readily contacted at a single location and their possessions, including identification documents, are more likely to be lost or scattered. In the wake of a disaster with many victims, bias against people experiencing homelessness also affects the conversations around how assistance should be allocated and who “deserves help.” In contrast, people experiencing homelessness were deemed eligible for COVID-19 related FEMA aid and designated a target population.

e. FEMA MHUs often require the installation of infrastructure at a vacant site, leading to a delay between their placement and their connection to utilities. In some cases, MHUs have been removed before residents have access to permanent housing. These factors and the high cost of purchasing and shipping the units, make MHUs a very expensive strategy, which FEMA uses as a last resort. The new RAPIDO model^[12] pioneered in South Texas is promising – it features temporary housing with a prefabricated modular core which is build out from the modular core. RAPIDO and other “temporary to permanent” housing alternatives are much more cost effective; however, FEMA has not supported these models, citing limitation under the Stafford to assistance with temporary housing for disaster survivors.

f. People who have applied for federal assistance often receive unclear reasons for denials and face a confusing appeals process. Applicants receive a general letter form if they are denied, with minimal guidance on how to appeal and/or reapply.

^[12]More detail available at <http://www.rapidorecovery.org/>

50

- g. State governments often struggle to distribute funds to disaster-affected communities in a timely manner. This has been a chronic problem going back to Hurricane Katrina and prior – Hurricane Sandy being a notable example where some federal funds sat for a long time. While some states such as Florida and Louisiana have created state emergency bridge loan programs, California has not (International Economic Development Council, 2015).
- h. Local jurisdictions face challenges absorbing the influx of capital that results from a large disaster. Several affordable housing developers have more capacity than some of the small rural communities they serve. Local and regional Community Development Financial Institutions may also have more experience generating deals and projects in alignment with community goals; managing and monitoring loans; and building community capacity to meet the community development needs of a disaster-affected jurisdiction.

“People who have applied for federal assistance often receive unclear reasons for denials and face a confusing appeals process. Applicants receive a general letter form if they are denied, with minimal guidance on how to appeal and/or reapply.”

CONCLUSION

Natural disasters have grown more common and devastating as our climate changes. Having amassed 250 federally declared disasters between 1953 and 2019, California was deemed the most disaster-prone state in the nation and in recent years this trend has only worsened (Miller, 2017). While natural disasters affect urban, suburban, and rural areas, we have an imperative to address how rural communities in particular are more susceptible to the tragic impacts of heat waves, drought, wildfires, and floods. Rural land use and housing planning must be a part of the broader conversation on how to mitigate the harms caused by natural disasters. As discussed above, rural communities have particular and specific needs when it comes to lessening their risk from these hazards. Rural communities house

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“Several affordable housing developers have more capacity than some of the small rural communities they serve.”

some of our most vulnerable populations and bear the brunt of some of the most severe consequences of natural disasters. However, this intersection of vulnerabilities has the possibility of yielding some of the strongest solutions to the crisis: when faced with the impacts of these climate disasters, local and regional jurisdictions and their community partners have an acute awareness of what needs to be done to serve their communities' needs.

In addition to local and regional partners, affordable housing providers must be a central part of the effort to mitigate the effects of natural disasters in rural communities. Affordable housing providers are adept partners that already address complex problems and competing priorities on the local, state, and federal level. Affordable housing providers are community assets that advocate for our most vulnerable communities and are uniquely able to bring the needs of the rural housing community to the forefront. In addition, prioritizing the needs of affordable housing providers in a way that preempts and mitigates the harms of climate induced natural disasters forces us to address housing and climate issues that impact all of California, in a way that strengthens these solutions for the entire state. The case studies featured in this report demonstrate how community partners, rural housing developers, and local governments are already coming together to implement solutions that fortify affordable rural housing supply and resiliency. Through partnerships like these, rural Californian communities stand as an example for all of California as a result as we face these challenges in the future.

RECOMMENDATIONS

Disaster planning, preparation, recovery, and rebuilding require the coordination of critical actors including affordable rural housing developers, local government, and the resources and policies of federal and state government. Based on practice and input from CCRH members and others, CCRH has developed a series of important recommendations that minimize damage and speed recovery and rebuilding in rural communities. These recommendations are divided into five sections focusing on various stakeholder groups: rural housing developers; local government; state government; philanthropic partners; and federal government.

5 2

Rural Housing Developers

1. Design, build, retrofit, and operate affordable housing communities for hazard mitigation and resiliency.
2. Undertake ample organizational contingency planning and disaster response training for residents with the goal of enabling all residents to get to a safe location in the aftermath of a disaster.
3. Build internal staff capacity around disaster planning and response.
4. Revisit insurance schedules for properties in high-risk areas based on current construction costs.

Local Government

1. Center community engagement as a critical element of a responsive housing recovery from a natural disaster. Affordable housing developers and other community development organizations can play an important role in that process. While FEMA funding has been moving away from supporting community engagement, there may be federal assistance for local efforts.
2. Establish local mechanisms for coordinating receipt, storage, and distribution of corporate and other donations made in the wake of a disaster.
3. Adopt hazard-resistant zoning and building codes.
4. Ensure proper tracking of contractor accountability regarding cost, quality, and timing by local governments, with federal assistance.

“Center community engagement as a critical element of a responsive housing recovery from a natural disaster. Affordable housing developers and other community development organizations can play an important role in that process.”

5. Make certain that the people who were experiencing homelessness prior to the disaster receive the same emergency assistance as other survivors.
6. Ensure that housing recovery efforts address the unique needs of homeowners, renters, and people experiencing homelessness proportionately.
7. Consider the needs of people with disabilities who are more prone to injury during a natural disaster in programs for housing construction and repairs.

53

“Make certain that the people who were experiencing homelessness prior to the disaster receive the same emergency assistance as other survivors.”



- 8) Ensure that housing recovery efforts have the fewest administrative barriers possible so that residents can safely and quickly get into their new homes.
- 9) Establish local and regional mutual aid agreements.

State Government

- 1) Establish a statewide, year-round California Disaster Housing Task Force with regional representatives and/or subdivisions to:
 - a. coordinate planning such as promoting concurrent planning with HCD and other agencies immediately after a declared disaster strikes.
 - b. move forward requirements for updated disaster plans at the county level.
 - c. set best practices for disaster prevention and response.
- 2) Create and promote a menu of emergency housing solutions that can be deployed quickly and readily adapted to a specific local community's needs, including:
 - a. relief from HCD to allow affordable housing providers to by-pass existing waitlists and waive occupancy restrictions to prioritize emergency placement of disaster survivors experiencing homelessness for housing in vacant units,
 - b. prioritizing building emergency replacement housing in areas without zoning or general plan amendments,
 - c. allowing by-right development of emergency replacement housing, and
 - d. identifying effective quick-build solutions as alternatives to FEMA MHUs
- 3) Establish consistent statewide standards for home and community hardening that will help make insurance available

54

“Ensure that housing recovery efforts have the fewest administrative barriers possible so that residents can safely and quickly get into their new homes.”

and affordable to residents and businesses.

- 4) Create a flexible block grant for local governments and tribes engaged in disaster housing relief and recovery.
- 5) Fund housing resilience planning grants.
- 6) Establish a statewide emergency bridge loan fund for housing recovery, including low-income home repair, construction, replacement undertaken by affordable housing developers, local governments, and individual consumers for in disaster areas.

In the 2020 legislative season, CCRH is sponsoring AB 880, authored by Assemblymember Aguiar-Curry. AB 880 would create the Affordable Disaster Housing Revolving Development and Acquisition Program, a revolving emergency bridge loan fund for housing recovery in disaster areas. To find out how you can support AB 880, **sign up for our mailing list at <https://www.calruralhousing.org/>**

Philanthropic Partners

- 1) Fund local nonprofit staff to engage in disaster planning and response. Local nonprofits often invest their own limited funding to build staff disaster capacity and only occasionally secure private or public funding to recoup those costs. Local nonprofit staff well-trained in disaster response are a community-wide asset.
- 2) Establish funding and resources that serve undocumented community members excluded from federal and other traditional relief.

Federal Government

- 1) Use damage assessments, geo guide information, and other data for categorical eligibility for survivors. In turn, local jurisdictions and organizations need to inform and buy into these processes.

55

- 2). Adopt universal applications for FEMA, SBA, HUD, and other agencies to make the process of applying for assistance easier, quicker, and more flexible.
- 3) Improve FEMA's Transitional Shelter Assistance Program, which has been a chronic challenge to access.
- 4) Target post-disaster rental housing repair programs towards the needs of low-income renters who are more vulnerable. FEMA's repair program is limited to assisting nonprofit owners and does not extend to for-profit landlords.
- 5) Explore the use of "temporary to permanent" housing alternatives to Manufactured Housing Units.
- 6) Permanently authorize CDBG-DR as a part of the yearly appropriations process.

56

CASE STUDY: SELF-HELP ENTERPRISES

OVERVIEW

The San Joaquin Valley in Central California started experiencing severe droughts in the early years of the 2010 decade. These cumulative droughts had the effect of drawing down of aquifers already depleted through agricultural use, leaving many families without water. This raised serious environmental health issues about both lack of water and the quality of existing water. Self-Help Enterprises initially became involved in drought response because families came to them for assistance due to their reputation for helping communities with infrastructure challenges, as well as their experience with housing rehabilitation. Self-Help Enterprises has since become a major player in responding to the impact of water scarcity in the San Joaquin Valley. Their disaster work has expanded from drought response into other areas including earthquakes, fires, flood, and COVID-19.



57

Background on Self-Help Enterprises- Founded in 1965, Self-Help Enterprises' mission is to work together with low-income families to build and sustain healthy homes and communities. They have touched the lives of over 60,000 families in the eight contiguous counties they serve in the San Joaquin Valley, an area larger than 10 states. The eight counties are in the world's most productive agricultural growing area with a population of 3,91,659 according to the 2010 census. Self-Help Enterprises has developed 6,367 units of self-help housing and 1,596 multi-family housing units; given financial assistance to 2,162 families buying their first home; and provided water and infrastructure services for 32,541 households. In recent years, 76,657 students have been served through Self-Help Enterprises' work to bring clean drinking water into schools, and the organization has coordinated 6,353 bottled water deliveries. Self-Help Enterprises has clearly had huge impact throughout their service area.

Disaster initiative and strategy- Self-Help Enterprises became directly involved in drought response work in 2014 after numerous families contacted them in crisis. At the time, United States Department of Agriculture could only provide a loan of up to \$11,000 for each new domestic well, which is insufficient to cover the true costs of digging a new well. After developing a prototype for a temporary tank system and raising private money to assist dozens of families in the summer of 2014, the organization started working with the California

58

Office of Emergency Services (OES) at both the state and county level. Former Governor Jerry Brown issued a Drought Declaration which helped mobilize the state and county OES.

Working with OES, Self-Help Enterprises was able to support installation of 1,600 home water storage tanks to provide immediate access to water. They then started working with the State Water Resources Control Board (SWRCB) to drill new wells for households whose wells ran dry. It is important to understand that when wells go dry the value of the house drops to zero, which impacts not only the obvious lack of access to water, but also a family's financial security. For these reasons, new wells had to be dug much deeper, often more than 600 feet. Self-Help Enterprises has now partnered with several generous, qualified drillers who have committed to only charging the actual cost of the drilling without profit margins.

The average cost of drilling a domestic well is



59

\$25,000; a deep well is \$45,000. USDA provides a Household Water Wells System Loan for up to \$11,000, and the SWRCB provides additional funding, but one of the major challenges that Self-Help Enterprises faces is that the funding is siloed, which resulted in Self-Help Enterprises providing three rounds of funding with the SWRCB structured as a loan. If a homeowner stays in the home for five years, the loan is forgiven.

It is more challenging to get funding for rental properties since SWRCB counts the income of the landlord, making some tenants ineligible to receive funding for digging wells. Self-Help Enterprises is working to make SWRCB policy more flexible for rental families.

Self-Help Enterprises is also working on disaster preparedness, including earthquakes and fires. The City of Ridgecrest in Kern County, which experienced two major earthquakes in July 2020, reached out to Self-Help Enterprises for technical assistance support to access funding for housing and business support.

Self-Help Enterprises' emergency services staff spend considerable time with schools educating children about water and drought issues, so they can inform their parents about how to take advantage of the resources and services that the organization and their partners offer. About 70% of the families that Self-Help Enterprises serves with their disaster support work are Spanish speaking families. Self-Help Enterprises has a substantial number of bilingual staff members and is uniquely positioned to support these families.

60

Disaster Capacity- Self-Help Enterprises has a team of 17 individuals working on disaster planning and response, predominantly on drought relief for homeowners, renters, schools, facilities, and community partners. They provide a comprehensive array of technical assistance services and supports both to residents they have helped with housing as well as the broader community, notably schools. All Self-Help Enterprises' facilities have emergency plans in place to help people evacuate and go to a safe location. The organization is continuing to build their disaster planning and response capacity.

Partners- Self-Help Enterprises has a diverse array of partners through their engagement with the California For All Emergency Preparedness Campaign, a disaster-preparedness initiative housed at the Governor's Office of Emergency Services (Cal OES). This campaign, dubbed Listos California, focuses on building resiliency within Latino families and communities to prepare for future disasters including drought, fire, and earthquakes. Listos has a funding partnership with the United Way of Fresno and United Way of Madera County, both of whom provide emergency preparedness funds in partnership with Self-Help Enterprises. Self-Help Enterprises is supporting this effort with funding and volunteers.

While the State of California provided funds to support the emergency water tanks, Self-Help Enterprises' staffing costs were not funded by the State. Rural LISC, a community development support organization, was able to provide grant financing for Self-Help Enterprises to implement water delivery

61

programs. Rural LISC also provided a below market rate CDFI loan to Self-Help Enterprises to lend to impacted families that needed gap financing to fund entire well replacements.

Another local partner is a faith-based organization called Hands in the Community, which works with low-income older adults. During the COVID-19 pandemic, Hands in the Community has provided food distribution and social outreach while maintaining social distance policies.

Program and policy challenges- One of the major challenges that Self-Help Enterprises faces is that disaster funds are usually distributed in siloes and, in some cases, too specific to an individual disaster. There are funds used only for mudslides in the Central Coast region, for instance, even while the disasters will be different in the San Joaquin Valley. This problem of narrow application is true for both OES and USDA funds. Self-Help Enterprises tries to combine funds that can be used to respond to the



62

disaster at hand. Flexible funding is critical to long-term disaster recovery as well as the ability to access funds quickly. Funds need to be made available within 72 hours to meet immediate needs and both Self-Help Enterprises and their local partners want to respond as quickly as possible. Funding programs need to have basic guidelines in place to encourage quick response. Self-Help Enterprises and their partners have capacity, protocols, and systems already in place to get resources and funding to people who need them immediately.

One good example is the most recent federal Farm Bill. The bill increased the amount of funding for a water system from \$10,000 to \$15,000 per family but has still not finalized regulations. This highlights the need for government agencies to put more resources into planning and preparedness for disasters, which will save money in the long term. According to Self-Help Enterprises, for every dollar that is spent on planning and preparedness, seven dollars are saved in the recovery, since the impact is partially mitigated.

“According to Self-Help Enterprises, for every dollar that is spent on planning and preparedness, seven dollars are saved in the recovery”

63

Another major policy and program challenge is that Self-Help Enterprises serves a large immigrant community, with a number of undocumented residents. Many of the immigrant families are not eligible for government programs, and a fear of deportation prevents them from accessing non-federal government programs and resources. Because immigrant families can be reluctant to avail themselves of these services regardless of their eligibility, Self-Help Enterprises works diligently to build trust with them and to provide them safe access to critical resources.

Opportunities - The growing array of natural disasters, fueled in part by climate change, has led to some new opportunities for Self-Help Enterprises. They have built a robust capacity for “partner services,” with 17 employees working on disaster preparedness and response along with other partner service functions. They are providing a comprehensive array of supports for disaster issues, including the partnership with qualified drillers who only charge low-income families the actual cost of installing the well.

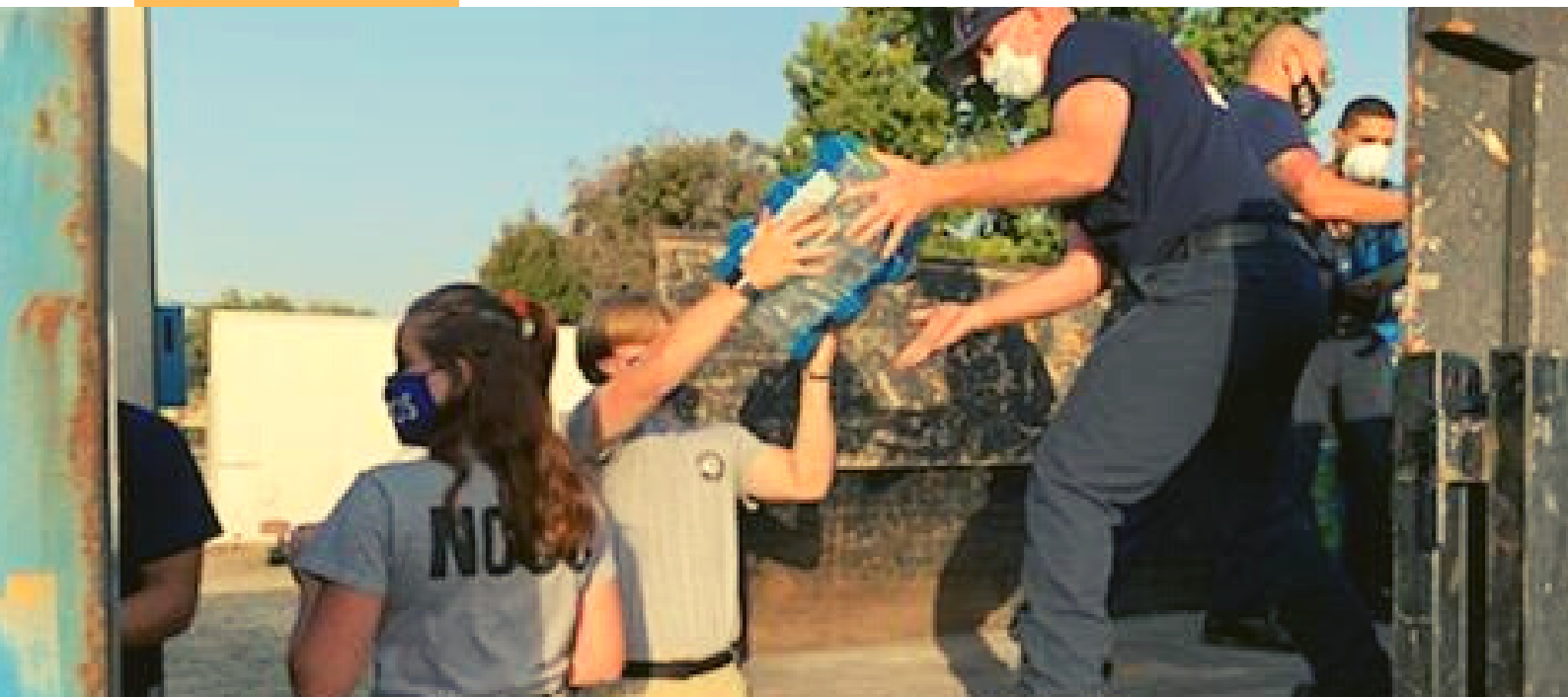
Self-Help Enterprises has been able to expand their services to the larger community. A good example of this is working in schools to educate students about water and drought issues and how to solve them. The added advantage is that the children are equipped to refer their parents to Self-Help Enterprises’ services, providing new opportunities for Self-Help Enterprises to work with families.

64

Resources - Disaster planning, preparedness, and response has led to a new series of resources for Self-Help Enterprises from the California Office of Emergency Services (OES) to USDA's Water Wells Systems Loan, and Water Board resources and funding partnerships with several local United Ways. Self-Help Enterprises leverages these resources with more traditional sources of funding for affordable housing developers, including State housing and infrastructure programs. However, despite Self-Help Enterprises' significant experience in assembling resources, it has been challenging to access flexible resources.

Effective practices and lessons- Some of the major effective practices and lessons from Self-Help Enterprises' disaster work in the past six years in drought relief and beyond are:

1. Respond to significant community needs- Several years of drought led to community residents turning to Self-Help Enterprises for support given their reputation and capacity.



65

2. Combine technical assistance and advocacy- Self-Help Enterprises provided both technical assistance and advocacy by pressuring the Office of Emergency Services and USDA to be more responsive to the water needs of low-income residents.

3. Problem solving- Homeowners who did not have access to water lost the value of their home. Self-Help Enterprises focused on those homeowners to provide tanks and/or wells so that they did not lose the economic value of their home. Another innovative feature was to forgive the loan for the Household Water Wells Systems if the homeowner stayed in the home for at least five years.

4. Engage the broader community- As part of their disaster planning and response strategy, Self-Help Enterprises spends a lot of time in schools educating children about water and drought issues, with the intended benefit of having children tell their families. Self-Help Enterprises has been able to respond quickly to COVID-19 through their partnership with Hands in the Community to assist older adults in accessing food and social support.

5. Advocate for flexible financing- Each disaster is different and requires different resources. Self-Help Enterprises has been advocating for quick response flexible financing to both meet immediate needs and plan for the long-term recovery, whether it is new water wells or healthy housing practices that make developments more fire-retardant.

6. Adaptability- There are too many restrictions on programs helping people during and after a disaster. Organizations need to meet the immediate and long-term needs of residents, which requires an adaptable response.

COVID-19 response- Self-Help Enterprises has been working on a myriad of strategies during the COVID-19 pandemic to support the needs of thousands of

66

low-income families in their service area. Some of the major activities and programs include:

1. Delivering 14,000 gallons of water to low-income families- Self-Help Enterprises is providing 60 gallons of water monthly to families who lack fresh water. The water is being provided by Nestle and recently Pepsi at no cost to Self-Help Enterprises.
2. To reduce the incidence of airborne COVID-19 spread, Self-Help Enterprises is working with Friends of Tulare County and the Homeless Alliance to provide bandanas that can serve as face masks to homeless residents who live in homeless encampments.
3. Community Services Employment Training (CSET)- Self-Help Enterprises is working with the CSET employment program for trainees to learn how to install and maintain water tanks.
4. Mi Familia Vota- Self-Help Enterprises is partnering with Mi Familia Vota, which is doing U.S. Census work to refer residents to Call Centers for assistance and resources.
5. Leadership Counsel for Justice and Accountability- This organization does community engagement and outreach with farmworker communities. Self-Help Enterprises has teamed up with this organization to direct resources to low-income residents.
6. Self-Help Enterprises housing counseling staff have pivoted to providing triage and crisis counseling to people affected by the pandemic, assisting them in strategizing how to pay bills and/or seek relief and assistance.

67

In a short period of time, Self-Help Enterprises has forged several new partnerships to respond to the COVID-19 challenges facing low-income residents and people of color. Organizations are more willing to partner during this time, and the partnerships can be expanded to other work that Self-Help Enterprises does.

Self-Help Enterprises has been able to attract new resources to their work and the community including corporate partners like Nestle and Pepsi. The California Restoration Resource Council of American River approached Self-Help Enterprises to offer funding because of Self-Help Enterprises' established relationships with major investors. A silver lining in the tragic pandemic is how enormous needs have opened new doors to organizations that are making a difference in their respective communities.



68

CASE STUDY: PEOPLE'S SELF-HELP HOUSING

OVERVIEW

People's Self-Help Housing Corporation (PSHH) is a regional affordable housing developer serving three Central Coast Counties: San Luis Obispo, Santa Barbara, and Ventura. These counties have experienced a wide range of natural disasters in the past decade including major fires in Santa Barbara and Ventura Counties; droughts; and mudslides along the Pacific Coast. PSHH has made a concerted effort to integrate disaster planning, preparedness, and response as a core element of their affordable housing and community development strategy.



69

Background- In 2020 PSHH celebrated its 50th anniversary as a non-profit affordable housing and community developer serving low-income families in three counties along the California coast. Over 5,500 people live in PSHH constructed and/or rental housing. PSHHC's signature housing initiative is their self-help housing program that has helped 1,200 low-income families become homeowners. Each family that builds a self-help house commits 40 hours of labor or sweat equity, and the 1,200 families have contributed a cumulative 50,270 hours.

PSHH has developed several permanent supportive housing projects for homeless individuals and families, housing for 900 seniors and individuals with disabilities, and a total of 1,900 rental housing units. In addition, PSHH has constructed a significant number of housing for farmworkers using United States Department of Agriculture (USDA) funding. Much of their family housing serves Latino families.

PSHH offers a robust array of social services, resident education, and children's services to their residents. They have ten site-based learning centers throughout their three-county geographic service area.

Disaster Initiative – California experienced a severe water shortage and drought conditions from 2010 through 2016. Water use restrictions were imposed, and the cost of water rose dramatically. In response, PSHH incorporated drought-sensitive and energy-saving features into their new housing developments, including drought-resistant landscape, water cisterns, and irrigation systems. These modifications have led to real cost savings for PSHH's affordable housing projects and their residents.

70

Both Ventura and Santa Barbara County experienced several major wildfires in 2017 and 2018 including the Thomas fires. Fortunately, no PSHHC residential projects were lost to these fires. Shortly after the wildfires, there were significant mudslides on the coast between Santa Barbara and Ventura, which closed Highway 1 and Route 101 for a significant period. PSHH had three new projects under construction which were delayed for as long as six months because of road closures, adding additional costs to tightly budgeted projects.

This collective experience with drought, fire, and mudslides led the organization to develop a strong disaster planning and response strategy.

Disaster Capacity- In the past two years, PSHH has developed both an Emergency Action Plan and an Emergency Response Activation Manual which has been invaluable during the COVID-19 crisis. The Emergency Action Plan delineates the different types of disasters and the plan for responding including roles and procedures of the staff and residents. There are staff communication procedures which is important given that many of the staff provide direct services to residents.

PSHH focuses on preparing residents to make sure they have emergency kits and information on where to go in case of an emergency. Resident education and awareness are important during and after a disaster, so roles and responsibilities are clearly understood.

71

The Emergency Response Activation Manual is the action plan for responding to disasters. There are different degrees of disaster and staff is trained to respond accordingly. A good example is how PSHH staff were well-prepared and responded effectively when an active shooter was identified near a resource learning center. The staff protected the children and locked the space, while law enforcement was able to contain and disarm the active shooter.

Another area where PSHH has invested significant resources for disaster response is in technology and infrastructure. They have developed a cloud-based system for important documents and information and have increasingly shifted services to be accessible online. This is especially important during the COVID-19 pandemic. All residential properties have free Wi-Fi and many residents have been assisted in acquiring laptops so residents can communicate with PSHH staff online. Computer training is regularly provided to residents increasing their skills and comfort using technology. PSHH has also implemented an online rent payment platform which has made it easier to pay, process, and track rent. Over 80% of PSHH renters pay online which saves the organization and residents considerable resources. PSHH received state funding to make this transition to the online system.

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*All residential properties
have free Wi-Fi*

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72

Partners- PSHH has partnered with the Red Cross to train staff and residents to respond to disasters as well as to help the organization acquire basic emergency supplies for each PSHH residential community. During the COVID-19 pandemic, PSHH was able to provide personal protection supplies like face masks as well as cleaning supplies.

City and County governments in the region have partnered well on disaster planning and coordinating resources for disaster response, especially with the fires in Santa Barbara and Ventura County. The Community Foundation of San Luis Obispo County, the Santa Barbara Foundation, and the Ventura Community Foundation have resourced the PSHH emergency fund and supported the development of their emergency fund strategy, as well as coordinating resources and volunteers for the COVID-19 response work.

Recently, PSHH has been working with school districts to coordinate meals for low-income children who live in PSHH properties and attend childcare centers. One school district provides 800 meals (breakfast and lunch) each day for low-income children in PSHH properties.

Opportunities- PSHH's focus on disaster planning and preparedness has increased the efficiency of the organization and saved critical resources. Their new housing projects feature green building design and retrofitting, leading to more efficient water usage. Adaptation of web-based systems has enabled PSHH to deliver residential services and supports to

73

residents virtually during the COVID-19 pandemic. The transition from employees providing direct services in-person to virtually has been fairly seamless due to the infrastructure investments that the organization had already made.

Program and Policy Challenges- Disasters require a coordinated and comprehensive approach which can be challenging as many services and programs are siloed. PSHH has worked extensively to coordinate web-based systems and invest in technology infrastructure among its housing developments and programs. One of the challenges that PSHH faced is that English is not the first language for many of the residents and staff. The organization has invested significant resources into translating documents, providing bilingual training, and ensuring that emergency alerts are in both English and Spanish.

Resources- Red Cross has provided significant in-kind resources to PSHH, from training to emergency supplies. Community foundations, food banks, school districts, local businesses, and state funding sources have supported the development of technology infrastructure at all the residential properties, as well as COVID-19 related support.



74

COVID-19- PSHH made a quick transition to virtual means of interacting with residents and other stakeholders. In addition to helping distribute 800 meals a day to children, PSHH is providing online learning opportunities for youth while schools are closed. Social workers are providing online case management, resource coordination, and mental health services. PSHH reached out to its 900 senior and special needs residents conducting weekly wellness checks using video conferencing with residents when COVID-19 forced shelter in place. They now do these wellness checks every two weeks with senior and special need residents. They also host “healthy moments” with all residents to encourage healthy eating and exercise. Staff has maintained strong relationships with the residents during the pandemic.

Effective Practices and Lessons-

1. Pre-planning and training are critical for anticipating and responding to a disaster. PSHH was able to respond quickly to the COVID-19 pandemic because of their previous investment in preparedness.
2. Real-time analysis and assessment of processes and performance is critical to continual improvement.
3. Clarity is essential for individuals, both staff and residents, to understand their roles, including both what is expected of them and what is not. Emergency response and evacuation drills are critical to preparing residents and staff for a disaster event.
4. Decision-making processes operate differently under crisis and need to be timely and responsive.

75

CASE STUDY: BURBANK HOUSING



OVERVIEW

Burbank Housing, a large affordable housing developer that serves low-income residents throughout Sonoma County, has had significant experience in the past three years with fires and flooding. The organization has emerged as a local, regional, and state leader planning, preparing, and responding to various disasters.

BACKGROUND

Burbank Housing was founded in 1980 and has become the largest affordable housing developer in Sonoma County, a picturesque county with its share of low-income residents working in the agriculture and service sectors. Burbank Housing describes its mission as “affordable housing that puts people first.” Burbank Housing’s vision is to build quality housing in the North Bay and support vibrant local communities through professional management of housing units that are sustainable financially and environmentally sound. Burbank has developed over 4,800 units of housing, for sale and rental, with 3,400 of the units financed through the Low-Income Housing Tax Credit program. Additionally, Burbank Housing has built and sold 800 new homes to low- and moderate-income homebuyers in Sonoma County. As of April 2020, they have 680 units in their development pipeline.

Disaster Initiative- Sonoma and Napa Counties experienced five fires in the fall of 2017, referred to

76

collectively as the Wine Country Fires or Sonoma Complex Fires. The largest fire was the Tubb Fire which started near Calistoga and was the most devastating fire in California history until the Camp Fire in 2018. The fire burned 5,643 structures, half of which were in the city of Santa Rosa. At least 22 people died from the fire and 36, 811 acres were burned. Other fires occurred in eight counties in Northern California. The Tubb fire came close to destroying Burbank affordable housing units, but most of the Burbank affordable housing complexes are near schools, hospitals, fire stations, and substantial resources were devoted to saving these major public facilities and services – an important consideration when siting future affordable housing developments.

One major manufactured housing community, Journey's End, was completely destroyed, leading to the loss of 161 mobile homes. The City of Santa Rosa approached Burbank Housing to acquire the destroyed site to develop 117 units of affordable senior housing with Low-Income Housing Tax Credit financing. In rebuilding, Burbank Housing will use building materials that are fire retardant. The complex was designed with an emphasis on access, particularly the site's doors, facilities, and signs specifically to address the critical need for safer, more efficient escape routes in the case of future fires. Many of the new residents are vulnerable, are older, and/or have disabilities.

In the 2017 fires, 30 to 40 staff had to be evacuated from their own homes, communities, and workplaces

77

in Burbank Housing properties due to the multiple fires. During the 2019 Kincade Fire, 12 staff members were evacuated. In the aftermath of the 2017 fires, Burbank Housing developed an emergency response plan for field (property management and maintenance) and central staff. Each building has its own emergency response plan to protect both the residents and staff.

Sonoma County's existing shortage of affordable housing and low vacancy rate was exacerbated by the fires of 2017 and 2019. Burbank Housing staff assisted many community members who had to be relocated after losing their home. Burbank Housing case managers have helped communities respond to the loss of housing as well as working with individuals and families to find new homes.

In addition to the impacts of fires, several communities in Sonoma County along the Russian River have been flooded over the past few years. Burbank Housing has developed a novel approach to flood response. Their Fife Creek housing development in Guerneville is built upon podiums and stilts which bring the development 16 to 20 feet above the Russian River and above the flood plain for the area, which routinely floods in non-drought years. It also features a boat dock that can rescue residents in the case of being trapped by flood waters. These design elements made it possible for Fife Creek to secure flood insurance.

Disaster Capacity- Burbank Housing has built significant capacity and expertise in disaster design

78

and response. They pay special attention to housing ingress and egress issues in new developments, as well as safety features and signs to help residents exit in case of an emergency.

They have also developed in-depth emergency evacuation plans to both evacuate residents safely from their properties and help the residents find shelter and services. Exit signs are everywhere and employees and residents know where to go in case of an emergency.

Partners- Burbank Housing has a robust residents and services component to their housing. They partner with Community Action Partnership of Sonoma (CAP) on free food distribution for some residents and community members; sponsor an after-school program; offer holistic health and wellness training and exercise; art education activities; Zumba; and seasonal outings for families and older adults. CAP and other partners help meet the emergency needs of residents from disasters and illnesses.

They are working with the local Salvation Army during the COVID-19 Pandemic to help residents access services, notably food and meals, in a safe and healthy way.

Burbank Housing has a strong partnership with local government in disaster response, notably with law enforcement who have been invaluable in being early responders to natural disasters.

79

Program and Policy Challenges- The major challenge that Burbank Housing has faced in disaster work is that as of the first quarter of 2020, none of the 2017 or 2019 HUD and FEMA federal funds have flowed to Sonoma County for rebuilding housing lost during those fire seasons. The long-term recovery will be significantly limited without federal and state resources. Burbank Housing has been leading the effort statewide with other rural affordable housing developers to pressure the federal government to release the funds. They organized a “Dear Colleague” letter from members of Congress to pressure federal agencies to release funds.

Burbank Housing is also actively working through their membership with the California Coalition for Rural Housing to develop and secure state rural disaster resources for housing and community rebuilding.

Opportunities- Burbank Housing has built new relationships with various government agencies in the aftermath of the fires and have been an effective partner for housing development. They were deeded the land from Journey’s End manufactured housing community in Santa Rosa to develop 117 new units of rental housing.

Burbank Housing has 229 units of new housing in the production pipeline which is critical given the loss of affordable housing in the larger community through the multiple fires in 2017 and 2019.

Effective Practices and Lessons- Burbank Housing

80

1. Invest in a strong emergency plan for staff, residents, and other stakeholders. Staff who are in crisis are not going to be able to help others.
2. Have a good communications plan and coordinate with law enforcement who have been effective in Sonoma County with disaster response.
3. It is important to partner with government at various levels but realize that government can be challenging especially in distributing funds.
4. Build strong relationships with social service networks. Burbank Housing works closely with ROC Sonoma County, a local network of faith-based, non-profit, governmental, business, and other organizations and agencies, designed to provide a coordinated fire recovery effort.
5. New strategies need to be developed in working with government due to the enormous delay in receiving necessary funds to advance the rebuilding process.



81

CASE STUDY: COMMUNITY HOUSING IMPROVEMENT PROGRAM (CHIP)

OVERVIEW

Community Housing Improvement Program (CHIP) is a long-time affordable housing developer serving seven rural counties in Northern California. CHIP's geographical service area experienced two severe wildfires in 2018. The first was the Carr Fire, and the second was the Camp Fire, which was the worst fire in California history in 2018 (see Figure 2). Already devastated by the impact of 2018's fires, the region was hit particularly hard in the 2020 fire season as well, with multiple fires in almost all counties they serve. CHIP and others have begun the slow process of rebuilding the community.



82

Background- CHIP is a 48-year-old affordable housing organization whose motto is “Helping People Help Themselves.” The organization has developed over 2,750 units of housing, predominantly self-help housing for low-income homeowners and a mixture of rental properties that cater to families, farmworkers, and older adults. CHIP provides residential services to support their tenants and other community residents.

In the aftermath of the devastating Carr and Camp Fires in 2018, CHIP is ramping up its housing development capacity and will be developing five new rental projects in the near future. In 2021, CHIP will finish rebuilding Paradise Community Village, a 36-unit affordable housing community that burned down during the Camp Fire and in 2022 they will complete the 101-unit Creekside Place community in Chico. CHIP is also exploring a single-family rental program to expand housing opportunities in Butte County.

Disaster Initiative-Two of the most destructive fires in California history occurred in 2018 in the communities that CHIP serves. The first fire was the Carr Fire which started on July 23 and was finally extinguished on August 30, 2018. The Carr Fire was the sixth most deadly fire in California history at the time, burning 229,651 acres and destroying 1,609 structures including 1,077 homes. Eight people died, including 3 firefighters, and the financial damage was \$1.659 billion.

The deadly Camp Fire started on November 8 and was brought under control on November 25. The Camp Fire destroyed most of the town of Paradise and several .

83

CALIFORNIA'S 2018 FIRE SEASON



FIGURE 4: CAL FIRE 2018 INCIDENT SUMMARY

other surrounding towns. The population of Paradise declined from 27,000 to 1,500 in 2019, regrowing slightly to over 4,000 in 2021. 153,336 acres and over 19,000 structures, both residential and commercial, were incinerated, including 95% of the housing stock in Paradise. CHIP's 36-unit Paradise Community Village affordable housing development was also destroyed by the fire. There were at least 85 people who died tragically from the fire and the total economic damage was \$16.5 billion – nearly ten times the economic damage of the Carr Fire. The Camp Fire was the deadliest fire in California history and in combination with the Carr Fire has created enormous economic hardship for the entire region.

With a large portion of the town of Paradise and several smaller towns destroyed, there was no place to house people displaced by the fire. Some of the former residents have moved as far away as Georgia. This post-disaster migration is reminiscent of the displacement effects of Hurricanes Katrina and Rita in 2005, where, more than 15 years later, the City of

84

New Orleans' 2020 population remains more than 100,000 people lower than pre-Katrina. Paradise has had to rebuild itself from scratch. The degree of devastation has brought focus and urgency to the question of how vulnerable populations in rural areas, who are disproportionately low-income, elderly, disabled, and people of color, are best served by recovery efforts.

Disaster Capacity- Like most affordable housing providers, CHIP had limited disaster capacity before the Carr and Camp Fires. In the face of multiple disasters, CHIP has increased its ability to respond to disasters with external resources from North Valley Community Foundation, California Community Foundation, NeighborWorks America, and Rural LISC. Each funder has invested in strengthening the disaster capacity and emergency response of CHIP. Rural LISC and NeighborWorks America had been longstanding supporters of CHIP, while North Valley Community Foundation and California Community Foundation funding partnerships were established in response to the Carr and Camp Fires.

CHIP has formalized emergency plans, evacuation routes, and shelter-in-place procedures. They have revamped their disaster response policies, including adapting to communicate with their residents mostly by phone. In response to COVID-19, they built out a robust system for sharing resource referrals to residents; adapted communications with and programming for residents; added computer capacity in the residential properties; and made individual, private computers available for some residents who do not own computers.

85

From its inception, CHIP participated actively in the Long-Term Recovery Group which became the Camp Fire Collaborative, a community collaboration made up of over 100 nonprofit, private, and public organizations and individuals working to address the unmet needs of Camp Fire survivors throughout the Butte County region. The Collaborative is composed of 80 to 100 individuals and formed multiple committees to address different aspects of recovery. Naturally, housing emerged as one of the major concerns given the extremely limited supply of housing in the aftermath of the fire. CHIP staff have led the Collaborative's 40–50-member Housing Committee since the Collaborative shifted from focusing on emergency response to long-term recovery.

Program and Policy Challenges- There are numerous program and policy challenges resulting from the magnitude of the fire. Residents who wanted to rebuild on their own property were required to do a land-use survey. The results from some of the surveys showed that the owner had less land than they thought to rebuild their house, resulting in smaller houses. There were also issues with septic systems since Paradise was the largest municipality west of the Mississippi without a sewer system. A lack of centralized sewer systems is common in rural areas.

Another major issue is that FEMA has challenges tracking people over time, and there is no clear idea of where people moved during the diaspora. This makes it hard to predict how many people would like to move back to Paradise and surrounding areas.

Emergency funding is often available in the immediate aftermath of a disaster but often the long-term

86

recovery funding is difficult to access. FEMA emergency funds arrived in a timely manner, but the Federal CDBG-Disaster Relief (DR) dollars that were appropriated in 2018 did not arrive in California until late 2020.

Applications submittal and awards are now anticipated to be finalized by the end of 2021 – three years after the disasters struck. The 2017 CDBG-DR funds arrived in California for the Sonoma Complex Fires and Thomas Fire, but – as of 2021 -- have not yet been deployed. The delay will also be affected by COVID-19. These delays present challenges to affordable housing providers who need to incorporate CDBG-DR funds into the financing stacks of their projects. As mentioned previously, NLIHC with other national affordable housing organizations has been advocating to make CDBG-DR an annually appropriated fund to have resources more readily available when disasters occur.

In addition to the monetary delays, FEMA and state and local administrators spend an inordinate amount of time on preventing fraud and abuse. While important, this oversight further slows down dollars flowing into the recovery process, delaying the critical work of getting residents back into homes and moving the broader community rebuilding process forward. In response to the Camp Fire in November 2018, FEMA established a temporary housing program for Camp Fire survivors, initially set to be an 18-month program. It took FEMA up to nine months to get temporary housing established and residents were threatened with removal from FEMA temporary housing as soon as May 2020. Butte County and State of California had to appeal this displacement to get FEMA to approve an extension for another year, through May 2021. As of March 2021, 113 households remained in the

87

FEMA Direct Housing Program, and it was extended an additional four months (FEMA, 2021). The local FEMA workers were supportive of keeping people in FEMA housing, but the process was overly complicated and stressful for people who had just gone through a disaster.

Partners- After the Camp Fire, a Long-Term Recovery Group (LTRG) was established by a coalition of nonprofit organizations; churches; service providers, local government staff; hospital, university, and private sector representatives; and local residents. A long-term recovery group is a cooperative body that is made up of representatives from nonprofit, private and public organizations working within a community to coordinate service provision to community residents during disaster recovery. LTRGs are as varied in their structure as are the communities in which they work and vary based on the scale of disaster, local needs, and community assets.[13] While LTRGs are often formed from and/or by the local Voluntary or Community Organizations Active in Disasters, there were no active local chapters in the communities affected by the Camp Fire. The Camp Fire LTRG received financial support from the Red Cross and North Valley Community Foundation. The LTRG quickly formed a variety of committees who met separately in addition to general meetings and coordinated different aspect of the work, including Community Wellness, Donation Management, and Housing, eventually formalizing into a member-based organization structure.

The LTRG was initially focused on coordinating emergency response, with the Housing Committee

[13] For more on LTRG, their formation and best practices, see <https://www.nvoad.org/wpcontent/uploads/longtermrecoveryguide-final2012.pdf>

88

focused on creating and disseminating accurate and timely information to help displaced residents find housing – at the time, demand was so high people were calling potential rentals as they evacuated – and coordinating shelter locations in Chico from the Red Cross shelter to tents in the Wal-Mart parking lot. The LTRG created a space for members to brainstorm, communicate, and foster interagency collaboration – critical, as there were nine different organizations and over 100 case managers providing disaster case management to survivors. In addition to coordination, the LTRG did direct service work when there were gaps in existing service provision.

In early 2020, the Camp Fire LTRG assessed its purpose and goals, reforming as the Camp Fire Collaborative to reflect a shift away from the emergency response focus of LTRGs. CHIP had been a participant in the LTRG since its inception, welcomed and recognized as a primary leader in the affordable housing space, given their experience with both single-family and multifamily development in the community and also an obvious member given their loss of property in the Camp Fire. As the Collaborative pivoted to tackle the rebuilding process, CHIP staff stepped in to co-chair the Housing Committee. Given the mass destruction of dwellings and displacement of residents after the fire, housing was a priority of the Collaborative's rebuilding work. To meet this need, the Housing Committee incubates collaborations, connects member organizations, and provides information to partners approaching the housing challenge in a variety of ways. CHIP's knowledge of state funding programs and the housing development process has proven invaluable. Particularly useful was CHIP's

89

ability to clarify the disaster credit tax process as the only recipient based in the region familiar with their use.

One of the members of the Housing Committee is Rebuild Paradise Foundation, a nonprofit established in 2019 to serve the needs of Butte County's disaster-affected residents after the Camp Fire. The Rebuild Paradise Foundation was modeled after Rebuild North Bay and was incubated through the North Valley Community Foundation with additional financial support from the Red Cross. The Foundation focuses on middle-income housing, providing resources, information, and advocacy on a variety of community development issues. To assist individual homeowners with rebuilding, they offer grants for pre-construction costs and septic infrastructure; a library of residential floor plans; and information on the availability of homeowner insurance (Rebuild Paradise Foundation, 2021). One of the results of relationships built in the Collaborative's Housing Committee is the Paradise Ridge Community Land Group, a partnership between Rebuild Paradise Foundation, Habitat for Humanity of Butte County, and CHIP that informs how to use donated land within the Camp Fire burn scar area for affordable housing or other community needs, such as parks and road continuations.

With over 1,600 Camp Fire victims remaining in the disaster case management process as of 2021, creating housing opportunities will continue to be a critical part of the recovery process. Housing Committee members continue to discuss the community's housing needs, share their own organizational approaches, and

90

find new ways to collaborate on innovative projects. The Committee recently informed the creation of a report entitled “The Impacts of Camp Fire Disaster on Housing Market Conditions and Housing Opportunities in the Tri-County Region” (Peloton, 2020). The regional study was a project identified in the Town of Paradise’s Long-Term Recovery Plan and identifies housing challenges affecting the region before, immediately after, and in rebuilding from the Camp Fire, identifying opportunities to address all three. “At the crux of all the housing challenges faced in the region, both pre- and post-fire, is the availability of affordable housing options,” the report states, going on to emphasize that among many housing issues, rebuilding the “missing middle” of reasonably priced market-rate housing will be critical to the region’s economic recovery.

Severe disasters can often lead to significant new partnership opportunities. The Camp Fire Collaborative offers a powerful model for how a group of organizations can build off their experience providing emergency response and create partnerships that are durable for years to come. The Camp Fire Collaborative continues to serve as a central coordinating space for organizations coming into the community to rebuild, providing a ground-breaking and powerful place for information sharing and a nexus between nonprofits, social service providers, the public and private sector. The Collaborative also demonstrates how valuable affordable housing providers are to recovery planning. Lack of housing, particularly affordable housing, remains the biggest barrier

“Lack of housing, particularly affordable housing, remains the biggest barrier to the community’s recovery”

91

“...The devastation of a disaster and urgency of rebuilding can focus and alter a community’s vision of what kinds of development are desirable and possible.”

to the community’s recovery. CHIP’s experience and leadership has been critical to the success of the Camp Fire Collaborative and its Housing Committee.

Opportunities- Community-wide destruction and the difficulties of rebuilding are difficult to fathom, yet devastated communities provide close to a blank slate for new opportunities. CHIP is significantly expanding their affordable housing capacity in the next three years. The ongoing structure of the Collaborative has led to better integration of programs and goals across participants. People are more open to collaboration and more voices and participation are encouraged. CHIP’s experience is that there has been a greater availability of private resources to rebuild the community because of the magnitude of devastation.

The Town of Paradise led the effort to create a Long-Term Community Recovery Plan. Such plans are required for a jurisdiction to receive many state and federal disaster recovery grants and can take up to a year. Paradise’s Town Council was able to leverage community assets, including philanthropic funding, cross-sectoral partnerships, and the passion of its residents to create a community-informed, approachable, and complete Plan with remarkable speed (Von Kaenel, 2019). With funding from the Butte Strong Fund, the Town was able to bring in Barry Long from Urban Design Associates to help facilitate a robust, 5-month long community engagement and visioning process. CHIP and other members of the Camp Fire Collaborative were some of the plan’s many partners, participating in and volunteering at community engagement events. The ensuing consensus vision was supported by five goals that framed the selection of recovery projects – to make Paradise safer, more welcoming, stronger, better, and greener (Urban Design Associates, 2019). The Plan emphasizes rebuilding Paradise to have more diverse and affordable housing; a more walkable downtown; and expanded bus routes. Smaller communities can sometimes be resistant to affordable housing development, density, and mixed-use projects. The priorities elevated in the Long-Term Plan demonstrate the way the devastation of a disaster and urgency of rebuilding can focus and alter a community’s vision of what kinds of development are desirable and possible.

92

Resources- Emergency resources were readily available in the beginning but have been more challenging to access in the long-term with the major delays of federal funds. Rural communities like Butte County do not have large corporations, foundations, and many wealthy individuals, so fundraising for disaster recovery is more difficult. State funding for disaster planning and recovery is needed to augment private and federal funds and facilitate a comprehensive recovery.

Effective Practices and Lessons- Organizationally, CHIP has developed a series of practices and recommendations to improve their capacity to both plan and respond to fire and other natural disasters that serve a model to other affordable housing providers in disaster-prone areas. Their experience in Butte County's disaster response and recovery process also provides broader lessons applicable to communities affected by disasters:

1. Start a community vision and exercise process when residents, organizations, and leaders are ready to rebuild. Affordable housing providers are key players in any community visioning process. Such as process leads to shared vision and collaborative responses to rebuilding as well as the opportunity to rebuild more equitably.
2. Formalize emergency plans, evacuation routes, shelter in place policies, and ways to aid residents in finding new lodging. These practices will become invaluable if new disasters occur.
3. Build capacity and support for affordable housing

93

in advance. It takes time to complete affordable housing projects and accumulate the necessary capacity, resources, and successes an organization brings to the project. There is enormous demand for affordable housing in Paradise and surrounding communities.

4. Communication is critical for keeping people informed and protecting them. It is important to develop outlets so timely and accurate information can be shared with residents and other stakeholders.

5. Recovery is a long-term effort and requires strong leadership and effective planning. Leaders need to think about a horizon of two years, five years, and ten years to assemble resources that can be deployed in the broader community revitalization efforts.

6. Cultivate a creative and adaptable organizational culture. Even effective organizations can get stuck in current practices and procedures, but organizations cannot continue to do things the way they always did thing. When disasters occur, they will force organizations to become more flexible and responsive, a transition that will be easier for organizations that already hold these values.

7. Partnering with public entities to develop solutions for the community is not always easy, but it is essential.

8. Prepare for the disaster before you are in a disaster. Disasters are increasing in frequency and magnitude. Building capacity for recovery takes time and partnerships. Developing partnerships early by collaborating on preparedness, mitigation, and pre-

94

disaster recovery planning efforts ensures those necessary relationships and structures will be in place to support recovery after a disaster.

COVID-19 response- CHIP was able to quickly adapt their operations to remote (home) locations. They worked immediately on developing support systems for employees to help with the economic, social, and emotional challenges, instituting monthly meetings to help keep staff connected. They helped several employees with Family Medical Leave.

As part of their response to the COVID-19 pandemic, CHIP has strengthened their outreach to residents. They developed lending libraries; helped residents access computers and tablets; provided personal protective equipment to all residents; and continually updated resource referral information. In addition, CHIP provided direct rental and food assistance to residents who applied for support.

Their experience with the disastrous fires in 2018 has positioned them to be an effective responder to new disasters like COVID-19. Each new disaster provides opportunities to evolve and grow. For CHIP, the pandemic has forced the organization to re-examine its delivery of Resident Services and reconsider how it can provide direct support to vulnerable residents. As the Camp Fire exposed a need to further develop capacity in its development departments, COVID-19 has revealed a gap in capacity in Resident Services. Both disasters have also revealed the strengths of CHIP – experienced staff, dedication, and strong foundation.

CHIP starts with the premise that it is their responsibility to serve the community, and their approach is to rise to the challenge and meet the needs presented by a disaster.

95

CASE STUDY: COMMUNITY HOUSINGWORKS

OVERVIEW

Community HousingWorks is one of the largest affordable housing developers in San Diego County. They have worked closely with the farmworker community in Northern San Diego County. Rural San Diego County experienced a series of major fires from 2003 to 2009, and fortunately none of the Community HousingWorks apartment complexes were damaged. After the San Diego County fires, the organization placed a major emphasis on disaster planning and response, but it has diminished substantially over time.

BACKGROUND

Founded in 1988, Community HousingWorks has developed over 3,700 units of housing in 42 apartment complexes throughout San Diego County and the state of California. They have also assisted over 1,300 individuals become homeowners through homebuying services sponsored with NeighborWorks America and helped 5,000 homeowners avoid foreclosure. Community HousingWorks' roots are based in providing farmworker housing in the Northern Part of San Diego County. Community HousingWorks origins include organizing and helping develop formal and informal networks to serve .



96

farmworkers. Agricultural communities in San Diego County can often look different than in other parts of the state as agricultural operations tend to average 10 acres with a focus on growing specialty products due to the increasingly high costs of land and water. In the past, Norther San Diego was known as a primary location for growing avocados, and while smaller farms still grow this specialty crop, most avocados are now primarily grown in Mexico.

Disaster Initiatives- The organization's major focus in disaster planning and response was to support the farmworker community. Northern San Diego County experienced the Cedar Fires that lasted from October to November 2003, burning 273,216 acres and destroying 2,320 homes. At the time, the Cedar Fires were the most destructive in California history and remain the cause of the fifth most fatalities and fourth most destructive fire in California history. Multiple fires in Southern California occurred in October 2007, resulting in hundreds of homes being destroyed in San Diego County. The fires in 2007 came close to destroying farmworker housing.

Also adding to the impact of fires, San Diego County has experienced an increased number of droughts and the cost of water has risen. Increased costs of water have had a disproportionate impact on agricultural workers. Although not formerly considered a natural disaster, the impact of pesticides can cause serious respiratory issues for agricultural workers.

Community HousingWorks instituted plans and policies for making their housing more fire resistant and created evacuation plans for residents. They noticed that one of

97

the major challenges in helping farmworkers with disaster response is that there are complicated issues around immigration, language, and cultural learning. A number of the farmworkers were from indigenous communities in Mexico including Oaxaca and Michoacán and spoke languages other than Spanish. Community HousingWorks has helped train Red Cross volunteers on how to better work with farmworker and immigrant communities, since many Red Cross volunteers have limited experience in working with these communities. Community HousingWorks supported immigrant community members with United States citizenship and the related documentation in accessing federal disaster related services.

Capacity – Community HousingWorks was part of an initiative funded by the California Endowment to build the capacity of farmworkers in housing and health and disaster response. Local healthcare clinics provided care to residents and Community HousingWorks provided strong disaster-related advocacy and benefits navigation, as well as providing resource information and additional supports. For a short period, Community HousingWorks functioned as a food distribution site serving community members impacted by the fires. CEO, Sue Reynolds, said, “after a disaster you do what you have to do to help people.”

Partners- Another important partner is the San Diego County Farm Bureau, which has developed progressive policies for a number of years. They have focused on small farms – specifically helping farms access water. The vast majority of San Diego’s farmworkers are employed on small farms growing specialty crops. As

98

discussed, health clinics were strong partners for reaching low-income community residents and helping them navigate the disaster process.

Program and Policy- Community HousingWorks serves as a bridge between government, non-profits, and community residents who live in Community HousingWorks projects as well as farmworkers and other low-income families. Immigrant communities – whether because of immigration status or language barriers – are often unable to access vital resources in the aftermath of disasters, and advocacy for these community members is critical. With worsening climate change, rural disasters, notably fire and drought, will continue to disproportionately impact low-income communities of color, especially immigrant communities that do not have access to public sector resources.

Challenges- One of the major challenges is to make disaster planning and preparedness a priority given all the other responsibilities of an affordable housing developer. Readiness is a critical factor in disaster planning since disasters are unpredictable. Knowing who to communicate with can be a challenge given the plethora of individuals and organizations involved in disaster recovery. This becomes more complicated in working with an immigrant population with different languages and cultures.

Opportunities- Social media is an important tool for communicating with residents, and other constituents. What's App is a good tool within social media to reach new populations. There is a growth of informal networks and its affordable housing networks can reach

99

key populations before, during, and in the aftermath of disasters. Community organizing and engagement is not the first thing experts think of when planning for disasters. Community organizing is an essential tool for the disaster planning and recovery toolbox. There is an opportunity to generate more national and state resources with a growing need for advocacy efforts led by national organizations like Unidos and Housing Assistance Council, state level organizations like CCRH, and local affordable housing and community development organizations.

Effective practices and lessons learned-

1. Relationships Count- In a crisis people will reach out to those they know. It is important for the affordable housing development organization to have strong relationships with local government and other stakeholders to help their residents respond and adapt to the evolving circumstances.
2. Trust- Residents and leaders need to trust each other both in planning and responding to a disaster. Trust is the glue that helps people work well together. People are resourceful but they do need supports during a disaster.
3. Put in the time- Organizations face multiple pressures and challenges, but it is critical to put in the time before the disaster. Planning and preparedness are essential and if you do not have a plan your organization will be less effective with helping your residents and the community.
4. Informal networks are important- Community Housing Works partners closely with local health clinics who serve very low-income farmworkers and residents. They have established trust, relationships, and knowledge of the community, especially farmworker families who do not live in Community HousingWorks housing. People may need evacuation assistance, resources for temporary housing and services including food, transportation, and health services and informal partnerships will be critical.

100

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101

CASE STUDY: NORTHERN CIRCLE INDIAN HOUSING AUTHORITY

OVERVIEW

Northern Circle Indian Housing Authority (NCIHA) offers an innovative approach to building quality affordable housing for the seven tribal members that participate with Northern Circle. The tribal communities started experiencing fire disasters in 2017, which continued in 2018 and 2019. Northern Circle has is building their planning and response capacity to natural disasters given the impact of climate change in rural communities throughout Northern California. This capacity has turned out to be timely with the onset of COVID-19.

BACKGROUND

Northern Circle Indian Housing Authority was founded in 1978 by the Pomo Council in Mendocino County to build housing on 12 different Indian reservations in Northern California. Today, NCIHA serves 7 tribes in Mendocino (Sherwood Valley, Rancheria Band of Pomo Indians, Hopland Band of Pomo Indians, Guidiville Indian Rancheria, Redwood Valley Little River Band of Pomo Indians and the Manchester Band of Pomo Indians); and Butte County (Mooretown Rancheria of Maidu Indians and Berry Creek Rancheria of Maidu Indians of California). The organization is located in Ukiah, California, in Mendocino County. Northern Circle started with HUD housing on the reservations, and they have built 377 units, manage 183, and have over 90 units of housing currently in the predevelopment stage.



102

Northern Circle's work takes place in a context of tribal land alienation. Several California tribes were terminated, losing their federal recognition, and having their tribal land distributed to individual tribal members in fee. The land that tribal members received was not suitable for development since it was often mountainous and lacked water and electricity. Northern Circle has overcome numerous obstacles to develop housing for tribal members. The houses have been built on trust land, which takes longer to develop given land use and tribal issues. In 1996, Northern Circles expanded their housing programs with the introduction of the Native American Housing Assistance and Self Determination Act.

Disaster Initiative- Northern Circle and their tribal members started experiencing major fires in 2017, 2018, and 2019. The Redwood Complex Fire of 2017 burned six homes at two sites, three of which were reconstructed in 2019. The wildfires in the last three years have significantly impacted the consortium of Tribes and their membership, both on and off the reservation. Northern Circle has assisted in providing emergency services and assisting the Tribes with coordination with numerous local jurisdictions. They helped residents who were evacuated find hotels, water, and masks given the horrible air quality that lasted for an extended period. Northern Circle provided shelter services, coordination, and advocacy support to tribal members in Mendocino County.

By 2018, Northern Circle staff realized that disaster planning, preparedness, and response was becoming a core activity for Northern Circle given the frequency

103

of fires due in part to climate change and more conducive conditions for fires. Northern Circle was able to hire, through a program specialist position, an individual who is FEMA trained to assist in disaster planning for Northern Circle to help their residents and their consortium Tribes and their membership prepare and respond to fires and other natural disasters.

Capacity- Northern Circle staff have become increasingly knowledgeable about disaster planning and response given the frequency of fires in the past few years. The FEMA trained position was very timely in light of fires and COVID-19 pandemic. Additionally, Northern Circle was the first tribal entity trained by UCLA to develop a mitigation plan to help members of the seven tribes currently part of Northern Circle responds to adverse community challenges from natural disasters. The staff has been able to provide training and technical assistance to tribal members including helping them get insurance, communicate resources and community responses via a Facebook page that members can access, and attracting financial and technical resources that members can utilize in the aftermath of the various disasters.

The strengthening of Northern Circle disaster capacity has been very timely with COVID-19 19. Northern Circle staff have had the challenge of completing seven separate CARES Act planning applications that have to be tailored to each tribal community. The COVID-19 response work has been divided into two phases. The first phase is to help residents and Tribal membership access the PPE program, provide cleaning and health supplies, and

104

address the issue of food insecurity and food sovereignty through gardens. Staff have had to be careful since they have gone into homes to help people not knowing whether family members had COVID-19. The second phase is helping with housing challenges to access manufactured housing including tiny homes, emergency payments for utilities, supplies in response to a positive case and or outbreak, and other activities that prepare for, prevent, and respond to the spread of COVID-19. Since March, Northern Circle has incurred, beyond the tasks identified in the annual Indian Housing Plan, an additional 2,174 deliverables in response to the pandemic.

Partners- Northern Circle's major partners include CCRH, which has provided funding, training, and technical support. Rural Community Assistance Corporation (RCAC) has provided strategic planning support and training on water and wastewater programs. Additionally, RCAC supports the Tribal Housing Excellence Academy to expand development opportunities for Northern Circle and other tribal organizations. They help identify new funding sources. UCLA (see capacity section) has been a strong supporter of Northern Circle. Feed Sonoma and Mendolake Food Hub provide food and fresh vegetables to tribal members that Northern Circle supports.

Programs/Policy- Each tribe that participates with Northern Circle has different policies. Northern Circle has tribal consultations with each individual Tribe, and craft unique programs and policies for the housing activities and programs for their membership,

105

including but not limited to tenant based rental assistance, new construction, down payment assistance, property management and maintenance. The approach that Northern Circle utilizes is hope, healing, and housing drawing on the rich tribal cultural practices. Northern Circle operates as an intermediary between public sector programs and tribal leadership.

Challenges- One of the major challenges that Northern Circle faces is to build capacity for tribal members with affordable housing and community services. Another challenges that Northern Circle and its members face is accessing county and state government resources to be deployed for housing and community revitalization. It has been difficult to get resources deployed for tribal activities. There has been progress on the affordable housing front.

Opportunities- The COVID-19 pandemic has reminded Northern Circle about the significance of hope and healing as an integral part of their affordable housing strategy. Staff has been empowered to help residents meet their health and economic challenges. Their maxim is “all hands-on deck” given the enormous needs of the respective communities. This has led to increased coordination among staff and members.

Lessons- The major lessons of Northern Circle’s disaster work (fire and COVID-19) include:

- 1. Relationship building-** Elizabeth offered a pithy quote that “change comes at the speed of trust.” Northern Circle has unique relationships with each of the seven tribes that make up Northern Circle.

106

2. Customized work- The small staff has to customize their work with each individual tribe, which requires a lot of communication and patience. This is especially true with COVID-19 response.

3. Substantial and significant- The work needs to be substantial and significant to make both make an impact and benefit the unique needs of tribes and their members. COVID-19 has provided an important testing ground for Northern Circle continuing to make a significant difference in housing and services.

4. Importance of cultural competency- Elizabeth, the Executive Director excels in cultural competency and Northern Circle is an important bridge between Tribal members and the larger society.

107

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110

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111

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