Developing an Equitable Wildfire Risk Mitigation Program

Recommended actions from a pilot program, research and literature review

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The content and opinions expressed herein are those of the authors and do not necessarily reflect the position or the policy of those funders and administering organizations, and no official endorsements should be inferred.

Okanogan County Fire District 6 crew fights Carlton Complex fire. Photo by S.M. Jones, 2014.

PREFACE

Several years ago, a fire preparedness practitioner with whom I work shared with me a disturbing exchange she had with a community resident. She was confronted by a man whose elderly mother had lived for decades far from any town, at the end of a narrow road, in an old wooden house surrounded by highly combustible vegetation. He was upset because his elderly mother had called him in tears after she received a wildfire risk assessment that showed she needed to do a lot of work to reduce the wildfire risk to her home and property. The man's mother believed that if a fire came near her home, she would die in that fire. Neither the man nor his mother had the physical or economic means to implement the extensive fuel reduction and home hardening mitigation work identified by the assessment. The man angrily asked my colleague a compelling question: "What good is it to tell my aging mother everything she needs to do to protect her home when neither she nor I can do anything about it?" This experience has become all too common among fire preparedness professionals, including myself and others across Washington State with whom Fire Adapted Methow Valley works.

Here in the Methow Valley, as in many other areas throughout our state, wildfire and its impacts have been intensifying at a dramatic rate.

> *Over the last decade, wildfires have grown larger and increased in intensity and destructiveness throughout Washington state. The annual acres burned in our state illustrates this alarming trend. In the 1990s, an average of 86,000 acres burned annually. In the 2000s, the average annual acres burned increased to 189,000. In the last five years, the annual average grew to more than 488,000 acres burned. This trajectory of escalation continued last year, with wildfires burning more than 812,000 acres. Recent wildfires have devastated state, federal, tribal, and private lands, destroyed homes and property, and taken lives.* (Forest Health and Wildfires Act, 2021)

When I ask people who have lived in the Methow Valley for the past several years or more to identify recent events that have shaped their perceptions of this fire-prone, rural mountain valley, many immediately bring up the 2014 fire season. That season, the Carlton Complex fire opened our eyes to how swiftly and easily a wind-driven wildland fire can move across the landscape and devastate the very places where we live, leaving scars on the land and on our collective psyche from the loss of life and far-reaching destruction.

> *[The] Carlton Complex fire burned down our valley, and in two days became the largest wildfire in state history. Lightning strikes had started many small fires, and when high winds arrived on July 17, fire starts exploded into fire storms, coalescing to burn over 160,000 acres and traveling nearly 40 miles in just nine hours.* (Prichard, 2016)

Ultimately the Carlton Complex burned over 256,000 acres, destroyed 350 homes, killed pets and livestock, and destroyed miles of vital agricultural fencing and infrastructure. The Methow Valley had no electricity or phone service for nine days (Holtz & Taguchi, 2020; Prichard, 2016).

The 2014 fire season heralded a new era of wildfire impacts to the Methow Valley and its community. During the last nine fire seasons spanning 2014 to 2022, over 473,480 Methow Valley watershed acres have burned[1], three firefighters perished and another was severely burned. The wildfire recovery and response work that began in 2014 under the leadership of Carlton Complex Long Term Recovery Group (now known as Okanogan County Long Term Recovery Group (OCLTRG)), and in collaboration with Methow Valley Long Term Recovery (MVLTR) and others (Goodman, 2015), has continued without interruption as new wildfires, some far larger than Carlton Complex, continue to impact the Methow Valley and all of Okanogan County.

As Prichard (2016) noted, the "severity and massive size of recent wildfires in our area have highlighted the importance of making our communities more resilient to fire." In the years since 2014, as wildfire recovery continues, OCLTRG, MVLTR, and other community organizations including FAMV, local agencies and neighborhood groups have focused on and developed momentum around preparing for and safely coexisting with escalating wildfire risk (Stamper, 2019).

[1] Data from Washington State Department of Natural Resources' Washington Large Fires database, which, according to fire scientist Dr. Ana Barros, does not track all fires (pers. comm.). The acres burned are likely somewhat higher than the figure shown.

> *Many people got powerful evidence of the effectiveness of their [mitigation] work last summer when their homes survived the Cedar Creek Fire unscathed, even though the fire came within feet of some houses.* (Stamper, 2022)

It might seem that wildfire is a great equalizer since all community members in proximity to a wildfire are affected; however, neither wildfire impacts nor the ability to prepare one's home, oneself and loved ones are experienced equally by all.

Any programs or efforts to support our community's ability to live resiliently with fire need to consider the question, "Who is being included and who is being excluded?" If the intention is to include everyone who lives in the community, then mitigation and other resiliency work needs to incorporate measures that bring equity to the outcomes of that work. In short, this means all residents, regardless of their circumstances, who they are, and their histories, must have access to the means to ensure that they, their homes and any surrounding land are prepared for wildfire.

This report reflects our effort to learn ways that a local, place-based wildfire risk mitigation program can be inclusive and equitable.

Kathryn Joy Heim, Program Coordinator
Fire Adapted Methow Valley

Washington Department of Natural Resources flags area to be treated. Photo by K. Heim 2020.

Washington Department of Natural Resources-supervised AmeriCorps Crew working as Washington Conservation Corps. Photo by K. Heim, 2021.

TABLE OF CONTENTS

Liberty Bell High School Keyclub members, younger brother and teacher removing leaves, duff and pine needles from HIZ 1. Photo by K. Heim, 2022.

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Okanogan County Fire District 6 (ocfd6.com)
Okanogan County Long Term Recovery Group (okanogancountyrecovery.com)
Outward Bound (nwobs.org)
Team Rubicon (teamrubiconusa.org)
University of Washington Program on the Environment, Capstone Program (envstudies.uw.edu/capstone-experience/)
Washington Department of Natural Resources (dnr.wa.gov)
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Contributors and Advisors
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Cover photos provided by K. Heim, FAMV
Clockwise from top left:

- Three Rivers Arbor Care crew chipping felled pine trees (2022)
- Multigenerational volunteer crew of Kiwanis members and Methow Valley School District teachers and students (2022)
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A Reflection and Land Acknowledgement

Researching and writing this report has affected us deeply – it has taught us how to go beyond our own personal perspectives about living in this valley, which reflect our own empirical realities, history and biases, but do not reflect the realities of so many generations of people who have called and call this valley home.

The original Methow People and their descendants have lived in the Methow Valley for over 500 generations or approximately 13,000 years (Bastian, 2015; Shafer Historical Museum, 2023). The Methow or spaƛmulʼəxʷəxʷ people lived in small groups and moved throughout the landscape to gather their needed resources, carefully stewarding the land (Johnson, 2021). For hundreds of generations the "indigenous people of the Pacific Northwest shaped their lands with many intentional practices … [including controlled burning to make] space for new growth and wildlife" (Secaira, 2019).

Starting in the 1700s, Euro-Americans, initially trappers and adventurers, pushed westward across the North American continent to the Pacific Northwest. By the late 1800s, white colonization and U.S. government actions forcibly removed the Methow People from their traditional lands including the Methow Valley. Additionally, from the late 1700s to early 1900s, a succession of smallpox and flu epidemics introduced by Euro-Americans swept through this region and killed approximately 75 to 90 percent of the Indigenous population over the course of three to five generations, upending lives and practices, including the Methow people's traditional methods of land stewardship and management (Bastian, 2016; Boyd, 1978; Hart, 2017).

Meanwhile, European settlers introduced, and the U.S. government institutionalized, land and forest management methods grounded in a value system that strived to eliminate fire from the landscape (Smith, 2017). In 1979, anthropologist Jay Miller and Methow Indian elders visited the Methow Valley. Some of these elders had not been in the valley for fifty years. After they had traveled about half of the valley, one elder became upset, lamenting, "When my people lived here, we took good care of all this land. We burned it over every fall to make it like a park." Miller follows with, "Every Methow I talked to after that confirmed the regular program of burning" (Boyd, 1999).

Fast forwarding to present times, a "chronic lack of fire in Western landscapes" has enabled buildup of brush and trees that, due to more pronounced annual droughts, dry out and are receptive to fire ignition and spread; additionally, wildfire seasons are weeks to months longer on average and extreme weather events – lightning storms and strong winds – are becoming more common (Prichard et al., 2021).

In the last few years, some local, state (California), and federal government agencies have recognized the need to learn from, but most importantly, to "partner with tribes to reintroduce the Native American tradition of prescribed, cultural burns, which are purposefully set, low-intensity fires" to "help make 'forests more resilient' and decrease the likelihood of future wildfires" (Elassar, 2022). Authentic partnerships grounded in inclusivity, equity and genuine incorporation of traditional ecological knowledge are a hopeful path forward for sustainably managing fire in a landscape that a diverse community now calls home.

Overstocked understory presenting wildfire risk. Photo by K. Heim, 2022.

A NOTE ON LANGUAGE

Washington Department of Natural Resources pre-implementation planning. Photo by K. Heim, 2022.

Glossaries typically are relegated to an appendix; however, we want to call out the importance of language and ask that you ground yourself in the definitions below before you dig in. They provide important context for the words we have intentionally chosen. We strived to use inclusive language that does not ignore or erase people's histories and realities. We also aimed to use accurate descriptors rather than words that connote negative, disempowering or condescending meanings. We have made every effort to choose our words carefully and at times have used specific terms because they are part of the social sciences or the wildfire mitigation vernacular.

The definitions we have provided below are, unless otherwise noted, direct quotes from several authoritative sources listed at the end of this section. After each quote is a superscript numeral that corresponds to the source document in the list. We crafted three definitions based on multiple source documents and they are each denoted with an asterisk (*).

Disability

- a physical, mental, cognitive, or developmental condition that impairs, interferes with, or limits a person's ability to engage in certain tasks or actions or participate in typical daily activities and interactions[1]
- having a physical or mental impairment which has a substantial and long-term adverse effect on a person's ability to carry out normal day-to-day activities[2]

Equality

- the state of being equal[1]
- the condition under which every individual is treated in the same way, and is granted [the] same rights and responsibilities, regardless of their individual differences[2]
- each individual or group of people is given the same resources or opportunities[3]
- everyone is treated exactly the same way, regardless of need, background or individual difference[4]

Equity

- freedom from bias or favoritism[1]
- Individuals are provided the resources they need to have access to the same opportunities, as the general population. While equity represents impartiality, i.e., the

distribution is made in such a way to even opportunities for all the people [sic]. Conversely equality indicates uniformity, where everything is evenly distributed among people.[2]

- recognizes that each person has different circumstances and allocates the exact resources and opportunities needed to reach an equal outcome[3]
- recognizes that everyone begins life from a different place in society, thus they need different things to succeed[4]

Home

- one's place of residence[1]
- the place – specifically the house, apartment, or other structure – that is the usual residence of a person or persons*

Inclusion

- the act or practice of including and accommodating people who have historically been excluded[1]
- authentically bringing traditionally excluded individuals and/or groups into processes, activities, and decision/policy making in a way that shares power[2]

Income

- The sum of earnings from a job or a self-owned business, interest on savings and investments, payments from social programs and many other sources. It is usually calculated on an annual or monthly basis.[5]
- household income is directly associated with the number of financial resources that are available for households' risk mitigation and disaster recovery actions[6]

Marginalized

- located on the edge, beyond boundaries, on the outside[1]
- The process by which minority groups/cultures are excluded, ignored or relegated to the outer edge of a group/society/community. A tactic used to devalue those that vary from the norm of the mainstream, sometimes to the point of denigrating them as deviant and regressive.[2]

Natural disaster

- a sudden and terrible event in nature … that usually results in serious damage and many deaths[1]
- A well-documented and fundamental canon to disaster research is that there is no such thing as a natural disaster. Rather, disasters are the direct result of society-made vulnerabilities, such as poor structural design and poor land-use planning, as well as a long history of policies distilling social inequalities, such as systemic racism.[6]

Overburdened populations/communities

Minority, low-income, tribal, or indigenous populations or geographic locations in the United States that potentially experience disproportionate environmental harms and risks. This disproportionality can be as a result of greater vulnerability to environmental hazards, lack of opportunity for public participation, or other factors. Increased vulnerability may be attributable to an accumulation of negative or lack of

positive environmental, health, economic, or social conditions within these populations or places. The term describes situations where multiple factors, including both environmental and socio-economic stressors, may act cumulatively to affect health and the environment and contribute to persistent environmental health disparities.[7]

Underserved populations/communities

Groups that have limited or no access to resources or that are otherwise disenfranchised. These groups may include people who are socioeconomically disadvantaged; people with limited English proficiency; geographically isolated or educationally disenfranchised people; people of color as well as those of ethnic and national origin minorities; women and children; individuals with disabilities and others with access and functional needs; and seniors.[8]

Vulnerable

- Capable of being physically or emotionally wounded. Open to attack or damage.[1]
- in the context of this report, the vulnerability is to hazard events, especially wildfire and all of its myriad impacts*
- People, communities, and populations are not inherently vulnerable. Vulnerability is not a permanent or characteristic attribute. People, communities, and populations can, however, experience vulnerability, but no population group … should be viewed merely as a so-called victim group or a so-called rescue group.*

Social vulnerability

- the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impacts of a natural hazard[6]
- Nothing [about social vulnerability] is inherent in one's race, ethnicty, income, or education level that precludes an appropriate response in an emergency. All people are made up of a constellation of charateristics that enable them to assist in some situations but require assistance in others.[9]
- the socioeconomic and demographic factors that affect the resilience [or lack of resilience] of communities[9]
- the social, economic, and demographic characteristics that influence the ability of individuals or communities to prepare for, respond to, and recover from hazards[10]
- the susceptibility of social groups to potential losses from hazard events or society's resistance and resilience to hazards[11]

Property

- something owned or possessed[1]
- the lot, parcel, land where a person lives, regardless of whether their legal right to live there is as landowner or as tenant*

Wealth

- the abundance of valuable material possessions or resources[1]
- The value of assets owned by a family or an individual (such as a home or a savings account) minus outstanding debt (such as a mortgage or student loan). [A]n amount that has been accumulated over a lifetime or more (since it may be passed across

generations). This accumulated wealth is a source of retirement income, protects against short-term economic shocks and provides security for future generations. As of 2016, upper-income families in the U.S. had 7.4 times as much wealth at the median as middle-income families and 75 times as much wealth as lower-income families.[5]

Sources (also found in **WORKS CITED**):

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Team Rubicon volunteer limbing mature trees overhanging ingress-egress. Photo by M. Chiu, 2022

Okanogan Conservation District conducting a home risk assessment. Photo by K. Heim, 2022.

LIST OF ACRONYMS

CCD	County Census Division
CD	Conservation District (as in Okanogan Conservation District)
CDC	Centers for Disease Control and Prevention
CDC SVI	Centers for Disease Control and Prevention Social Vulnerability Index
CFSC	California Fire Safe Council
EJCPS	Environmental Justice Collaborative Problem-Solving
EMP	Equitable Mitigation Program
FAMV	Fire Adapted Methow Valley
FEMA	Federal Emergency Management Agency
FPL	Federal Poverty Level
FSC	Fire Safe Council
GIS	Geographic Information System
HIZ	Home Ignition Zone
IFPL	Industrial Fire Precaution Level

MOU	Memorandum of Understanding
MV	Methow Valley
MVLTR	Methow Valley Long Term Recovery
MVSD	Methow Valley School District
NFPA	National Fire Protection Association
NRI	National Risk Index
OCLTRG	Okanogan County Long Term Recovery Group
SoVI®	Social Vulnerability Index for the United States (Cutter et al., 2003)
TWCES	TwispWorks Comprehensive Economic Study of the Methow Valley
US EPA	United States Environmental Protection Agency
USFS	United States Forest Service
UW	University of Washington
WA DNR	Washington State Department of Natural Resources
WUI	Wildland Urban Interface
WWU	Western Washington University

Methow At Home volunteers removing juniper from steep bank. Photo by K. Snover, 2020.

INTRODUCTION

Fire Adapted Methow Valley

Fire Adapted Methow Valley (FAMV, www.fireadaptedmethow.org) is a project of the Washington Resource Conservation and Development Council, a 501(c)(3) nonprofit organization. FAMV was formed in 2018 in the Methow Valley (MV), a region nestled in the dry eastern slopes of the North Cascade Range in Washington State. FAMV provides a suite of programs and projects to the MV community, including resources, collaboration and learning opportunities to help enable community members to live safely and well with fire. We currently serve roughly the same region as Okanogan County Fire District 6, covering over 300 square miles that encompass a string of small towns and neighborhoods running the length of the upper to mid-valley. This region is surrounded by thousands of square miles of highly combustible forested and shrub steppe lands.

One of FAMV's first projects was to collaborate with two local community support organizations – Methow At Home and Winthrop Kiwanis, with additional participation by Keyclub and Methow Episcopal Youth Group – to help elders on limited incomes prepare their homes and landscapes for wildfire. Our limited collaborative capacity resulted in only two properties being treated, one each in 2019 and 2020. FAMV recognized the need for a far more robust program, and in late 2020, began exploring how to develop and run an equity-based wildfire risk mitigation program, hereafter referred to as an "equitable mitigation program" (EMP), that could meet the following core objectives:

- work toward equity in local mitigation efforts to reduce wildfire risks to historically marginalized, underserved and overburdened community members who face barriers to mitigating those risks
- work toward equity in the EMP workforce to support local, historically marginalized, underserved and overburdened youth by removing barriers to accessing career pathways, living wages, and options for living and performing essential work in the Methow Valley
- maximize the scope and timing of mitigation achieved to reduce wildfire risk on a meaningful and cross-boundary scale
- foster a widespread, whole community approach to fire adaptation so that all Methow Valley residents can live resiliently with wildfire

In 2021 and 2022, FAMV, with the unflagging support and collaboration of other local entities and individuals (see **ACKNOWLEDGEMENTS**), carried out a multifaceted effort to learn about the following:

- underserved populations in our area experiencing vulnerability to wildfire and its impacts, whose economic and social circumstances, and history, prevent them from performing or paying for mitigation actions
- the challenges faced by a growing number of youth in the Methow Valley in overcoming barriers to accessing sustainable career pathways
- the best approaches and practices for developing and managing an equity-based wildfire risk mitigation program suited to the challenges and strengths of this place, the community, and our own capacity and objectives

FAMV's multifaceted effort consisted of the following three elements:

Pilot Equitable Mitigation Program

Over 19 months, FAMV ran a pilot EMP serving clients whose situations reflected many of the socio-economic challenges that MV residents face. FAMV (1) recruited six pilot program client households (homeowners and renters) who met the program's evolving eligibility criteria, (2) planned treatments for fuel reduction, creation of defensible space and minor home hardening based on wildfire risk assessments conducted by state agencies for those clients' very diverse properties, and (3) coordinated 20 mitigation work parties (ranging from 2 hours to 5 days) to complete the prescribed treatments with the help of a diverse workforce of state agency staff, community organizations, paid and volunteer mitigation work crews, pilot EMP clients and family members, and contractors. All combined, the mitigation workforce contributed over 1400 hours to the pilot EMP.[2]

In addition, FAMV consulted throughout the pilot EMP with its core partners and advisors identified in our **ACKNOWLEDGEMENTS**.

Surveys and Interviews

FAMV conducted surveys and interviews (hereafter referred to as "research") to correlate what we were learning through our pilot program with a selection of organizations in western

[2] Approximate hours contributed by source: volunteers 350+, clients 250+, AmeriCorps crew members 280+, Washington Department of Natural Resources staff and crews 560+, Okanogan Conservation District staff 10, and contractors 30+.

states that facilitate or run wildfire risk mitigation programs (hereafter referred to as "Mitigation Organizations"). We identified and investigated five organizations that were demonstrably equity-intentioned, serving historically marginalized, underserved and overburdened community members that would likely not have the means to perform or pay for their own mitigation treatments (hereafter referred to as "Equity-focused Mitigation Organizations"). Their clients include people experiencing financial poverty, over the age of 60 or 65, living with disabilities, veterans, and/or people receiving assistance through governmental programs. We also included one other organization running a program through a landscape lens, focused solely on wildfire risk and client proximity to other treatments or to engaged fire adapted communities (hereafter referred to as "Landscape-prioritized Mitigation Organization"). Their focus raised important considerations for how our equitable mitigation program model could meet specific federal, state and local objectives for cross-boundary fuel reduction. One of the Equity-focused Mitigation Organizations also prioritized client properties based on their proximity to other mitigation treatments and fire adapted neighborhoods or Firewise USA sites.[3]

We interviewed representatives of and reviewed program materials from the six Mitigation Organizations, deriving best practices for running successful and sustainable local mitigation programs and achieving impactful results. Additionally, FAMV surveyed and interviewed

- a subset of the FAMV pilot EMP clients for feedback about their experiences, and
- 47 representatives of Methow Valley community-based nonprofit organizations with diverse missions that rely heavily on volunteers, regarding community needs, vulnerabilities, and strategies, and to learn best practices for
    - engaging and working with volunteers in the MV, and
    - identifying social vulnerabilities and performing on-the-ground wildfire and recovery actions.

Literature Review

In addition to evaluating Mitigation Organizations' input and materials, we also reviewed over 155 relevant documents and other media from a variety of sources, including media articles, scientific studies, agency and white paper reports, videos, organizational and professional network blogs and websites, laws and legislative reports, and published industry standards. The resources we drew from focused on identifying the roots of and addressing inequities in wildfire risk, mitigation, impact and recovery, as well as current mitigation strategies.

EMP Resources

Based on our pilot EMP, research and literature review, FAMV has prepared three resources: an EMP Development Report (this document), an EMP Toolkit and a Context-Objectives Matrix. Through the process of preparing these documents, FAMV developed (a) an understanding of EMP needs and feasibility in the MV; (b) possible ways for other localities to determine EMP structures, procedures, and objectives; and (c) best practices for developing and running a place-based EMP.

[3] A National Fire Protection Association recognition program that provides a collaborative framework to foster wildfire risk mitigation at the local level.

These resources are intended for

- FAMV itself as it moves forward to scale up our pilot EMP,
- communities of any size that are striving to adapt to living with wildfire,
- organizations, agencies and groups that
    - provide wildfire risk mitigation assistance, and
    - are working to remove barriers to equitable access to their programs and resources,
- grantmakers who currently fund wildfire mitigation programs, and
- policymakers who are positioned to
    - establish best practices for individuals and organizations whose behaviors directly influence wildfire risks, impacts and outcomes, and
    - seek or provide funding to support development and management of community-based EMPs.

Preparation of these EMP resources has required much more time, capacity, commitment and reflection than we ever imagined when we first set out to conduct and document a small local pilot EMP. That said, the preparation process itself has provided many valuable opportunities for additional learning, further influencing what we have prepared - as we integrated the pilot EMP lessons learned and information gained from our research and literature review, we recognized the need for additional guidance, research and reflection.

We consulted with subject matter experts, collaborative partners, and stakeholders whose insight and knowledge helped us further shape our findings and recommended actions, and reframe some of our perceptions and identify important equity issues.

These resources reflect our best efforts, with limited staff and funding capacity to dig deeply into very broad and complex issues. Since late 2020 when we initiated the pilot EMP, priorities and perspectives have been changing rapidly. Indeed, recent federal and state policy has shifted to require governmental agencies to integrate equity, inclusivity and environmental justice into all of their programs, policies and procedures. Methods for identifying populations that experience social vulnerability to hazard events have been evolving as well. Additionally, there are mitigation organizations with equity-intentioned programs beyond those that we consulted. In this report and the EMP Toolkit, we have strived to reflect current information up to June 2023.

EMP Development Report

The EMP Development Report provides the context for our EMP Toolkit described below. It includes

- an overview of methodology for our pilot program, research and literature review (see above),
- key takeaways from our literature review and from Mitigation Organizations in western states that facilitate or conduct mitigation treatments on private properties either of specific socially vulnerable populations or that present opportunities for landscape-scale treatments,
- specific locally relevant lessons learned and our in-depth findings and decision points, and
- recommended actions.

EMP Toolkit

Whereas the EMP Development Report focuses on all that we learned from our pilot program, research and literature review, our EMP Toolkit provides procedures, a suggested program cycle timeline (see also section **14. Program Management**) and examples of the necessary EMP templates and forms, agreements and spreadsheets. The EMP Toolkit can serve as a guide for the development and management of a scalable place-based EMP anywhere that wildfire threatens communities. Especially for those considering or developing a new EMP, we highly recommend reviewing the contextual elements offered in this report prior to accessing the specific resources in the EMP Toolkit.

Context-Objectives Matrix

Our pilot program and research revealed that an EMP's framework must be based on the unique characteristics of the targeted landscape and the community living there. Before we could understand and report on the findings of our pilot program, research and literature search, we needed to gain an understanding of the needs, strengths and challenges presented by the Methow Valley landscape, community and our own organization. We also needed to clearly identify FAMV's objectives for its MV-specific EMP. Our consideration of the realities of place, community and FAMV in conjunction with what we hoped our EMP would achieve helped shape our findings and recommended actions for the EMP's client base, structure, scope and procedures.

The most significant recommendation we have for any entity hoping to develop an EMP is that the founders/developers consider participating in an assessment similar to the one demonstrated in our Context-Objectives Matrix (Appendix B). Note that this matrix document is shared to illustrate our *process*, not content. It is a partial reflection of the creative conversations that ultimately informed this report and the EMP Toolkit, and that will guide our path forward locally.

Developing the MV-specific Context-Objectives Matrix led us to the following conclusions for our locality:

- The MV's likely EMP clients and workforce members, including local youth from historically marginalized, underserved and overburdened populations, need a consistently funded and available program that
    - provides technical assistance for risk assessment and treatment planning, an implementation workforce, and the necessary tools and resources needed for clients to prepare where they live for wildfire, and
    - removes barriers for historically marginalized, underserved and overburdened community members seeking employment/career path development in wildfire mitigation to access resources, mentors and means to develop skills needed for successful pursuit and attainment of sustainable career pathways and meaningful jobs with living wages.
- Continued growth of the MV population and built communities intermixed in the valley's wildlands and increasing wildfire risk require swift and scale-appropriate mitigation implementation to reduce fire ignitions, spread and intensity.
- Engaging community members in EMP mitigation work helps increase community-wide understanding of

    - how wildfire can impact our community members unequally, and
    - the need for everyone's active participation in developing strategies and taking individual and collaborative actions to reduce the wildfire risks to the MV's built areas and surrounding lands.
- EMP program capacity can be increased by reliance on the MV's strong culture of collaboration among numerous nonprofit and governmental organizations that serve our community's economic, social and emergency preparedness needs, as well as the needs of the MV's ecosystems and infrastructure.

Retardant drop over Carlton Complex fire. Photo by S.M. Jones, 2014.

BACKGROUND

Wildfire and Inequity

> *Vulnerability to wildfire is a function of the physical exposure to wildfire (wildfire risk), as well as the social, economic, and demographic characteristics that influence the ability of individuals or communities to prepare for, respond to, and recover from hazards (social vulnerability).* (Oregon State University, 2023)

Wildfire affects places and people in multiple ways. The impacts can be sudden, cumulative, long-lasting, subtle, insidious, swift, devastating, debilitating, life-altering or even life-ending. Impacts to individuals can include the following:

- loss of life (oneself, loved ones and pets)
- loss of one's sense of well-being and safety, including development of mental health disorders such as post-traumatic stress disorder
- harmful health effects from prolonged exposure to wildfire smoke
- the need to evacuate or to shelter those who have evacuated
- being left behind or forced to stay and work in dangerous situations
- damage or injury to or loss of homes, businesses, employment, livestock, grazing lands, fences, crops and recreation areas
- loss of usual support systems – families, friends, churches, clubs and affinity groups
- loss of livelihood
- loss of land and/or timber values that that provide retirement assets
- loss of access to necessities and services, and the infrastructure that supports them (e.g., power, food, drinking water, irrigation systems, cell and phone service, internet, hospitals, schools, transportation, roads, emergency services)
- additional loss, damage, dislocation and discomfort from postfire flooding, erosion, and mudslides

- incursions of weeds and displaced wildlife such as snakes, rodents and bears or other large predators

Wildfire impacts are not experienced equally by all. A suite of factors influences wildfire outcomes, including, but not limited to, access to emergency alerts, and having an emergency plan, a way to carry out that plan and a place to evacuate to. In addition, outcomes depend on the ability to retrofit one's home, reduce surrounding fuels and opportunities for ember ignition and fire spread, and provide safe ingress and egress. Those who have the ability or means to reduce wildfire risks and do so will likely have far better outcomes than their neighbors who cannot.

Additionally, wildfire and its impacts can amplify disparity that already exists within the community.

> *Social vulnerability research contends that the potential effects of hazards such as wildfire, weather events, or climate change, are magnified by social conditions that place certain populations at a disadvantage relative to others in their ability to manage risks, respond to hazards, and minimize losses. … Vulnerability is a compounding process because vulnerable people have limited access to the resources necessary for recovery following a hazard event, in turn, elevating their vulnerability to the next event.* (Coughlan et al., 2019)

> *While fire-prone places in the U.S. are more likely to be populated by higher-income groups, this fact threatens to overshadow the thousands of low-income individuals who also live in fire-prone places but lack the resources to prepare or recover from fire. In California, for example, many individuals in rural areas, low-income neighborhoods, and immigrant communities do not have access to the resources necessary to pay for insurance, rebuilding, or continual investment in fire safety, thereby increasing their vulnerability to wildfire. These disparities became very clear after the 2017 wildfires in Sonoma County, California, where price gouging on rentals worsened an already dire housing shortage.* (Davies et al., 2018)

The Methow Valley

The Place

The MV is comprised of mostly undeveloped land and natural habitats. Private residential land accounts for less than 10% of the valley, with the remainder predominantly agricultural and public forested and shrub steppe lands. The valley's topography combined with overgrown forests, past fuel management practices, and weather or climate-related events such as wind, high temperatures and drought lead to ecosystem health issues that make forests more susceptible to wildfire. More homes are being built in or adjacent to our highly combustible wildlands, expanding the wildland–urban interface (WUI) and significantly increasing the potential for loss of homes and life during wildland fires (Caggiano et al., 2020). Between 2000 and 2021, wildfire burned over 59% of the Methow watershed, compared to 3.7% burned between 1970 to 1999 (Methow Conservancy, n.d.). Meanwhile, scientific

modelling demonstrates that wildfires in the western states, including Washington, will increase in frequency, intensity, severity and size in the years to come (Halofsky et al., 2020; Marlon et al., 2012; Richardson et al., 2022).

Washington State Department of Natural Resources (WA DNR) has evaluated and identified the Methow Valley, Twisp River and Chewuch River landscapes as "high risk areas where high intensity fire could threaten human communities" (WA DNR, n.d.-a; see also United States Forest Service [USFS], 2022a; Watkins & Hersey, 2020). Within this high wildfire risk watershed are areas - MV neighborhoods and individual parcels - that present greater levels of risk to community members resulting from some or all of the following characteristics:

- difficult ingress/egress, with either one way in and out or conditions that make firefighter entry into and evacuation from the area challenging or even dangerous
- steep slopes with heavy fuel loads that will carry heat and flame swiftly up to built areas
- densely built areas with numerous wooden or mobile homes and other structures, each surrounded by combustible vegetation, firewood, and other human-made fuels
- areas where prevailing winds place homes and other assets at heightened risk
- remote areas that are far from fire stations or water sources for fire suppression
- areas close to potential ignition sources such as heavily travelled roads

The Community

Since time immemorial, the Methow Valley has been shaped by its inhabitants and their cultures, values and economies. Over 500 generations of Indigenous Methow People have lived in and cared for their traditional homelands in the MV. By the late 1880s, with Euro-American expansion into the Columbia Basin and the MV, many of the Methow People perished from a series of foreign epidemics or were forcibly removed from the MV (Bastian, 2016; Boyd, 1978; Hart, 2017; Shafer Historical Museum, 2023; see also ***A Reflection and Land Acknowledgement***, text box p. 5).

With Euro-American settlement in the MV, the post-contact economy morphed into resource extraction including trapping, logging, mining, ranching, small-scale farming and agriculture. In recent decades the MV economy has shifted again, this time from resource extraction to recreation- and tourism/service-based industries driven by amenity migration or in-migration of people in search of lifestyles and recreation. With this shift has come many other changes, such as "the growth of inequality in the valley along with an accompanying decline of social cohesion as [the MV] becomes increasingly split between those who do and those who do not have easy access to social support [and] economic security" (Sherman, 2021). Increasingly, the most recent in-migration appears to be marginalizing longtime residents, who are often – even if unwittingly – judged, excluded and unsupported by the new ethos of gentrification (Sherman, 2022).

The MV community's socioeconomic and demographic composition reflects its living history, and in some respects appears to be markedly different from the rest of Okanogan County. Consequently, MV-specific data regarding residents with high vulnerability to wildfire risks,

MV demographics, and economic and social characteristics are hard to come by and can be inaccurate.[4]

The best source of relevant MV-specific data we identified was the TwispWorks Comprehensive Economic Study of the Methow Valley commissioned in 2021 by the TwispWorks Board of Directors "to understand the main drivers of our economy and how these changes are impacting us" (Tate-Libby, 2021). Despite the difficulties of accessing MV-specific data, Tate-Libby (2021) was able to identify some socioeconomic patterns:

- 41% of homes in the Methow Valley are vacation and part-time residences.
- Wealth is concentrated in the incoming residents, while long-term residents and local families face increasing economic disparity.
- Salaries of those who work remotely are four to five times higher than local wages.
- Poverty is increasing among families with children and wage-earning families in general.
- Poverty is more prominent among children – around 30% of the MV's children live in poverty. This is over twice as high as Washington State overall (12.5%) and the national average of 14%.
- Nearly 40% of the population is over 60 years old, with 20% under 18.
- Because the Methow Valley lacks any higher education institution, 85-90% of high school graduates leave after high school.
- The Methow Valley is 95% White, 3% Hispanic and 0-1% Black, Native, Asian or Pacific Islander. These figures are dated and possibly unreliable because of MV circumstances that underrepresent people of color (e.g., undocumented immigrants or migrant farmworkers).

Moreover, a number of economic factors can shape what a resident's true economic state is. For example, a limited household income might need to cover disproportionately high housing and transportation costs, medical and caregiving expenses and/or expenses for multiple household dependents.

> *Living on service wages is difficult. Employees must choose between unskilled jobs with little upward mobility or becoming entrepreneurs themselves. Furthermore, they struggle to find affordable housing, childcare, and benefits in a tourist-oriented economy.* (Tate-Libby, 2021)

Residents in geographically high-risk areas (see *The Place* above) often reflect the MV's diversity and disparate socioeconomic means and circumstances. The confluence of wildfire risks stemming from both geography and socioeconomic factors results in some residents disproportionately experiencing vulnerability to potential wildfire impacts. For example, multiple pilot EMP clients reside on properties abutting undeveloped lands with high risk of fire ignition, intensity and spread. Meanwhile, they have lived in the same home for over 40

[4] The MV is a geographic region within Okanogan County that encompasses several small incorporated and unincorporated towns, multiple zip codes and two census county divisions (CCDs). Most data accessible for this area pertains to the county as a whole, the individual CCDs, specific incorporated towns or the Methow Valley School District. Some sources of relevant data represent such a small sampling of the population base, reducing the reliability of that data.

years, and do not have the economic means to implement the extensive mitigation steps needed or to consider current prices for lower risk homes or properties.

Finally, the socioeconomic trends detailed above have led to diverse population groups within the MV community with sometimes conflicting values and lifestyles, creating a complicated dynamic that can impact EMP programming. For example, in-migrant new construction adds to wildfire risk, generating resentment among long-term residents. Those long-term residents face a different financial and social calculus when considering mitigation treatments – a traditional culture of self- and neighbor-network reliance has been displaced by administratively-based assistance that feels unapproachable, especially against the backdrop of new affluent neighbors with resources that beget additional resources.

Adapting to Living with Wildfire

Mitigation 101

The MV's continuing in-migration and the resulting expansion of residential built areas into MV's wildlands is not unique:

> *As the United States population continues to grow, the development in the WUI [wildland urban interface] expands. From 1990 to 2010, … the number of homes on these lands expanded by more than 41%. The latest data show that close to 99 million people, or one-third of our population, now live in the WUI.* (Karels, 2022)

> *When wildfire enters WUI areas, where human development meets or intermingles with undeveloped wildland or vegetative fuels, … the effects on communities can be catastrophic, causing environmental and socioeconomic devastation.* (Karels, 2022)

Fortunately, fire behavior scientists have identified sound principles behind how structures ignite during a wildfire and have developed measures that can be taken to reduce ignition and fire spread.

> *Experiments, models, and postfire studies have shown homes ignite due to the condition of the home, and everything around it, up to 200' from the foundation. … Most home losses in a wildfire are from embers, not by direct contact with flames.* (National Fire Protection Association [NFPA], n.d.)

> *Defensible space, coupled with home hardening, is essential to improve your home's chance of surviving a wildfire. Defensible space is the buffer you create between a building on your property and the grass, trees, shrubs, or any wildland area that surround[s] it. This space is needed to slow or stop the spread of wildfire. … Proper defensible space also provides firefighters a safe area to work in, to defend your home.* (California Department of Forestry and Fire Protection, 2019)

> *The concept of the home ignition zone [HIZ] was developed by retired USDA Forest Service fire scientist Jack Cohen in the late 1990s, following some*

> *breakthrough experimental research into how homes ignite due to the effects of radiant heat. The HIZ is divided into three zones.* (NFPA, n.d.)

Based on a consensus of fire scientists and practitioners, the National Fire Protection Association (NFPA; 2018) developed guidelines and best practices for reducing structure ignition hazards from wildfire within each of the three HIZs. In short, the home or other structure, landscape characteristics and vegetation within each HIZ can be retrofitted or modified to each serve a specific purpose to reduce threats of ignition from embers, direct flame and radiant heat (Bennett & Nichols, 2020; NFPA, n.d.):

- HIZ 1 (the structure and the first 0-5 feet around it) is designed as a noncombustible zone by using appropriate structure hardening measures and materials, as well as fire-resistant hardscaping and landscaping.
- HIZ 2 (5-30 feet out from the structure) is designed to influence and decrease fire spread by using "lean, clean and green" vegetation options; strategic horizontal and vertical spacing between plants, shrubs and trees; areas of noncombustible fuels (pathways, noncombustible mulch); and other landscape features as well as maintenance to ensure there is not continuous vegetation all around the structure.
- HIZ 3 (30-100 feet out from the structure) is designed not to eliminate fire but to interrupt fire's path and keep flames smaller and on the ground by creating spacing between tree crowns and eliminating ladder fuels (i.e., those understory fuels that lead fire upward into the tree canopy where it can intensify and spread).

If community residents are able to follow the NFPA's recommendations for modifying their homes, other structures and the fuels surrounding them, they can significantly reduce their individual and community wildfire risk.

The Institutional Context

The Washington State and federal governments have targeted and prioritized areas, including the MV, in need of investments in cross-boundary, landscape-scale wildfire risk mitigation, forest restoration, and reduction of overabundant natural fuel accumulated from years of wildfire suppression and forest management methods that promoted overstocking of forests (National Science and Analysis Team, 2014). As the U.S. Secretary of Agriculture Tom Vilsack explained, "It is no longer a matter of if a wildfire will threaten many western communities in these landscapes, it is a matter of when…. The need to invest more and to move quickly is apparent" (United States Department of Agriculture, 2023).

WA DNR's Washington State Wildland Fire Protection 10-Year Strategic Plan (2019) emphasizes that Washington's landowners, landscapes and communities will all benefit from a proactive approach to fire. Reducing fuels, creating defensible space and hardening homes to decrease the likelihood of fire ignitions and spread are examples of proactive actions that WA DNR has broadly supported at a policy level and through its own programs.

Both Okanogan Conservation District (Okanogan CD) and WA DNR's Wildfire Ready Neighbors program offer free home assessments to systematically identify the wildfire risks (from embers, heat and flame) to a person's residence. The goal is to motivate residents to take responsibility for reducing those risks by performing specific mitigation actions starting at the home and moving gradually away into the surrounding yard or land. Regrettably, residents who face barriers to addressing assessment findings are left with disconcerting

information they cannot act on. What is intended to motivate them might become a source of fear and anxiety (see also **PREFACE** and section **8. Assessments and Scopes of Work**).

State and federal agencies do offer cost-share programs to incentivize and assist landowners with wildfire risk mitigation actions, typically providing landowners a reimbursement of 50%-75% of the mitigation costs (meaning the landowner is responsible for 25-50% of the cost). However, this assistance is usually limited to the costs of reducing specific natural (woody, vegetative) fuels and to specific types of properties, such as five or more acres of forested land. Most programs do not include mitigation treatments of the home envelope[5] or within HIZs 1 and 2 (0-30 feet out from the house), nor do many of the programs cover removal of human-made fuels that exacerbate fire ignition, spread and intensity, and present health and safety risks to firefighters, residents and their neighbors.

Unfortunately, these state and federal cost-share programs are unlikely to serve those who have the most to lose from wildfire, such as people who rent, and those who cannot meet the 25%-50% match required or have mitigation treatment needs not covered by the cost-share programs. High priority mitigation steps needed by these residents often include work in HIZs 1 and 2, and removal of accumulated human-made fuels in addition to natural fuels. Finally, these same residents often lack the resources for recovery, with limited or no options for evacuation, finding a new rental residence, rebuilding a home or relocating.

> *Although the monetary value of their property may be less than that of other households, it likely represents a larger proportion of total household assets. For these households, lost property is proportionately more expensive to replace, especially without homeowner's or renter's insurance.* (Flanagan et al., 2011)

The Washington State Wildland Fire Protection 10-Year Strategic Plan (WA DNR, 2019) notes that "communities and vulnerable populations across the state are struggling to keep up with accelerating wildland fire risks" and cites lack of access to resources as a key barrier. Washington State has taken steps to ensure that state agencies, including WA DNR, "facilitate equitable participation and support meaningful and direct involvement of vulnerable populations and overburdened communities" in new and existing programs. The agencies must also "identify and prioritize overburdened communities", but these are new initiatives that are still under development (Equitable Community Engagement, 2022; see also USFS, 2022b; WA DNR, n.d.-b.).

Despite more recent institutional recognition of the need for wildfire risk mitigation, at the local level the MV has limited capacity to put state and federal resources to use. Headwaters Economics (2022), an independent, nonprofit research group, developed a "rural capacity map" in an effort to help identify communities nationwide where staffing and expertise are limiting the ability to apply for, implement, manage and report on federally funded projects. Its analysis of the Methow Valley revealed low capacity (50 out of 100 on their Rural Capacity Index), with 70% of other communities nationwide having higher capacity. This highlights the

[5] A home or building "envelope" is what forms a barrier to prevent what is outside, such as precipitation, temperature extremes, as well as embers and smoke, from intruding into the inside. The "envelope" includes a structure's roof, walls, siding, window, doors, foundation, and air exchange systems and vents (National Association of Home Builders, 2020).

critical reality that local organizations like FAMV have severe capacity limitations coupled with the highest levels of catastrophic wildfire risk.

Identifying Communities Experiencing Vulnerability

Social vulnerability refers to "the socioeconomic and demographic factors that affect the resilience of communities" (Flanagan et al., 2011). In section **3. Client Eligibility**, we note that identifying and quantifying the socioeconomic and demographic factors that affect a community's resilience are complicated. If an EMP's client eligibility will be derived from these factors, we recommend that EMP leadership base its eligibility criteria upon local data relating to the many existing socioeconomic and demographic factors present in the community and how those factors interrelate. We also recommend that EMP leadership and partners draw from existing methodologies and frameworks utilized by agencies, researchers and/or local nongovernmental organizations to identify populations that are less likely to be able to recover from wildfire or other hazard events.

> *Disasters are the direct result of society-made vulnerabilities, such as poor structural design and poor land-use planning, as well as a long history of policies distilling social inequalities, such as systemic racism. Social vulnerability is defined as 'the characteristics of a person or group and their situation that influence their capacity to anticipate, cope with, resist and recover from the impacts of a natural hazard'.* (Enderami & Sutley, 2022)

Federal Measures

In the 1960s, the federal government developed a methodology for quantifying poverty based on the principle that one third of a household's income is spent on food; poverty thresholds are derived from the cost of a minimum food diet multiplied by three to account for other family expenses (United States Census Bureau, n.d.). Based on these principles, the federal government issues annual federal poverty level (FPL) guidelines to measure the number of people experiencing financial poverty. The FPL guidelines are also used as an eligibility criterion for a number of federal and state social services programs. Some of these programs use percentage multiples of the FPL guidelines to determine eligibility, e.g., an applicant's household income must be no more than 125% or 185% of the FPL guidelines (Federal Register, 2022).

Beginning in the 1970s, disaster research has questioned whether, and more recently, demonstrated that "important social, physical, economic, cultural, and political factors drive people, households, and communities to be more or less vulnerable", and these vulnerabilities are "exacerbated by the place and type of residence, building construction, and social exclusion …." (Enderami & Sutley, 2022; see also Flanagan et al., 2011).

In the last several decades, in response to this growing awareness, academic institutions and the federal government have collaborated to devise tools to help disaster management officials mitigate and plan for emergencies by identifying the locations of their populations that are experiencing the most social vulnerability. In 2003, Dr. Susan Cutter and associates at the University of South Carolina Hazards and Vulnerability Research Institute published a social vulnerability index now known as the SoVI® (Cutter et al., 2003). This index provides a "snapshot of an area's relative social vulnerability to a range of hazards" (Dunning & Durden,

2013). In 2011, the Centers for Disease Control and Prevention (CDC) collaborated with several other federal agencies to develop their own index, the CDC Social Vulnerability Index (SVI), which includes sixteen factors within four main domains: (a) socioeconomic status, (b) household composition and disability, (c) minority status and language, and (d) housing and transportation (Agency for Toxic Substances and Disease Registry, 2022; see also Flanagan et al., 2011). Flanagan et al. (2011) provide a thorough definition and analysis of each of these domains, touch on a few limitations of the index, and identify the need to rely on local data and knowledge.

Beginning in 2016, The Natural Hazards Risk Assessment Program of the Federal Emergency Management Agency (FEMA) and collaborators developed the National Risk Index (NRI), a holistic and nationwide baseline of natural hazard risk. The NRI recognizes that although all communities experience natural hazards, "there is a wide range of environmental, social, and economic factors that influence each community's risk to natural hazards" (Zuzak et al., 2023). It calculates a community's risk, i.e., their potential for "negative impacts as a result of a natural hazard" based on three data sets or components (Zuzak et al., 2023):

- the composite expected annual loss from 18 different natural hazards based on dollar value of buildings, agriculture, and lives lost or injuries sustained by the community's population – calculated from several subfactors and data sources, applying multiple analytical techniques across all hazard types
- social vulnerability of the community, defined as the "susceptibility of social groups to adverse impacts of natural hazards, including disproportionate death, injury, loss, or disruption of livelihood" – based on the CDC SVI
- the community's resilience, defined as the "ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, and withstand and recover rapidly from disruptions" – based on University of South Carolina's Hazards and Vulnerability Research Institute Baseline Resilience Indicators for Communities index.

The FEMA Risk Index can either identify the composite score of a community for all 18 natural hazards or for a single natural hazard. This provides the ability to identify the most significant risk factors for a community (specifically, each United States census tract and county) and how that community compares to all other U.S. communities (FEMA, n.d.-b; Zuzak et al., 2023).

For example, Okanogan County's Risk Index score based solely on wildfire is 99 out of 100, calculated from Okanogan County's Expected Annual Loss from wildfire, a "very high" social vulnerability score and a "very low" community resilience score. This means that Okanagan County is more at risk for wildfire and its impacts than 99% of all U.S. counties.

While Okanogan County's Risk Index score for wildfire is a concern, our research into and discussion of FEMA's NRI is to shine a light on the evolving understanding of all factors, including localized natural hazard risks, that can lead to vulnerability. Having this context is what helps shape an understanding of the target clientele of a local EMP.

State Measures

As discussed in *The Institutional Context* (p. 23), Washington State has taken steps to ensure that state agencies can identify and prioritize assistance, including support for wildfire risk mitigation, to its populations that are experiencing vulnerability and to underserved,

overburdened and historically marginalized communities. The state utilizes a variety of sources, with a primary resource being the Washington Environmental Health Disparities Map, which includes a number of health, social and economic variables to determine health risks (Washington Tracking Network, n.d.). Many Washington State agencies and programs try to prioritize at least a portion of their program resources to census tracts that have a score of 6 or 7 out of ten, when using these data sources. WA DNR is considering additional methodologies to best identify its residents who are most vulnerable to wildfire and its impacts.

In Oregon State, under a 2021 mandate from the state legislature, Oregon State University's College of Forestry and the Oregon Department of Forestry began working together to develop a statewide map of socially vulnerable communities that showed which communities "may need more support before, during, or after a wildfire" (Oregon State University, 2023). The methodology used was based on the CDC SVI.

Local Measures

The TwispWorks Comprehensive Economic Study of the Methow Valley (TWCES) drew from existing federal, state and county agency databases and local planning documents; conducted community listening sessions and surveys of small businesses and residents; and performed additional analyses and mapping to identify patterns in these data (Tate-Libby, 2021). Many of the variables in the TWCES relate to socioeconomic vulnerability factors impacting the MV, making it an excellent source of data about residents targeted by our EMP.

In spring 2019, local MV organizations (TwispWorks, Room One, Little Star School) partnered with the University of Washington (UW), applying their Self-Sufficiency Standard for a more accurate measure of poverty in the MV over the federal poverty-level standards. Using this method, which assesses the household income needed for MV housing, transportation, insurance, day care and food costs, they determined a family of three would need to make $47,729 per year to live in the Methow Valley in 2019 (as cited in Tate-Libby, 2021). The Federal Poverty Level (FPL) for a family of three in 2019 was $21,330 (Office of the Assistant Secretary for Planning and Evaluation, 2019). For 2023, the FPL for a family of three is $24,860, while as of June 2023, the UW self-sufficiency threshold for a household of three in Okanogan County was $71,726. These county data are likely an underestimate of the MV. While median home prices in Okanogan County increased between 2019 and 2022 from $220,400 to $352,500 (approximately 60% increase), the increase in the MV over the same time period was $352,000 to $640,000 (approximately 80% increase; Methow Conservancy, n.d., University of Washington, n.d.).

Similar to the FEMA NRI, Headwaters Economics (2021) developed an easy-to-use tool that provides community-level data from public sources about wildfire hazard and potentially vulnerable populations to "help communities prioritize prevention and mitigation measures to reach the most vulnerable people." Unfortunately, data specific to the MV as a discrete region cannot be accessed using this tool, because it relies on data either for the entire Okanogan County, or for only two of the MV's incorporated towns, excluding the rural unincorporated areas and any other incorporated towns. Neither dataset is likely to be fully representative of the MV. Until these tools can provide more accurate assessments of social vulnerability at meaningful geographic scales for rural regions like the MV, it will continue to

be a challenge to access reliable data to inform effective programming for our vulnerable populations.

Equity is a Vital Component of Fire Adapted Communities

In communities adapted to living with wildfire, everyone understands that they are responsible for preventing fire starts and preparing for wildfire, being safe during a fire, and helping themselves and others recover from fire. Specifically, members of a fire adapted community recognize the following:

- They live in a place where wildfire is common, and they can modify activities and behaviors to reduce or prevent ignitions and fire spread.
- They can and need to develop strategies and implement actions that contribute to all community members' safe coexistence with fire in their environment.[6]
- With proper individual, collaborative and community-wide preparation, community members, their homes and infrastructure in their built environment can withstand wildland fire without relying strictly upon fire suppression.
- Everyone – regardless of their means or ability – must have access to the information, resources and assistance they need to prepare for and be safe during a fire, and to have a clear way forward to recover from wildfire.
- Everyone is in this together – each person's situation and actions impact others because fire knows no boundaries.

> *Ideally, wildfire prevention and risk mitigation efforts should prioritize assisting the most vulnerable people and places to ensure that hazard reduction resources and strategies are equitably distributed.* (Wigtil et al., 2016)

> *Wildfire disasters, which disproportionately disrupt the lives of the most socioeconomically disadvantaged, are as much products of social circumstances as they are ecological ones. … Therefore, wildfire management and alleviation of the factors that influence social vulnerability must be pursued in tandem to reduce the vulnerability [of] communities to wildfires. … [A] social-ecological perspective of fire-prone landscapes … forces us to consider variability in the capacity of communities to recover from disturbance, cultural differences and experiences with wildfire, and disparate histories of exposure to wildfire. Approaching wildfire adaptation from this social-ecological perspective is a first step in creating safer, just, and more resilient communities.* (Davies et.al., 2018)

For a community to be resilient to wildfire, all members must have access to and the ability to utilize the resources and support that enable them, their homes and properties to be prepared for fire, which in turn decreases the risk to other properties. An equity-focused mitigation program is one of many measures needed to empower all community members to live resiliently with fire. It is time to ground wildfire risk mitigation in equity.

[6] This includes, but is not limited to, in-care patients, employees and farmworkers living in employer-owned housing, renters, unhoused residents, visitors, students and others whose safety and recourse are in one way or another governed or dependent upon another's actions and choices.

Methow At Home crew leader thinning and limbing trees with chainsaw. Photo by K. Heim, 2022.

Team Rubicon volunteer spreading gravel in HIZ 1. Photo by M. Chiu, 2022.

FINDINGS AND RECOMMENDED ACTIONS

1. Client Outreach and Recruitment

In rural Methow Valley, word of mouth is an important communication pathway. Potential EMP clients are most likely to learn about wildfire mitigation opportunities from community members whom they know and trust, such as family, friends and members or leaders of community groups/service organizations to which they belong. These interactions may be in-person or virtual, one-on-one or in groups. Trusted media sources, such as a favorite radio station, newspaper, newsletter and/or social media group, are also valuable communication channels.

Targeted outreach is needed to identify and recruit client applicants for the EMP. Social or community service organizations, including certain affinity groups and faith communities, who support underserved, overburdened and historically marginalized community members, might help the EMP with client outreach and recruitment.

Connecting with potential clients who have little or no access to community or social service organizations, or an informal support network, requires creative thinking and deep listening

by EMP staff, partners and community members who want to help bring clients to the program. There are additional outreach findings throughout the report as they relate specifically to other components of the EMP process.

Recommended Actions

Develop a systematic, multifaceted outreach program to inform potential clients of EMP benefits and open client application periods. Prioritize in-person interactions to foster relationships and trust, and to encourage word-of-mouth sharing. Additionally, utilize multiple media formats, including the MV's online bulletin board and community Facebook groups circulating fire information.

Collaborate on outreach and client recruitment with staff from community service organizations that may already have specific clients or members who would benefit from the EMP program. Develop partnerships and collaborate with community groups, existing long-term recovery groups, churches, neighborhood leaders, local agencies, Facebook group leaders, etc. to

- **host presentations** at community forums and gatherings,
- **engage neighborhoods** involved in other disaster preparation programs and "map your neighborhood" efforts, and
- **set up and promote events** at which potential EMP clients can ask questions or seek assistance in applying.

Encourage EMP leaders and staff to be visible and approachable in the community by participating in community service and other events, such as parades and festivals, local meetings about wildfire, and tabling at local grocery stores, community centers and farmers' markets.

Plan outreach campaigns at the same time(s) each year. For the MV, efforts in late fall/early winter and again in late spring/early summer align with our cycle for recruitment, planning and mitigation (see section **14. Program Management**).

2. Client Application Process

A potential EMP client's first step toward accessing mitigation assistance is to complete an application. However, in a place where self-reliance is highly valued, a simple act to request "help" from strangers is not easy. An applicant's situation, values, perceptions about an organization and its programming, the application process or the application itself may raise barriers significant enough to prevent completion of the application. Those barriers may also include

- lack of access to computers or internet,
- language and/or writing obstacles,
- the volume of information requested,
- being overwhelmed by the application process,
- feelings of shame or discomfort in seeking "help",
- desire not to be perceived as wanting a handout,
- concern about sharing highly personal information, and
- needing to verify or attest to accuracy of the application responses.

During the pilot period, we developed a draft application form that we utilized with two pilot EMP applicants. Both of these applicants sought guidance from pilot EMP staff and appreciated having someone available to answer their questions about the information requested or to assist them with completing the form. A potential EMP client may already be a client or member of an EMP partner (e.g., a local social service organization or a church congregation) and that partner may be best situated to help their own client or member complete the application. However, the EMP partner will not be able to share its client's application with FAMV unless the EMP partner has written permission from its client to do so.

The application form and process can be a way to begin building trust with the prospective client. Transparency, acceptance and compassion are critical elements for successfully engaging potential EMP clients, especially given the need to share potentially sensitive information. It is also important for the application process to give applicants an opportunity to identify ways they can contribute to the planning and implementation of work parties. The point is for the applicant to see from the outset that the EMP is not offering a handout, but rather a partnership, and that their contribution at any level is of value. Along with building trust, this engagement also fosters ownership of, and agreement to, community fire adaptation, meeting additional FAMV objectives (see also section **4. Client Contribution Levels**).

The Equity-focused Mitigation Organizations required proof or personal attestation of the applicant's information, especially the information directly relating to eligibility. FAMV is still refining its verification process for client information and to make sure its outcomes meet FAMV's, our partners' and our funders' specific needs.

Recommended Actions

Understand and address the application barriers. Before developing the client application form and onboarding processes, engage community stakeholders to identify the likely barriers and challenges to EMP participation. Design a straight-forward application form and process that is sensitive to these barriers and that begins building a trusted relationship with EMP program staff and partners.

Provide an EMP client advocate. Building a client support system into the EMP is crucial, not only for the client application process, but for all program components and processes. The client advocate can be staff from the EMP or a social service/community organization that already works with the client. Ideally, EMP-based client advocates would follow the client through the entire EMP process or work with partner-based client advocates during the application process to seamlessly take over for the rest of the EMP process.

Establish a reliable and standardized verification process for the applicant to attest to or prove information shared on the application. The type and extent of verification procedures should be determined by EMP leadership, taking into account both funders' and partners' needs.

Ensure the EMP application form and process maintain clients' confidentiality. If partners recruit and assist potential clients, the application must include a consent form for sharing materials with the EMP.

3. Client Eligibility

One of our objectives is to bring equity to local mitigation programs so that all MV residents have access to resources, opportunities and means for mitigating their wildfire risks. Our intended clients are MV residents who lack the means, capability or agency to reduce their wildfire risk due to the vulnerabilities in our community. Those intended clients are unable to perform mitigation work themselves, pay a contractor or take advantage of government cost-share programs, which may or may not address their types of properties or needed mitigation treatments.

The EMP eligibility criteria, which determine who the program assists, must be clearly defined by EMP leadership, partners and funders. We need inclusive and straightforward eligibility criteria to ensure we are selecting our, our partners' and our funders' intended EMP clients, and those criteria must be credible, transparent and consistently applied to gain and maintain trust within the community.

During the pilot program and research, we gradually gained an understanding of

- how other Equity-focused Mitigation Organizations select their clients,
- the many factors that impact our community members and create barriers to reducing their wildfire risks, and
- what we believe are the client eligibility criteria that will enable us to serve our intended clients.

All five Equity-focused Mitigation Organizations accepted applicants who met both an income criterion and one or more of four social criteria:

- age (usually 65 and older)
- disability
- veteran status
- participation in other needs-based programs

Mitigation Organizations each had their own unique methods for determining income criteria thresholds and for measuring client incomes. In addition, one Equity-focused Mitigation Organization indicated that they sometimes selected an applicant subjectively – the client did not meet all their eligibility criteria but presented a clear need based on other socioeconomic factors and wildfire vulnerability.

From our experience with pilot EMP clients and program partners, and as we learned more about our community members' economic and social challenges, we realized that if the MV EMP only selected clients based on the eligibility criteria utilized by the Equity-focused Mitigation Organizations, many of our intended MV clients would likely be deemed ineligible for assistance. As expanded on below, potential clients do not always neatly fit these narrow selection criteria. For those who do not, but who obviously still require assistance, we saw the need for a reconsideration process to ensure that they were not ignored. Meanwhile, we recognized that if the eligibility criteria were too complicated, we risked overwhelming both the applicants and the persons assisting them.

We felt we could balance these issues with a two-step process for determining eligibility. If applicants were eligible under the basic income and social criteria commonly applied by other Mitigation Organizations, then those applicants would be automatically selected. If applicants were not eligible under these criteria, they could answer a secondary set of questions that would help identify any additional economic and social factors they were experiencing that prevented them from performing or paying for mitigation treatments.

To design secondary eligibility criteria that were broad enough to include the diversity of circumstances faced by the MV's most vulnerable residents, we explored other socioeconomic factors that might be relevant to our intended client base. That exploration was influenced in part by our EMP partner, Okanogan County Long Term Recovery Group (OCLTRG), which has been assisting county residents recover from wildfire impacts ever since the 2014 Carlton Complex fire. OCLTRG determined that the question "What does this person need to recover from this disaster in this community?" is,

> *... in fact, the definition of equity: to give people what they need, taking what has been and is happening around them into consideration. Implicit in the OCLTR[G] motto is the idea that the people impacted by adversity know better than anyone else what they need, and it is up to them to define the terms of their recovery.* (Estrada, 2018)

We asked our pilot EMP clients to consider what they would lose and what they would need in order to recover if their homes were destroyed in a wildfire event. Asking people before they are impacted by a fire to consider their likely losses and recovery needs, including their ability to remain in the valley and continue to earn a living, can highlight how their current economic and social circumstances and difficulties would be further compounded by the impacts from wildfire.

Consider these examples:

- A client who lives with disabilities and has spent years gradually setting up their in-home business with special equipment, software, physical tools and furnishings in order to function productively, competitively and without difficulty. Loss of that client's home would also result in loss of livelihood and the business itself. Existing inventory of their products would be destroyed and difficult to recreate due to the loss of the specialty tools and equipment.
- A client purchased their home years ago before in-migration to the MV drove up home prices beyond the reach of local median household income earners. If this client lost their home to wildfire or post-wildfire impacts such as flooding and mudslides, they would likely not be able to afford to rebuild or purchase elsewhere in the valley. Potentially, they would need to relocate outside the MV and would incur additional financial, mental and physical costs of such a move. If they could afford to rebuild, they might lose their home fire risk insurance, setting them up for compounding wildfire vulnerabilities.

We also referred to several studies and other publications to inform our discussions of eligibility requirements, and it was clear that measuring economic and social vulnerability is a complex endeavor.

Ultimately, for the MV EMP, we developed two-tiered client eligibility criteria:

- Tier One: If an applicant meets both the economic eligibility criterion (i.e., household income is below a predetermined threshold) and at least one of three Tier One social eligibility criteria – over the age of 65, mental and/or physical disability, or a veteran – they are automatically accepted into the program.
- Tier Two: If an applicant does not meet the Tier One criteria, but meets a predetermined number of the Tier Two economic and social criteria (see below), their application is subject to a secondary review process to assess how the Tier Two criteria relate to
    - the applicant's ability/means to perform mitigation where they live, and
    - the ways in which wildfire and its many impacts would affect the applicant and their attempt to recover in place.[7]

Tier Two economic and social criteria reflect circumstances beyond those captured by Tier One criteria, and confer a secondary review if applicants

- live alone,
- are caregivers for a spouse, children or elders,
- are widowed,
- have an acute or chronic illness,
- are members of a community of color,
- speak English as a foreign language,
- are Tribal members,
- are unemployed or working multiple jobs to make ends meet,
- have disproportionately high cost of living (e.g., transportation, housing and/or childcare costs) compared to household income,
- are financially dependent on an in-home business,
- have inadequate or no homeowner or renter insurance coverage,
- are socially isolated or not connected to community services,
- have mobility issues or lack transportation, and/or
- are faced with multiple circumstances that result in significant exposure to wildfire risks and affect the applicant's ability to prepare for wildfire, and to respond to and recover from wildfire impacts.

Finally, in our small community, optics are important. During our pilot EMP, we saw how easily community members could question why we selected specific clients. To avoid any appearance of favoritism or arbitrary decisions about client eligibility, we recognized it is imperative to develop and adhere to clear guidelines and a transparent process for client eligibility. We also found it helpful to have multiple people participate in client selection decisions (see also **RECOMMENDED ACTIONS** below and section **13. Organizational and Programmatic Structure** for more on client selection committees).

[7] "The pre-event susceptibility of populations indicates who is likely to experience structural and nonstructural losses. By contrast, coping capacity governs the types of difficulties an individual, household or community are likely to have enduring impacts. … Lower coping capacities make socially vulnerable populations less equipped to withstand their losses." (Drakes et al., 2021)

Recommended Actions

Assess the specific realities and needs of the community to be served by the EMP to determine eligibility criteria for that community.

Design client eligibility criteria, in collaboration with EMP leadership, advisors, EMP partners and other local community, social service and long-term recovery organizations. When possible, use locally derived data resources and relevant models that can be applied to local circumstances (see *Local Measures*, see p. 27). Social vulnerability factors are compiled below (Table 1), collated from a variety of sources; terms are grouped for clarity by the CDC SVI domains, but are derived from these diverse sources, which may each define their terms in different ways. These are socioeconomic and demographic vulnerability factors that organizations may want to consider when designing an EMP for their community.

Develop and adhere to clear guidelines for the client selection procedures. Establish a selection committee that convenes at the appropriate times to review EMP applications and select clients. Use of a committee whose members have an understanding of the local context and the barriers to equitable mitigation encourages a more objective process that helps prevent biases, minimizes the optics issues that can arise, and places responsibility on more than one set of shoulders.

Table 1. Social vulnerability factors collated from various sources organized by CDC SVI domains (see * in **WORKS CITED** and **WORKS CONSULTED**).

SOCIAL VULNERABILITY FACTORS			
Socioeconomic Status	***Household Composition / Disability***	***Racial / Ethnic Status[8]***	***Housing / Transportation***
Poverty Income inequality Lack of living wage jobs Unemployed or working multiple jobs to make ends meet Per capita income Ability to afford basic necessities Basic living expenses a larger proportion of income Financially dependent on an in-home business No or limited employee benefits Lack of access to resources Practical and bureaucratic hurdles hard to surmount High school education (lack of or limited to) Gaps in educational opportunities and attainment Concentrated neighborhood disinvestment Increased neighborhood violence and crime Social cohesion (lack of) Social exclusion / socially isolated Not connected to community services Inadequate support network Political disenfranchisement and low social capital	Veteran (or lives with veteran) Age 65 and over Age 17 and under Family with children Lives alone Widowed Sole care giver for spouse, children or elders Single parent Access and functional needs Limited mobility Mental or physical disabilities Chronic or acute illness Compromised mental or physical health	Tribal member Member of a community of color Racial segregation / discrimination Social / economic marginalization Historical real estate discrimination Speaks English as a foreign language Limited English language speaker Linguistic isolation Limited culturally / linguistically appropriate resources Cultural and institutional barriers	Inadequate housing Group home Mobile home Multiunit structure Household crowding Limited access to affordable and quality housing Rent, rather than own, home Inadequate or no homeowner or renter insurance coverage Disproportionately high housing and/or transportation costs compared to household income Location of residence No access to a vehicle Limited access to reliable and affordable transportation Limited ability to Relocate
Experiencing multiple circumstances that result in significant wildfire risk exposure, and affect a person's ability to prepare for wildfire, and respond to and recover from wildfire impacts (Drakes et al., 2021)			

[8] "Race and ethnicity have often been considered social vulnerability drivers due to long-standing systemic discrimination and racism leading to limited access to resources of all kinds, as well as lower income, and cultural and language barriers. Minority groups are more likely to occupy houses that are located in hazardous locations, and less likely to have connections to decision-makers and political capital." (Enderami & Sutley, 2022)

What About Renters?

Renters are important community stakeholders (Jolley, 2019). Because the cost of purchasing and owning a home in the MV is grossly out of reach for many renters, they are precisely a core subset of people eligible for an EMP. In addition, if renters cannot find alternative living situations (e.g., another rental or moving in with family or friends) after losing their rental home in a wildfire, they are likely to have to leave the MV. A mitigation program based in equity needs to consider ways to include renters as clients.

> *Renters tend to be more socially vulnerable than those who own their homes. Commonly referenced causes for greater social vulnerability for renters include having trouble finding shelter after a disaster, accessing or knowing about recovery financial aid programs, and having limited control over property-level hazard mitigation actions.* (Enderami & Sutley, 2022)

The MV has far fewer renter-occupied houses (13.4% of housing stock) than the rest of Okanogan County (23.3%) and the nation (33.8%). However, of those rental properties, well over half (65%) present significant wildfire risks: they are old, poorly maintained, or of substandard construction and/or are fire-susceptible manufactured homes (Tate-Libby, 2021).

Four of the interviewed Mitigation Organizations require applicants to be the legal homeowner. Two equity-focused Mitigation Organizations accept renters into their programs depending upon the situation and specific landlord-tenant agreements in place.

Our pilot EMP included renters – a married couple who demonstrated a deep commitment to reducing the wildfire risk to their rental home and surrounding land. As legal owner, the EMP clients' landlord participated and had final say in all decisions and was party to all written agreements regarding treatment plans, property boundaries, crews on the property and questions of liability. Unfortunately, conflicting expectations ultimately resulted in the scope of treatments being scaled back and then, when the landowner withdrew permissions, stopped altogether. Our pilot rental clients were very disappointed that the work could not be completed as planned; however, it is important to note that key mitigation treatments were performed before the landowner stopped the process.

The lesson learned from the pilot experience is that renters' and landowners' values and objectives may differ substantially. Also, landlord-tenant situations vary greatly. Landlords must be integrated into the EMP as clients because they have final say about their property – their agreement must be acquired and documented. Also, the issue of equity can become clouded by the question of who is benefiting from no/reduced-cost mitigation assistance. Landlords, who may or may not meet the EMP client eligibility requirements, benefit from the EMP treatments because the house belongs to them. Renters cannot be left out, however. Considering what renters stand to lose if their homes burn reveals the very real inequities renters face. If an EMP's intention is to assist renters, we recommend that they first investigate best practices to navigate the legal and social complexities involved, and consult with legal counsel, partners, community advocacy groups and policy makers.

4. Client Contribution Levels

We sought to learn how an EMP could serve community members with either no or limited economic means and whose properties or fuel sources did not meet the criteria of existing governmental programs. Without assistance through programs like an EMP that target

underserved populations, some MV residents will fall through the cracks, and we will not be fully addressing current inequities in wildfire risk mitigation, or community wildfire resilience.

After applying iterations of the two-tiered eligibility criteria described above, we also found that pilot EMP clients had varying capacity to contribute to the risk mitigation process. Some pilot EMP clients could pay for a small portion (between 5-25%) of the mitigation costs, while others were unable to afford any percentage of the costs. As noted above, existing government mitigation programs in the MV currently only assist landowners with specific types of properties and fuels who can pay between 25-50% of mitigation costs. To fully rectify current inequities in wildfire risk mitigation, targeted programs are needed to assist those who do not have the means to participate in these agency mitigation programs.

One of the Equity-focused Mitigation Organizations utilizes a two-level assistance approach to its eligible clients. They offer no-cost assistance to clients whose incomes fall below an established income threshold, and a cost-share option to clients whose incomes exceed that threshold but fall below the median household income for the area. By enabling clients to take responsibility for their homes and surrounding land through contributions to the mitigation project in accordance with their financial capabilities, more residents can obtain the resources, technical guidance and support they need at a cost they can afford.

Two Levels of Client Contributions

Based on FAMV's pilot program experience, the EMP would best serve the existing spectrum of historically marginalized, underserved and overburdened MV residents' needs by offering two assistance/client contribution options:

- No-cost assistance for EMP clients whose household income falls below a low-income limit determined by EMP leadership. These clients would be asked to contribute only through actions that match their abilities (in-kind match).
- Income-based proportional cost-share assistance for EMP clients whose household income falls above the low-income limit but under the household median, with the client paying between 5% and 25% of the mitigation costs. These clients would be asked to contribute also through their actions (in-kind match).

We learned that pilot EMP clients took ownership of the mitigation work when we asked them to actively participate in the mitigation planning and implementation in whatever way they were physically able, or by sharing the positive mitigation outcomes with others. Requesting client participation also fostered a partnership between clients and the EMP workforce. Through our pilot project, we identified a number of activities that EMP clients could perform as in-kind work, and we asked clients to keep track of the hours they contributed. FAMV translated those contributions into dollar values of volunteer hours (using standard Washington State rates); sharing this metric fostered in clients a sense of worth and pride in the significant contributions they made to reducing their wildfire risks.

Because we were learning about eligibility and contribution levels during the pilot program, we did not seek an income-based proportional cost-share contribution from clients; however, we found that pilot EMP clients with some economic means readily contributed by paying contractors to perform minor (and therefore low-cost) fire mitigation work not covered by the EMP pilot crews. For example, client-paid contractors removed a creosote-

treated planter affixed to the wooden siding of the house and cleared dense, dead and woody vines from a pergola so embers would not collect there and ignite.

Some pilot EMP clients preferred anonymity. None of the pilot program clients wanted it to be publicized that they were recipients of "free help"; however, they were happy to share that they had completed risk reduction treatments. One significant example of client ownership and endorsement of the mitigation process also demonstrates how the EMP helped to meet FAMV's objectives for community engagement and buy-in: pilot EMP clients reached out to neighbors about their intended mitigation work and offered them pine chips and felled Douglas fir trees for firewood. In one neighborhood, some of the EMP client's neighbors saw the value of the fuel reduction work and initiated a neighborhood-wide campaign to raise interest in the Firewise USA program's wildfire risk mitigation principles. This neighborhood is now a Firewise USA site that is actively engaged in collaborative fuel reduction and other wildfire preparedness strategies.

Recommended Actions

Develop an EMP with two different client participation/contribution options in order to provide mitigation assistance to the spectrum of historically marginalized, underserved and overburdened MV residents, including those who do not have the means and property/fuel types to be eligible for state and federal mitigation cost-share programs:

- No cost assistance for EMP clients whose household income falls below a threshold determined by EMP leadership and partners, with the client only contributing in-kind work that matches their abilities
- Income-based proportional cost-share assistance for EMP clients with clients contributing 5%-25% of mitigation costs

Determine the EMP client contribution/participation levels and types as a secondary step once applicants meet EMP eligibility criteria.

Collaboratively develop a plan for EMP clients to contribute through in-kind match actions of their choice – for example, interacting with the crew, taking photos, making snacks, and participating in mitigation work. Document these commitments, along with any financial cost-share arrangements, in the EMP/Client Memorandum of Understanding (MOU) and request that clients keep track of these in-kind hours (see section **5. Onboarding Clients** and the EMP Toolkit).

5. Onboarding Clients

In an area like ours, the need for equitable risk mitigation work will likely always be greater than the available funding and staffing/workforce capacity. Onboarding all eligible applicants when they first apply ensures that all clients will be positioned to receive mitigation treatments at the first available opportunity. However, if an EMP does not limit the number of clients brought into the program, they will likely be unable to serve all clients within a year of being onboarded.

Some Mitigation Organizations onboard all eligible EMP clients as they are selected, but then may need to postpone treatments until ample funding is obtained or there are multiple clients

in the same vicinity. This approach is simple but can lead to an unpredictable program model potentially resulting in delays of treatments and dashed client expectations. Despite these challenges, this approach reflects the realities and capacity limitations faced by all mitigation organizations, including state and federal agencies.

Procedurally, client onboarding is a multistep process in which much information is shared with and sought from clients. During initial steps via mail and telephone, EMP staff provide clients an orientation to

- their role, rights, and steps they need to perform during the EMP process,
- the role, rights, and steps of the EMP's and partners' staff and mitigation workforce,
- the nature and objectives of the assessment and treatments (what they are and are not), and
- the potential reasons for treatment delays or incompletion.

Subsequently, site visits and follow up communications are utilized for the remaining onboarding steps:

- home and landscape wildfire risk assessment (section 8)
- development of treatment plan/scope of work (section 8)
- determination of clients' priority status for mitigation (section 9)

The final onboarding step is the signing of an MOU, which details client, EMP and partners' roles and responsibilities.

We saw the onboarding process as part of an ongoing effort to build a genuine relationship with each client that recognizes their individuality and their unique circumstances. EMP staff and clients have much to learn about each other. For successful EMP programming, clients must learn enough to trust the people and process, and EMP staff must understand myriad factors ranging from logistical (e.g., do property boundaries need to be identified?) to emotional (e.g., is the client triggered or overwhelmed by talking about wildfire risks?).

To empower clients, and to not overwhelm them or the EMP staff and partners with options and decisions, good lines of communication and straightforward and consistent procedures, forms and information are critical. In our pilot EMP, we found that many clients welcomed check-in calls or visits as the preplanning, assessment, prioritization, scheduling and implementation took place. Having an ongoing dialogue with the client throughout the process was one of the most, if not the most important aspect of the EMP work.

Recommended Actions

Involve the EMP client advocate (and partners if appropriate) in all contact/communications with the clients.

Onboard all eligible applicants after the selection process. To manage client expectations and frustrations, explain at the outset that, despite EMP goals to reach all new clients before the next fire season, mitigation treatments may be postponed for a number of reasons, including

- because mitigation treatments are prioritized based on specific factors related to implementation efficiency or scale,
- until resources (funding, work crews and equipment) are available, and

- until weather, temperatures, ground and fire-hazard conditions are appropriate for the prescribed treatments.

Develop/finalize a general EMP timeline for all program components and procedures to share with and guide clients through onboarding. This could be in the format of a paper or digital calendar (see section **14. Program Management**, **RECOMMENDED ACTIONS**).

Develop an individualized communication plan for check-in after explicitly identifying clients' communication preferences (phone calls, in-person meetings, emails, texts, etc.). Demonstrate to clients through a well-planned framework and timeline that the EMP is manageable, predictable and reliable.

Onboarding procedures, example program documents and other specific resources are available in the EMP Toolkit.

6. Workforce Model

In considering how to develop the mitigation workforce capacity to conduct the treatments needed, we evaluated numerous possibilities. The workforce models employed by the Mitigation Organizations we interviewed present different viable options for developing an EMP.

Some of the Mitigation Organizations' workforce crews evolved over time and reflected the organizations' creativity, flexibility and understanding of potential partnerships. For example, one defensible space program for seniors included a collaboration between the Mitigation Organization and a local Tribal Council. The Tribal Council managed the payroll and invoiced the Mitigation Organization, and the Mitigation Organization provided training, equipment and job assignments. Though the collaboration ultimately ended, the Mitigation Organization hired the tribal members as its internal fuel reduction crew.

Some Mitigation Organizations rely on multiple partners including paid mitigation crews comprised of local volunteer firefighters, conservation corps and/or contract crews, in addition to neighborhood volunteers and volunteer organizations such as Team Rubicon. Other Mitigation Organizations rely primarily on the simple approach of hiring one paid crew or contractor to perform all mitigation work.

If funding permits, and if the EMP's objectives focus solely on accomplishing mitigation as efficiently as possible, hiring a single contractor and crew is expedient. However, other workforce models might be more desirable depending upon the EMP's and the community's objectives, needs, capacities and available resources.

Our pilot EMP was shaped – first organically, then intentionally – by multidimensional objectives (see **INTRODUCTION**), including the desire to support local historically marginalized, underserved and overburdened youth's access to career pathways, living wages and options for living and working in the valley performing meaningful community-focused work. In addition, we prioritized fostering widespread buy-in to community fire adaptation so that all MV residents may live resiliently with wildfire. Finally, we found that a more holistic approach allowed us to take into account people's realities, which is especially

important when working with historically marginalized, underserved and overburdened populations.

FAMV also recognized the following realities, needs and opportunities:

- Mitigation contractors in the MV and nearby communities are already in high demand, and that demand is growing as more community members understand the need to prepare their residences and land for wildfire.
- Our area currently lacks accessible mitigation-focused workforce training or internship programs.
- By collaborating with local organizations, we are better positioned to identify, recruit and engage individuals and groups of volunteers, including from historically marginalized, underserved and overburdened populations, in mitigation planning and implementation.
- By utilizing multigenerational crews, we can promote the sharing of diverse knowledge and skills resulting in mutual learning, and demonstrate fire adapted community strategies and actions more widely with community members of all ages.
- Okanogan CD and WA DNR are committed to supporting our equitable mitigation programming, and we can provide reciprocal benefits. Okanogan CD and WA DNR provide professional NFPA-standard wildfire risk assessments from which the treatment plans are developed, and WA DNR provides skilled planning staff and crew with the technical ability to treat challenging and densely fueled private properties. Meanwhile, we are positioned to promote both agencies' capabilities, objectives and programs, and help build trust in them among community members.

We do not anticipate that an MV EMP can secure the level of funding needed to develop or employ the services of a single dedicated contractor/crew for all fuel reduction work. Neither do we believe any current local contractor has the capacity to dedicate their crew solely to EMP work. Relying on a single contractor and crew is therefore not currently a viable option for an MV EMP. However, EMP leadership should consider retaining one or more local contractors for performing the mitigation actions that cannot be performed by either EMP crews or WA DNR.

We determined that the best model for conducting the needed scale of risk mitigation work is to recruit and manage a large diverse volunteer workforce in addition to relying upon agency staff/crew, local youth corps (including for historically marginalized, underserved and overburdened youth, see ***How Can We Establish an Equitable Youth Job Corps?*** text box, p. 44) and independent mitigation contractors. Creatively aligning with other local organizations and initiatives also allows for adding EMP capacity to these other workforce partners. For example, another local organization focused on air quality and smoke mitigation, Clean Air Methow, is currently seeking funding from the United State Environmental Protection Agency (US EPA) to support multiple chipping events in MV neighborhoods to reduce residential slash burning. Clean Air Methow, Resilient Methow and FAMV are discussing ways we can partner to ensure these chipping events provide mitigation assistance to EMP clients.

We learned that to operate a successful and sustainable team of workforce partners when the nature and capacities of available workforce partners, the community's level of engagement and available funding are always changing, requires an EMP to be able to anticipate, assess and respond to changes. Flexibility, access to more than one crew with

similar skills, and preparations made well in advance helped us face unexpected changes that could have derailed our planning and implementation.

Recommended Actions

Continually assess options and opportunities for workforce partner development. No single workforce model will necessarily meet an EMP's needs and objectives as that EMP continues to serve the community.

Develop a diverse EMP workforce comprised of a cadre of local volunteers (both individuals and organizations/groups, with participants of all ages) in addition to paid crew (e.g., AmeriCorps and WA DNR) and independent contractors. This EMP model has been most suited to the MV and is likely appropriate in other similarly situated localities. This model also fosters increased community awareness and engagement, larger-scale mitigation treatments and promotion of existing governmental programs.

The MV-specific suggestion above is ambitious and will take ample time and funding to develop. If local resources permit, EMP development leaders could consider a much more streamlined approach, such as utilizing a dedicated contractor in combination with a dedicated youth job corps or volunteer group. However, if there are opportunities to develop partnerships with local mitigation, suppression and recovery-focused organizations and agencies such as a conservation district, fire district or department of natural resources, we recommend doing so.

Actively support and foster any efforts to create local job corps for historically marginalized, underserved and overburdened youth. See also section **12. Managing Partnerships** for additional partner-related recommended actions.

How Can we Establish an Equitable Youth Job Corps?

One of FAMV's core objectives for an EMP is to bring equity to the EMP workforce in part by supporting local underserved youth's access to career pathways, living wages, and options for living and working in the valley. To this end, in 2021, FAMV collaborated with other local organizations including Methow At Home, Room One, Methow Ready and the Independent Learning Center to guide and participate in a study conducted by Western Washington University's Sustainability Pathways undergraduate students regarding how to develop a community-centered climate youth corps that would serve the Methow and Okanogan Valleys in four climate change-related areas of need: fire risk mitigation, weatherization, water and energy conservation, and food security. The students envisioned a program "built around the idea of uplifting the voices of future generations and creating more equitable opportunities for the young people who live in the Methow and Okanogan Valleys" (Smith et al., n.d.).

Western Washington University (WWU) and Methow Valley School District (MVSD) have entered into an agreement to run a pilot sustainability and resiliency-focused youth corps in summer 2023 that will include many of the elements discussed in Smith et al. (n.d.). WWU and MVSD are recruiting two or three local high school students as "crew", aiming for graduating seniors that will attend WWU in fall 2023. There will also be one WWU Recreation Management student that will serve as a "crew leader" with support from Sustainability Pathways staff and the MVSD Career and Technical Education Director. The crew and leader will engage in a range of sustainability related projects, with the youth working two days per week for eight weeks. The crew leader will have one additional planning day each week. The high school students (crew) will earn a stipend of $1,000 and receive exposure to sustainability related career pathways while developing job skills and receiving related training and professional development. The WWU student (crew leader) will receive free housing for the summer and be paid minimum wage from the Sustainability Pathways program, and will also be enrolled as a Civic Leadership and Engagement AmeriCorps member, which provides a $1,780 education award for 300 hours of service.

WWU and MVSD's longer term goal is to have a resiliency-focused youth corps that

- provides summer employment opportunities,
- teaches job skills and offers related learning opportunities,
- exposes students to a range of sustainability career pathways,
- helps increase community resiliency, and
- eventually enables students to earn either CTE or College in the High School credit.

7. Onboarding Workforce Partners

By identifying, vetting and onboarding mitigation implementation partners as early as possible, at a minimum of five to six months before implementation is to occur, EMP staff has the lead time needed to appropriately match partners with properties, schedule treatments and deal with the unexpected. A comprehensive onboarding protocol helps ensure that the following planning and implementation goals are met:

- All workforce partners and crews are assigned to treatment tasks they can perform.
- Work parties meet the objectives, needs and expectations of each workforce partner.
- The EMP goes into the mitigation season with a solid schedule of client treatments and crew assignments.

- Partner information is easily accessible to redirect capacity as needed when circumstances change.

We recognized the need to develop workforce partner profiles as a central element to our onboarding process, and to inform our EMP scheduling. Partner organizations have their own objectives, grant deliverables, funding and staff capacity issues, and schedules that can impact collaborative planning, scheduling and project completion. When relying on multiple partners and crews, identifying, documenting and understanding these needs in advance is critical for successfully matching crews with mitigation treatment types and timing.

As we learned during our pilot EMP, some nationally based organizations can provide large skilled crews if the EMP can offer them the types of mitigation projects that meet the objectives of both the organization and its volunteers. For example, treatments involving felling and bucking trees can attract skilled volunteers who need saw hours to maintain their chainsaw certifications. However, working with national organizations that bring volunteers from across the state or even the region to our area can overtax EMP staff capacity with additional logistics, such as coordinating accommodations and securing donations of lodging and food.

Although finalizing specific mitigation treatment plans occurs later in the process, we describe additional administrative elements of workforce partnerships here. Solidifying scopes of work and commitments therein may vary, depending on each workforce partner. In our pilot EMP, we found that some partners preferred informal agreements, having operated historically on the value of their word and their history in the community, or wanting to avoid legal consultation for formal documents. On the other end of the spectrum, formal Memoranda of Understanding (MOUs) may be appropriate for other partnerships. Partners may also feel comfortable transitioning towards more formal agreements having worked with an EMP over multiple seasons. We tailored our approach based on each partner, arriving at an agreement as to the partner's commitments relating to crew capacity, equipment, scheduling and planned treatments relative to the scope of work derived from each risk assessment. Several partners also visited client properties to confirm that their crews' skills and equipment aligned with the proposed mitigation. This provided FAMV and these partners an opportunity to modify the scopes of work and final agreements as needed.

Another important aspect of working with mitigation crews is ensuring protections are in place for all entities and individuals involved, including medical and liability waivers, and media release permissions. All of our pilot EMP partners were responsible for recruiting crew from their membership, volunteers or students, and most facilitated completion of waiver and permission forms or let us secure signatures from their crews. We ensured that all documentation was complete before any treatment work began.

As the EMP progresses beyond its initial start-up stage, the number of new workforce partners being onboarded will taper off simply because there will be increasingly fewer untapped potential partners.

Recommended Actions

Develop a set of workforce partner forms to establish profiles that allow EMP staff to determine each workforce partner's crew capacities, skills, programmatic objectives and other information crucial for mitigation planning.

Become familiar with the culture of the workforce partner to facilitate a smooth process for finalizing a scope of work and commitment to engage in mitigation treatments.

Develop communication and procedural strategies to ensure that all EMP partners and crew understand and agree upon the terms and conditions in the mitigation scope of work. This agreement may take different forms, depending on the partner and the EMP leadership.

Arrange annual or two-year contracts/agreements with local contractors, when appropriate, to perform specific types of work, building some predictability into EMP treatment capacity and contractor scheduling. Note that the EMP will need to be careful to abide by both funders' and fiscal sponsors' legal requirements – for example, some funders may require that the grant recipient (the EMP) solicit bids from three or more contractors.

Ensure that medical and legal liability, and media permissions forms are included, completed and signed before treatments begin, regardless of the broad agreement format. These forms should have language to protect the EMP, its leadership and staff, all collaborating partners, the EMP clients themselves, and all workforce members, whether they are paid employees, contractors, volunteers or students.

See the EMP Toolkit for more information and examples.

8. Assessments and Scopes of Work

In order to know which mitigation treatments should be implemented on client properties, wildfire risks associated with their homes and surrounding land must be identified. The National Fire Protection Association (2018) has developed the accepted industry standards for reducing ignition hazards from wildfire and for conducting assessments of the risks (see EMP Toolkit for example assessment forms). This NFPA standard-based assessment process, however, can present an ethical and emotional dilemma for the EMP and their clients.

Given the number of people needing equitable mitigation assistance in our area, and the extensive level of work required at most clients' homes to complete a full NFPA assessment-driven treatment plan, we determined it is neither feasible nor sustainable to complete all mitigation necessary at each client's residence and land. Attempting to do so would prevent the EMP from performing beneficial treatments on an effective scale. See section **11. Treatment Implementation** for examples of the types of mitigation steps that we were able to implement.

The dilemma lies in the relationship between the scopes of risk assessments and mitigations performed via the EMP. Clients could receive a full risk assessment and learn all the ways their home and surrounding land might ignite. However, as noted above, an MV EMP is likely

unable to mitigate all risks identified in the full assessment. Meanwhile, as EMP-eligible clients, these residents are by definition limited in their financial or physical means, agency or capacity to either participate in or pay for mitigation at their residence. Conducting a full risk assessment regardless of whether EMP crews can mitigate all risks could put people who are already experiencing challenges and social vulnerability under additional stress by highlighting their predicament. Living with the fear prompted by a new awareness of the unmitigated risks a resident personally faces can be devastating, perhaps triggering a past wildfire-related trauma response or resulting in a paralyzing sense of hopelessness.

As an alternative, an EMP could provide targeted risk assessments of clients' homes and surrounding land, focusing on conditions that are likely to be addressed given EMP and client capacity. The perception of risk is then more aligned with the scope of assessment and associated mitigation, relieving EMP clients of the fear and psychological burden of unmitigated risks. However, if EMP clients are not made aware of any additional risks related to their residences, they are not given the ability to (a) make informed choices about their living situation or (b) seek additional ways to remove or reduce the risks identified. Finally, this approach raises significant liability issues because assessors would be aware of risks that are not communicated to the EMP client. This alternative therefore poses both ethical and liability issues for the EMP.

This dilemma forced us to consider three options, recognizing that any decision we made about the scopes of assessments relative to treatments would have consequences for our EMP candidates and, potentially, our EMP as well:

- conduct a full NFPA assessment and perform all work identified (i.e., severely limit the number of EMP clients)
- conduct a full assessment and perform a limited scope of mitigation treatment, while also working to address clients' concerns and fears
- conduct limited assessments and perform the associated limited mitigation work

In consulting other Mitigation Organizations, we learned that not all of them assessed properties based on NFPA HIZ treatment standards (assessing home envelope, and home ignition zones 1, 2 and 3). Some assessments aligned with state standards and others reflected relevant implementation constraints, such as limitations of treatment types, mitigation costs or hours spent at each client's residence. One Mitigation Organization that performs a full assessment of clients' homes, other structures and surrounding land (HIZ 1-3) acknowledged the challenges of trying to bridge the gap between what an assessment identifies and the mitigation that can be performed with the resources available:

> *[W]e have very limited ability to close those gaps. We can provide additional funds for forestry work for those experiencing financial hardship. That's fairly straightforward since we already work with licensed forestry contractors and it's just a matter of paying. We also often contract with youth corps for a week or two per summer of their services, which we then offer at no charge to the neediest of our clients (via an application/screening process). But their capabilities are limited to carting away debris, raking and other low-skill activities. Our biggest resource gap is for home retrofit contractors. We'd love to have a list available to all our clients but honestly haven't had much luck recruiting and retaining "handy-person" type contractors and this requires skill sets beyond teen-age help.* (Abby Silver, Wildfire Partners, pers. comm.)

As noted above, we believe the first option (full assessment, full mitigation, limited clients) would prevent our EMP from making an impact on the scale required in the MV. We also believe that from an ethical and liability perspective, conducting and sharing the results of a full risk assessment is the right choice for the MV. We offer suggestions for how to address the challenging consequences created by the gap between identified and EMP-mitigated risks in the **RECOMMENDED ACTIONS** below.

Having determined that we would offer full risk assessments to EMP clients, we arranged with Okanogan CD and WA DNR to conduct risk assessments based on the NFPA's 1144 Standard for Reducing Structure Ignition Hazards from Wildland Fire (2018). We asked pilot EMP clients to join agency and EMP staff for the assessment so that they could ask questions and learn directly from the risk assessors.

Based on the risk assessments, Okanogan CD, WA DNR and EMP staff were able to recommend high priority treatments for each property, and to discuss with clients the idea of mitigation as an ongoing process. FAMV and its partner, Methow At Home, also took time to brainstorm with clients some of the ways that family and friends could assist with mitigation, helping to generate a sense of agency and empowerment.

After considering treatment recommendations and having conversations with clients, FAMV – sometimes with assistance from partners such as WA DNR – developed a scope of work for each property, detailing the EMP mitigation actions, crews and equipment required for each specific treatment. In several pilot EMP cases, a more comprehensive scope of work assigned some mitigation steps to clients and/or family members and friends who wanted to help, and to contractors hired to perform work that was beyond our pilot project's capacity or skill set (see section **11. Treatment Implementation** for examples of pilot EMP limitations). See **RECOMMENDED ACTIONS** below for additional strategies to pursue mitigation treatments that do not fall within the direct EMP scope of work.

Note that there is a careful balance between offering treatments and respecting clients' values and wishes. In rural communities, including the MV, many of the longtime residents have developed or adopted place-based strategies that they are able to employ with limited resources to deal with the challenges and risks they face. Compromises may be necessary between ideal mitigation treatments and those that reflect clients' values, needs and abilities. These compromises provide a pathway to engage clients and to build their trust, and foster a willingness among clients to continue with ongoing mitigation steps and maintenance.

RECOMMENDED ACTIONS

Determine how the EMP organization will address the dilemma created by the gap between risk assessment and mitigation capacity. FAMV chose to conduct full risk assessments and work creatively with partners to ease clients' concerns and harness additional capacity to address the gap (see bulleted list below).

Utilize partners with existing resources and programs to offer NFPA Standard 1144-based property risk assessments for EMP clients, if relevant. This approach has significant liability benefits.

Invite the EMP client to accompany risk assessor(s) and EMP staff (including the client advocate) in the property inspection. Use the assessment as an opportunity to learn whether the client's property meets any of the property characteristics prioritization criteria discussed in section **10. Client Prioritization**.

Develop procedures for the EMP, in collaboration with risk assessment partners, to confidently identify treatments that will remove the most immediate risks on clients' properties and communicate this strategic risk-reduction clearly to clients. With EMP client advocates and partners, collaborate with clients to identify and develop long-term action plans to reduce as many risks identified as possible.

Collaborate to identify creative and feasible strategies and resources to pursue mitigation actions beyond the EMP-provided work, in order to alleviate the anxiety that may arise from the gap between risks identified in the assessment and treatments available directly through the EMP. The objectives are to combat any fear or inaction that may be triggered by risk assessments, meeting EMP clients where they are at in terms of capacity and means, and motivating them to take whatever steps that they can, working from the house outwards. Examples of strategies that can supplement direct EMP treatments include

- collaborating with agencies or other organizations that are conducting other mitigation work in an EMP client's neighborhood to bring resources to that client's property,
- coordinating with Firewise USA sites and their residents to assist EMP clients in their neighborhoods and/or incorporate them into their annual work parties,
- accessing other programs that incidentally provide fire mitigation benefits (e.g., Department of Energy incentives for replacing single-pane with double-pane windows),
- providing opportunities during EMP mitigation efforts to educate and build client capacity so that they may conduct addition work directly, and
- lining up assistance from family, friends, neighbors, churches and other community service groups.

Develop a scope of work in collaboration with EMP staff, clients and workforce partners, taking into account the perspectives and needs of the clients. Meet with workforce partners to clarify and delineate the full scope of work that EMP workforce partners can and will perform.

Recognize that mitigation is only one risk reduction tool and connect EMP clients with resources and partners to help them explore other ways they can reduce their personal risks by creating wildfire response and evacuation plans either for their household or in conjunction with a greater neighborhood effort.

9. Treatment Planning

Though presented linearly here, treatment planning occurs in tandem with refining the scope of work (section 8) and client prioritization (section 10), as elements of any one of these steps may prompt a reassessment of the other steps. This section presents general treatment issues that broadly influence the planning of mitigation seasons and specific treatments on clients' properties (see also section **14. Program Management**).

Seasonal and local conditions that constrain treatment timing and/or scope are important to consider. For the MV, the two mitigation windows are roughly between April through July and again between October through mid-November. Within each implementation window, the EMP can plan specific treatments as needed to take advantage of conditions. Mitigation plans that involve felling of understory conifers require a crew trained on chainsaws and chippers. These treatments should be completed during a seasonal window when there is no risk of a fire start and before Washington State implements its Industrial Fire Precaution Levels (IFPLs) to regulate use of spark-emitting power tools in areas protected by WA DNR (Industrial Restrictions, 2004; WA DNR, n.d.-c, 2013). While some IFPL levels permit work under specified conditions, FAMV learned during the pilot EMP that we did not have the funding, staffing or insurance capacity to conduct mitigation work once IFPLs were activated for the season. In addition, the timing of IFLP enactment – and ensuing restrictions on power tools – is unpredictable, as it varies annually based on local weather and fuel conditions. Given these challenges, we determined that we must plan proactively and conservatively for potential enaction of IFPLs. We established that the final day that EMP crews can use power tools will be whichever happens first: June 30 or enactment of the IFPLs. This guideline allows the EMP a high likelihood of safely scheduling and honoring commitments by partners with mitigation crews using power tools, who rely on firm schedules to successfully implement the entire mitigation process and to meet their own programmatic needs. In the unlikely (but not impossible) event that IFPLs are enacted prior to June 30, power tool usage would have to stop earlier, and treatment schedules would have to be adjusted.

Another example of local seasonal conditions that influence treatment planning is the susceptibility of ponderosa and other pines to beetle infestations, which are a significant cause of pine tree mortality (Kegley et al., n.d.) that may, in turn, lead to increased wildfire risks. In the MV, late October until snow prohibits work is typically the optimal window to thin pine tree species and other conifers because branches and slash that have over-wintered are less likely to attract egg-laying pine beetles. Treatments that include substantial thinning of these tree species should be prioritized for this window.

Despite diligent planning, challenges will still arise. Sudden changes in partners' schedules can threaten completion of mitigation treatment implementation. For example, a mitigation partner committed to providing a large crew of highly skilled work on multiple properties during a narrow safe-work window may suddenly have to cancel – they may be deployed to fight fire, assist with disaster recovery or participate in postfire-season prescribed fire work. At worst, no other crew would be able to step in at the last minute and the mitigation treatments would not be completed at the scheduled time. At best, another crew would be scheduled with minimal notice, requiring substantial EMP staff time for finding and planning with another implementation partner. A robust network of onboarded mitigation partners helps to alleviate these types of challenges. In addition, scheduling contingencies can be considered in advance to identify backup crew in the event a mitigation services partner needs to cancel.

Recommended Actions

Proactively develop guidelines for seasonal restrictions to improve the reliability of scheduling for all parties involved. For summer in the MV, we determined that chainsaws,

power pole saws, chippers, masticators or any other power tools/equipment may not be used when any IFPL limitations go into effect or after June 30, whichever comes first. In autumn, treatments requiring power tools may begin again after fire season ends, i.e., once all IFPLs are lifted.

Evaluate additional local considerations (e.g., forest pest life cycles) to develop routine strategies that make treatment planning more predictable and efficient, and treatments more effective.

Expect and prepare for sudden changes in treatment plans by onboarding multiple workforce partners early in the process and developing contingency plans when possible.

10. Client Prioritization

Client prioritization is a two-stage process that takes into account (1) clients' property characteristics and (2) logistical factors. Stage 1 is informed by assessment results and client/property particulars gleaned throughout the onboarding process. Stage 2 focuses on matching treatment needs with available work crews and equipment.

Stage 1

Most Mitigation Organizations we researched prioritize clients' properties on a first come, first served basis. One prioritizes treatments where multiple clients live in relatively close proximity (client clusters) to maximize crew efficiency. Another program's main objective is mitigation on private lands that provide the most benefit to reducing high wildfire risk in the wildland-urban interface, leveraging landscape-scale mitigation, and providing treatments in locations where the community has already demonstrated its commitment to reducing fuels.

Our organizational and programmatic objectives, coupled with our pilot program experience and lessons learned from the Mitigation Organizations, led us to additional considerations for prioritizing treatments on EMP clients' properties:

- Strategic maximization of workforce efficiencies and landscape-based opportunities enables treatments that are likely to result in better community-wide or landscape-scale wildfire outcomes.
- Addressing clients' mitigation needs in high wildfire risk areas can lead to accelerated neighborhood engagement and adoption of strategies that reduce wildfire risk.

We identified the following three situations that could serve to leverage mitigation investments for "added-value" risk reduction and/or community engagement benefits:

Proximity to other EMP clients: When EMP clients are closely clustered together within a neighborhood or watershed, it enables EMP mitigation crews to focus effort and resources on one area for maximum efficiency. The larger scale of work also makes it easier to heighten community awareness, while contributing to broader, landscape-scale reduction of wildfire risks.

Proximity to other nearby mitigation projects or areas with natural fuel breaks: When EMP clients are near other mitigation projects (private cost-share programs, public restoration

programs, Firewise USA neighborhoods) or areas with natural fuel breaks (fire scars, irrigated fields, bodies of water), mitigation on the property where clients live also contributes to landscape-scale risk reduction, potentially adding more value than if the client lived far from any areas of reduced risk. In addition, where public land managers and private MV landowners are engaging in mitigation treatments in either the MV's wildlands or the wildland-urban interface, prioritizing nearby EMP clients contributes to landscape-scale mitigation, benefiting many of the surrounding residents.

Proximity to areas with specific wildfire vulnerabilities: Some EMP clients are in areas with specific wildfire vulnerabilities, such as steep slopes with heavy fuel loads, high likelihood of accidental or natural ignitions,[9] dense development or many mobile or manufactured homes, prevailing winds that run the length of the built area, difficult or single ingress/egress, or significant distance from a fire station or water source. These factors can compound an EMP client's potential wildfire impacts and outcomes. Creating defensible space and treating the HIZ to help reduce ember ignition and wildfire intensity, spread and devastating impacts is critical, raising the priority of that client and the property where they live.

Prioritizing these sets of circumstances will help us achieve our own EMP objectives and aligns us with several key objectives in national and state forest health and wildfire plans/strategies. For example:

- By treating EMP client properties in areas of high wildfire transmission risk and promoting client actions that encourage neighbors' participation (such as sharing felled trees for firewood or wood chips for neighbor's gardens or animal bedding), the mitigation treatments create tangible examples of risk reduction success that resonate with all residents. In this way, the EMP funding benefits not only those most in need, but also promotes WA DNR's Washington State Wildland Fire Protection 10-Year Strategic Plan (2019) objectives of supporting and developing fire adapted communities and engaging entire neighborhoods.
- By connecting one private treatment with other private and public treatments, the EMP promotes cross-boundary landscape-scale mitigation that aligns with the state and federal agency objective of "all hands, all lands" (USFS, 2022b; WA DNR, 2023). This is the necessary approach to accomplish an appropriate scale of mitigation that will adequately protect the community and surrounding landscape from devastating wildfire impacts.

Stage 2

While Stage 1 client prioritization criteria relate to clients' properties, other factors related to project implementation also determine which properties can be treated first. Availability of funding will impact the number of clients that can be scheduled and may determine treatment scale. Crew, materials and equipment availability must be aligned with the mitigation treatment needs of clients designated high priority in Stage 1. Finally, seasonal and local conditions that constrain treatment scheduling and/or scope must be considered.

[9] Accidental and natural ignitions can be triggered from a wide variety of sources, including sparks from flat tires, dragging chains from trailers, vehicles overheating, vehicles pulling off onto vegetated shoulders, smoldering cigarettes tossed from vehicles, resident burn piles, and campground and dispersed camping campfires. Wildlife (birds and squirrels), wind and branches are some of the most common causes of sparks at power lines and transformer poles, and some areas, especially ridges, may be more susceptible to lightning strikes.

See section **9. Treatment Planning** for discussions of limitations due to IFPLs and local forest pest life cycles.

Ultimately, prioritization of mitigation projects determined in Stage 1 may shift as Stage 2 criteria are considered. In addition, there may be an iterative process between developing the scope of work and final prioritization. For example, after we matched workforce partners with clients, several partners visited treatment sites to confirm that their crew capacities and skills aligned with the proposed treatments (see section **9. Treatment Planning**). Significant changes to the scope of work and/or crew, equipment and scheduling needs could influence client prioritization.

It was clear that integrating the Stage 1 and Stage 2 prioritization steps required access to and management of various types of data. We devised and found it essential to use a spreadsheet to track data relating to the client, the property where they live and the mitigation workforce (see EMP Toolkit). We also would have benefited from using a mapping system that depicts key information about all onboarded clients' locations, such as nearby private versus public landownership; existing fuels and other specific wildfire vulnerabilities; burn scars and other natural fuel breaks; and planned, existing or completed mitigation or adaptation projects. Multiple state and federal partners already generate or have access to data layers that can inform our EMP prioritization and planning process. FAMV hopes to build capacity to develop a mapping system that takes advantage of these available data.

Recommended Actions

Apply the Stage 1 criteria to initially prioritize the timing of clients' treatments:

- proximity to other EMP clients (client cluster)
- proximity to existing mitigation or adaptation projects, or areas with natural fuel breaks
- proximity to areas with specific wildfire vulnerabilities

Establish approaches for clients who do not meet the Stage 1 criteria to draw their circumstances closer to those criteria, thereby decreasing their wait times. For example, EMP staff and partners could target outreach in a low-priority client's neighborhood to attempt to develop a client cluster.

Integrate the Stage 2 criteria below into the results of Stage 1 prioritization:

- funding availability
- availability of crews with the skill sets necessary for specific treatments
- availability of materials and equipment
- temporal windows of opportunity based on weather, seasonal conditions (e.g., snow melt, flooding, heat, drought, fire season and snow) and equipment use limitations (Industrial Fire Precaution Levels and/or internal program policies)

Work with the EMP's network of onboarded workforce partners to match crews/contractors with EMP clients (in tandem with Stage 2 prioritization), taking into account the specific treatments required, and crew and equipment capacity and availability.

Develop a process for identifying, accessing, managing and evaluating data required for both stages of prioritization. See the EMP Toolkit for additional details.

Consider developing geographic information system (GIS) tools to graphically depict and evaluate clients' properties relative to the prioritization criteria. Develop or leverage partnerships with agencies or other entities that either track relevant data, such as previously burned areas, mitigated properties or Firewise USA sites, or ideally, existing GIS layers that can be shared.

11. Treatment Implementation

The client assessment and prioritization processes (sections 8-10) informed the wildfire risk mitigation treatments that our pilot project implemented, and based on factors at play for the EMP's target populations, we found it was especially important to

- take small steps to help harden the home envelope against ember intrusion,
- hardscape and landscape appropriately in HIZ 1 (0-5 feet from the home) to create a no ignition or combustion zone,
- remove or reduce vegetative/woody fuels in HIZs 1-3 (0-100 feet from the home) and beyond, depending upon the property, and
- help dispose of accumulated human-made fuels.

Our pilot EMP clients' properties shared certain characteristics even though the properties and their fuel types differed greatly. Most of our pilot EMP clients live in older wooden or manufactured homes, all of which needed maintenance and repair. Most of the properties had multiple wooden sheds or other outbuildings in varying condition close to the home itself as well as an accumulation of combustible human-made materials. Given our program capabilities and funding, we focused on home maintenance and retrofit actions that specifically harden the home to fire, e.g., eliminating places in the home envelope where embers can intrude by screening in soffits, vents, porches, decks and wooden stairs.

We also cleared accumulated leaves, pine needles and other wind-borne debris from roofs, gutters, and wooden porches and decks to minimize opportunities for embers to collect and ignite flammable material, and we removed flammable materials (including firewood and lumber) from under wooden decks. None of our pilot EMP volunteer or agency-led crews could perform work on the homes themselves, either because their organizations specifically prohibit this work, or they lacked the skills and tools. Additionally, screening in soffits and vents, which are usually located on the roof or along the roof line, put volunteers at risk of falling. To address these priority treatments, we enlisted the aid of clients' families and hired an independent contractor. Unfortunately, there are numerous important NFPA treatments to harden the home that require replacement of existing materials with nonflammable or fire-resistant alternatives (e.g., windows, siding, roofing) that we could not provide due to funding and capacity limitations.

Other local and state organizations may be available to partner with the EMP on targeted home hardening steps. For example, an organization that assists historically marginalized, underserved and overburdened populations in implementing home energy efficiency improvements might provide and install double-pane windows; or a youth job corps program that is developing sustainable career pathways might assist EMP clients with sealing the

building envelope by screening vents and open spaces, installing flashing or caulking gaps in siding.

In addressing hardscaping and landscaping, we found some clients had mature trees overhanging HIZ 1 and the roof and growing up against the house. We were able to have a certified arborist remove one such tree and the limbs from another. As permitted by funding, clients' permissions and available appropriate crew, we prioritized laying weed cloth and gravel within the five-foot perimeter around both the home and any outbuildings within 30 feet of the home which, if they caught fire, would pose an ignition risk to the home as well.

Not all clients were comfortable treating their properties in this fashion. Some chose to have our crews remove trees and shrubs (especially highly combustible arborvitae and juniper), beauty bark or other combustible mulch, dead vegetation and pine duff, but did not want crews to lay weed cloth and gravel. With the understanding that under the right conditions, any plant will burn, some clients still chose to retain or plant low-growing perennials in HIZ 1, which if properly maintained and irrigated can resist ignition. We strived to help clients recognize that they could choose treatments designed to reduce both ignition risk and the scope of ongoing maintenance required, or treatments that provided short-term benefits but would necessitate clients' diligent and continuous maintenance work (weeding, raking, pruning, deadheading and watering) to keep HIZ 1 free of all combustible materials. This is a key issue for many residents likely to be targeted by our EMP, who often do not have the capacity to deal with the added burden of ongoing maintenance. Ultimately, we concluded that the EMP could not dictate treatments; we could only offer treatments in addition to information and educational resources about the underlying logic of those treatments and how best to mitigate risks given the specific strategies they ultimately chose (e.g., best practices for properly maintaining HIZ 1 landscaping).

Beyond HIZ 1, clients' properties ranged from over 20 acres of heavily forested land up a steep drainage on a forest service road to less than 2.5 acres containing shrub steppe, mature ponderosa pine and a riparian area along a busy road. The diverse properties and fuel types called for multiple and varied treatments. We were able to focus resources on HIZ 2 but our efforts were significantly limited in HIZ 3. Two client properties were situated in forested areas with dense pine and fir overstory and mixed understory, requiring a focus on HIZ 2, HIZ 3 and well beyond to reduce the intensity and spread of a crown fire. Without the partnership of WA DNR, which provided the forest health prescriptions, staff, crews and AmeriCorps members working as Washington Conservation Corps, we would not have been able to mitigate these properties. This work was especially reliant on having crews available with specific (e.g., chainsaw and chipper) skills and/or certifications.

All pilot EMP clients had, to one degree or another, accumulated human-made fuels, which can easily occur when residents have lived for years on the same rural property. Often there are no easy or inexpensive ways to dispose of these items, especially for those with limited economic means. The accumulation of human-made fuels presents a clear wildfire risk because of how they are stored and how they burn – their aggregation and material properties lead to intense, even explosive fires that often emit toxic compounds into the air. These circumstances prevent wildland firefighters from working safely anywhere in the area, further compounding the fire risk to the remaining property and surrounds. It is vital for EMP mitigation strategies to include removal of human-made materials, especially those that are

highly combustible and/or toxic when burned, or that are stored within five feet from the home or in open sheds within 30 feet from the home.

Some pilot EMP crews assisted with removal and dumping of human-made fuels; however, safety and liability concerns limited our ability to directly address these fuels on some properties. We guided willing family members who wished to assist with these treatments. Additionally, we recognize the need to recruit and work with crews specifically trained to address these types of circumstances (e.g., hazardous and biohazardous materials, unstable structures, etc.).

Most of our treatment plans provided opportunities for more than one type of workforce to participate in the same work party. A skilled crew performing technical mitigation work benefited from having a second crew of able-bodied volunteers of all ages who performed nontechnical preparatory and follow-up work. Despite the benefits of the multiskilled work party approach, it was not always preferred. For example, when all work was concentrated in an acre or less, it was safer to hold two separate work parties, so a skilled crew could first complete thinning and limb removal, and a second nontechnical and possibly multigenerational crew could rake the pine duff, cones and needles, and pile the trees and branches for running through a chipper.

At the beginning of each work party, regardless of who the workforce partners and crews were, EMP representatives met with the crew to address safety issues, best practices, work guidelines and limitations currently in effect, and expectations for the day. For example, a crew using chain or pole saws needs to understand the EMP's policies about use of personal protective equipment. The EMP must set the expectations for and be present during all work parties involving volunteers and at least be available by phone during the work party of paid professionals. See additional resources in the EMP Toolkit.

Challenges

One important and frustrating finding was that our mitigation planning and implementation process seemed to be far more time-consuming and complicated compared to processes utilized by several of the Mitigation Organizations we interviewed. The factors that slowed our process were

- prescribing a broad range of mitigation treatments based upon the findings of the home risk assessment rather than prescribing a limited set of mitigation treatments, and
- utilizing multiple crews and arranging multiple work parties, which further compounded the effort and complications relating to
    - ensuring all documents and forms had been signed, such as tracking in-kind and cash match from the many different workforce members, and
    - addressing significant and sometimes unexpected crew scheduling issues.

Our pilot EMP program essentially offered and implemented custom treatment plans for each client based on their personal circumstances and wildfire risk mitigation assessment, drawing from the extensive set of NFPA-recommended options. This may be a sustainable approach if EMP resources are abundant. Given our (and the generally more likely) scenario, limiting the universe of mitigation treatments to a preestablished "menu" of options would make assignment, scheduling and implementation of appropriate crews relatively

streamlined and quick. However, if assessments identify risks that the EMP menu options cannot address, it is important that the EMP and collaborating partners help clients find ways to make progress on the other risks noted. The **RECOMMENDED ACTIONS** in section **8. Assessments and Scopes of Work** elaborate on creative strategies for leveraging non-EMP capacity and resources to address necessary mitigation treatments that the EMP cannot complete.

Fostering Community Fire Adaptation

We quickly learned that work parties with students and community-based volunteers presented the perfect opportunities to foster discussion about how to coexist with fire in our environment and how the specific actions we were taking would help reduce the likelihood of EMP clients losing their homes to wildfire embers, heat or flame. We included time for discovery and conversation in our work parties, offering volunteers and students opportunities to learn through action, observation and sharing, which enhanced their experience. This also met the organizational objectives of some of our workforce partners and provided additional incentive for those partners to collaborate with us.

Multigenerational work parties also provided numerous benefits to the participants. Youth and elders enjoyed and learned from working alongside each other, gaining new perspectives and insights about living with fire as well as new skills for reducing fire-related risks. Having volunteers on the crew with a background in fire or fuel management or who served with our local fire district was especially helpful. Those volunteers would jump into discussions and share specific examples and ideas based on their experience. Some youth responded to those discussions by staying longer to do additional mitigation work. Meanwhile, elders with experience and wisdom to share experienced a renewed sense of purpose and relevance. For a future equity-based youth job corps – one of FAMV's objectives – these multigenerational work parties would provide additional mentorship, connections and exposure to career opportunities. This approach to mitigation also satisfies FAMV's objective to foster widespread buy-in to community fire adaptation so that all MV residents may live resiliently with wildfire.

Finally, the EMP can create opportunities for neighborhood education and engagement if, for example, mitigation treatments are visible to other landowners or residents, the EMP client invites neighbors to utilize chips or felled trees, and they otherwise promote the benefits of mitigation work to nearby residents. Such opportunities can even catalyze the development of a Firewise USA site, which happened in the course of our pilot program.

RECOMMENDED ACTIONS

Focus mitigation on high-impact treatments that are prevalent among EMP clients:

- home hardening
- hardscaping
- reduction of vegetative fuels
- removal of human-made fuels

Create a limited menu of high-impact treatments that will benefit the diverse EMP clients' properties and, ideally, help reduce the risk of devastating outcomes from a wildfire on a

large enough scale to help reduce the community's wildfire risk. Having this preestablished and focused list of treatments helps the EMP and mitigation workforce partners efficiently plan and implement each client's mitigation treatments and helps balance crew time and resources among multiple clients.

Seek opportunities to encourage and support enrichment, inquiry-based dialogue and alignment of objectives among workforce partners and crew, clients, and clients' neighbors to foster community understanding and buy-in of behaviors and actions that lead to community wildfire resilience.

12. Managing Partnerships

Our EMP model relied upon collaboration with multiple partners, from client recruitment to treatment implementation, as has been noted throughout this report. By developing synergistic partnerships and aligning intentions and objectives with local, regional, state and federal organizations and agencies, FAMV leveraged their capacity and expertise, gained in-kind and cash match for grants, and ensured the greatest participation and engagement possible within our community.

For this level of collaboration to remain sustainable, all partners must derive benefits from the process. In a place like the MV, there are, in addition to state and local agencies, many nongovernmental organizations supporting the community. Current and potential partners are diverse, and the reasons why they do or would participate in the EMP vary as well. We learned the importance of understanding what our partners needed and wanted in a collaboration, and how to build a model in which everyone benefited. We supported each other, highlighted each other's strengths and helped each other achieve organizational objectives. For example:

- Okanogan County Long Term Recovery Group mentored FAMV's efforts to identify client eligibility criteria and best practices for onboarding volunteer groups, benefiting both organizations.
- Okanogan CD and WA DNR provided FAMV with risk assessments and/or treatment crews and gained exposure for and promotion of their services and programs, including Wildfire Ready Neighbors, Firewise USA site support and mitigation cost-share opportunities.
- Methow At Home collaborated with FAMV both to identify and recruit potential clients and to co-plan and lead some of the work parties. Methow At Home also secured EMP assistance for several of its members, learned how best to support its membership in gaining agency with living in a fire environment and in developing an understanding of the need and methods for creation of defensible space.
- Outward Bound, Winthrop Kiwanis, Winthrop Key Club, Western Washington University Sustainability Pathways students and Methow Valley School District students joined EMP volunteer work parties and participated in the planned education/discussion time built into the work party format, and learned about career opportunities, wildfire resilience, and collaborative ways to support the community.
- WA DNR, Team Rubicon, Winthrop Kiwanis and Okanogan County Fire District 6 volunteers collaborated with FAMV to co-plan and lead EMP work parties, successfully meeting their organizational missions to serve local communities and create a safer living situation for all in the face of high wildfire risk. WA DNR and Team Rubicon, especially, gained local awareness and recognition for the assistance they

bring to our community. Volunteers and crew from these organizations met personal objectives for skills practice and development.

Another set of partnerships engaged state universities. One of FAMV's goals is to introduce young people to career pathways in wildfire prevention, mitigation, response and restoration. During the pilot EMP, FAMV partnered with two different university programs – University of Washington's Environmental Studies Capstone Program and Western Washington University's Environmental Studies Sustainability Pathways Program – to involve students in two separate research projects to design feasible models for bringing equity to (a) historically marginalized, underserved and overburdened community members who needed mitigation assistance to reduce wildfire and other climate-related risks (i.e., an EMP), and (b) historically marginalized, underserved and overburdened local youth who face barriers to viable pathways for career development (e.g., a youth job corps).

A UW Environmental Studies Capstone student worked closely with FAMV as an intern and then as our EMP Program Associate to help research and develop FAMV's EMP. WWU Sustainability Pathways summer interns participated in a project sponsored by several collaborating local organizations and led by FAMV to explore and develop accessible career pathways for youth, especially vulnerable youth.

Working with these highly motivated and well-qualified students benefited FAMV, which gained fresh new perspectives and one long-term working relationship (the UW intern joined our staff and co-authored this report). All four students were immersed in a new environment and culture; gained new perspectives, skills, and work and life experiences; and had the opportunity to research, design and identify solutions to place-based community needs.

Continuing these collaborations and building more partnerships will support the EMP program in assisting additional clients and properties and will help advance development of a job corps for local youth and historically marginalized, underserved and overburdened populations.

RECOMMENDED ACTIONS

Sustain current partnerships and collaborations with

- social and community service organizations, to identify/recruit and onboard both clients and volunteers,
- state and county agencies, to assess client risk, help prepare treatment plans, provide trained crew and crew leads for specific treatments, and advise and consult on technical and policy issues,
- any existing local job corps program(s), to enlist their workforce services and support their development,
- universities/environmental studies programs, to engage student interns for specific EMP projects, and
- contractors, to perform specific treatments and to fill in any mitigation schedule and treatment gaps.

Expand partnerships by identifying other entities that are involved with social/community services, mitigation of climate change (including wildfire) risks and impacts, and emergency response and recovery – especially for underserved populations. Those organization may deal directly with the risk factor (e.g., air quality, water quality, forest health, flooding) or with the impact of those risk factors on community members.

Build new and strengthen partnerships by exploring (and continuing to assess) where EMP objectives align and how to leverage each other's assets.

Actively support and foster any efforts to create local job corps for youth and historically marginalized, underserved and overburdened populations.

See also section **1. Client Outreach and Recruitment** and section **6. Workforce Model** for other important partnership recommended actions.

13. Organizational and Programmatic Structure

The most effective overarching organizational structure for EMP organizations will vary, and the best approach for any particular program will depend on numerous factors. Having an existing community fire adaptation, mitigation, response, and/or recovery organization develop and house an equitable wildfire risk mitigation program is likely the easiest pathway for starting an EMP because

- stakeholders, the broad community, funders and likely collaborating partners (agencies, organizations, affinity groups) ideally already know and trust the existing organization, and
- staff, partners, supporters and volunteers of the existing organization can help initiate development and assist with early staffing needs.

Of the six western state Mitigation Organizations we interviewed, five are nonprofit entities, and one is managed by county government. Four of the five nonprofit organizations are local Fire Safe Councils (FSCs), which are "grassroots, community-led organizations that mobilize residents to protect their homes, communities, and environments from catastrophic wildfire" (California Fire Safe Council [CFSC], 2023a). These FSCs are supported by the California Fire Safe Council, which supports existing and helps create new FSCs in California, building their capacity to become self-sufficient organizations, "able to plan and manage community wildfire preparedness projects, and able to acquire grant funding to accomplish their objectives" (CFSC, 2023b). The fifth nonprofit Mitigation Organization is an independent entity that offers multiple programs facilitating collaborative planning, coordination and implementation of sustainable initiatives promoting rural lifestyle.

We are not in a position to say, and cannot speculate, which organizational structure – a local nonprofit supported by a statewide 501(c)(3) organization, an independent nonprofit, a local governmental entity, or another alternative – would provide the most benefits to an EMP.

Whether the Mitigation Organizations we interviewed are nonprofit or local governmental entities, their mitigation programs are not the sole programs that they are managing. This was also true during our pilot EMP for FAMV, which provides a suite of programs and projects to the MV community. What differs between FAMV and the Mitigation Organizations we consulted is that the latter have staff dedicated solely to coordinating and managing the

mitigation program, in addition to staff that support organizational needs across all their programs. FAMV, as noted in the introduction, is a project of the Washington Resource Conservation and Development Council, a 501(c)3 nonprofit organization which provides guidance to FAMV regarding its initiatives and programs, and program administration support, but no staffing.

The following examples of the Mitigation Organizations' staffing models allow them to serve anywhere from 125 to over 500 clients a year:

- Four employees work directly and exclusively on fuel management (each about 90% of full time, or 0.9 full-time equivalent [FTE]). Part-time employees coordinate and schedule programs (about 0.8 FTE), conduct home assessments (up to 0.25 FTE) and assist with grant proposals (up to 0.25 FTE). Two additional full-time employees are generalists and contribute directly and indirectly to all aspects of the organization's many programs.
- One employee works solely on the mitigation program and three employees contribute to the mitigation program along with other organizational/programmatic work.
- A part-time program clerk is responsible for processing applications, database management, and assigning contractors. Two contractors conduct assessments and three contractors implement mitigation treatments. Volunteers work on grant applications, outreach and processing invoices.
- Staff include one program coordinator, one program specialist and five mitigation specialists.

Our pilot program was supported part-time between October 2020 and September 2022 by FAMV's Program Coordinator, dedicating 1,200+ hours to develop, plan and coordinate implementation of the pilot EMP for six client properties. Collaborating partners, especially Methow At Home and WA DNR provided much of the additional programmatic support. FAMV's Director and Okanogan County Long Term Recovery Group provided program assistance and guidance, while the FAMV EMP Program Associate provided limited direct program support because her efforts were focused on developing and conducting the interviews, surveys, research, and analysis, and co-authoring FAMV's EMP resources. Additionally, FAMV's Director and Program Coordinator performed all tasks associated with fund-raising and grant and program administration.

Regardless of the organizational approach or staffing model that best suits an EMP, we identified specific capacity needs at the programmatic level that are necessary for running an EMP:

- program management
- partner relations
- client advocacy and case management
- workforce coordination and supervision
- public relations and outreach coordination
- grant proposal writing
- grant and financial management
- data entry, file administration and GIS mapping

We also note that, despite the seasonality of direct mitigation implementation (work parties), year-round MV EMP leadership, staff and external support structures (see below) are essential because the programmatic work spans the full calendar year (see section **14. Program Management**).

Our experience led us to recognize the value of assembling a steering committee with representatives from organizations and agencies that are collaborating closely with us on equitable mitigation efforts and/or deeply involved in other aspects of community support, whether in wildfire recovery or community service. Additionally, we sought guidance from individuals who had already received or provided assistance through the EMP to help us further refine our procedures and policies to better serve EMP clients. Ongoing input and active leadership and participation from all of these sources will ensure that the EMP is best able to serve its targeted clients and meet the needs of its partners.

Finally, we believe the following 'external' functional support structures to be necessary or helpful to supplement the skills and capacities of EMP leadership and staff:

- a client selection committee (either separate from or including members of the above leadership structure, and possibly including former EMP clients and key partners who collaborate in the client outreach and onboarding process)
- student interns and independent project volunteers
- ideally, a coalition of collaborating partners and/or local fire adapted communities

Ultimately, the EMP leadership structure will depend upon the objectives and the type of organization managing the EMP. Because the EMP needs to be grounded in community, we believe the leadership structure should include both a program director and an advisory committee, steering committee or board of directors that includes EMP partners and community stakeholders.

We found that FAMV's fluctuating staff of one to three people were sufficient for running the pilot EMP (six client households); however, this staffing level is inadequate for further developing and managing an MV EMP going forward. Before any work can begin to envision and bring to life a full EMP for this area, we need to dig deeply into organizational development and strategic planning.

Recommended Actions

Determine the broad organizational structure that will house the EMP. If an already existing organization involved with wildfire prevention, mitigation, response or recovery plans to start an EMP, the existing staff, committees or boards may be able to assume EMP roles and functions. As the EMP is developed and grows, the organization can add more staff, student interns, committees, boards and collaborating partners as needed. If a group of local partners decide they would like to form a new organization or coalition to run an EMP, ideally, they would hire a program coordinator and initially, at least, provide additional staff, especially a client advocate, and resources to run all aspects of the EMP.

Develop an organizational plan that identifies, among many other things, leadership and staff roles, responsibilities, hours of work and compensation.

Find ways to involve

- close collaborators (in an advisory capacity, beyond their direct collaborative program role),
- other organizations involved in community support,
- individuals who have received or provided EMP services,
- student interns, and
- additional partners that can help implement programming (e.g., a client selection committee).

14. Program Management

FAMV's pilot EMP conducted three full cycles with mitigation work implemented in April-May 2021, November 2021 and May-early August 2022. Despite assisting only six client households, the pilot program was data heavy. At every stage of the program cycle, starting with client recruitment and selection to treatment plan development, crew assignment and implementation, we acquired and managed hundreds of essential details about clients, their properties and treatment needs, and workforce partners' skills and availability. We recognized that successful management of an EMP depends upon structured timing and orchestration of multiple intricate and often interdependent steps and tasks to meet both internal and external deadlines and expectations, as well as the necessary milestones to keep the entire program workflow progressing within the allotted timeframes. A full scale EMP needs a system capable of managing both the program's broad objectives and components, and what seems to be the most niggling of details. FAMV's EMP found the following to be essential:

- a timeline for the entire EMP program cycle that
    - provides a big-picture view of the EMP components' procedural steps, and
    - identifies how the multiple program tasks interrelated
- systems for data intake, tracking, analysis and management

To establish a timeline, we recognized that seasonal and environmental conditions beyond our control determined when mitigation implementation would take place (see section **9. Treatment Planning**). Typically, the combination of weather, fuels, ground, and fire risk conditions in the MV are appropriate for mitigation implementation during two approximate calendar periods: April through July (but see below) and October through November. The environmental conditions and the duration of these two seasonal mitigation windows differ markedly. During the spring window, the post-winter low temperatures and moist conditions trend toward hot daytime temperatures and low relative humidity. Burn bans and IFPLs generally mark the end of this mitigation window. However, despite the fact that July and early August fall squarely in fire season when heat and dry, windy conditions prevail, treatments might be conducted by early morning work parties if limited to raking, gathering and dumping plant debris (dead vegetation, pine needles, cones and duff) and human-made fuels. The fall mitigation window comes on the heels of the super-heated and dry fire season with fall nighttime temperatures trending down and relative humidity trending upward. Snowfall and weather events are what end this mitigation period, sometimes rather abruptly. The fall mitigation window is both shorter and more likely to be impacted more frequently by external environmental conditions and workforce availability than the spring window. The realities of late spring thaw or a longer fire season may shift the mitigation schedule; neither mitigation window is completely predictable.

Once generally identified, we worked backwards from each mitigation period to identify the timeframes needed to carry out program components required for implementation, and how, in turn, their timing was interrelated. For example, workforce partners who lead skilled crew in performing technical fuels treatments needed to be fully onboarded at least five months before participating in implementation to give EMP staff the time they needed to match these partners with appropriate properties and to schedule treatments when local soil, fuel, weather conditions and IFPLs allow for successful implementation. Workforce partners who lead unskilled crew in performing nontechnical work can be onboarded with far less lead time.

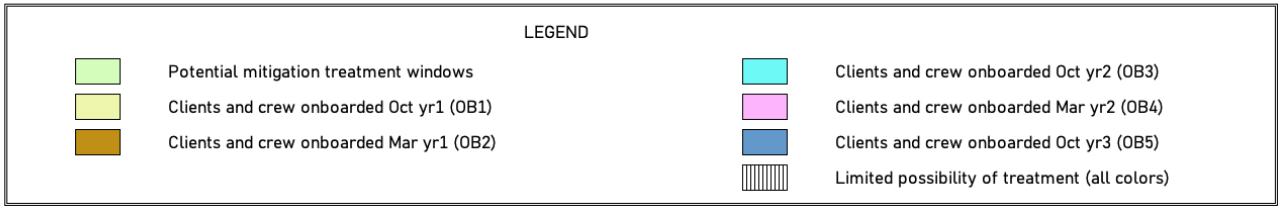
We found that an overview of the entire EMP process helps EMP staff, partners, clients, stakeholders and funders visualize the process and manage their roles, responsibilities and expectations. The EMP Program Cycle Timeline (Figure 1) graphically depicts multiple and overlapping elements of a single EMP cycle, and multiple EMP cycles that take place over a roughly two-year period.

As illustrated in Figure 1 (see "OB" labels), during any program cycle, the EMP will likely be assisting clients and utilizing workforce partners that were onboarded in that same program cycle as well as those who were onboarded in previous cycles. Each EMP will have its own specific timelines that depend on the varying circumstances of their capacity, community and fire season.

A version of Figure 1 is part of the EMP Toolkit Timeline, which also includes the research and development components of the EMP.

Figure 1. The Equitable Mitigation Program Cycle Timeline, a Gantt chart illustrating major steps of each program cycle and the overlap between consecutive cycles over a 27-month time period.

Program Components and Steps	Links	10 yr1	11 yr1	12 yr1	01 yr1	02 yr1	03 yr1	04 yr1	05 yr1	06 yr1	07 yr1	08 yr1	09 yr1	10 yr2	11 yr2	12 yr2	01 yr2	02 yr2	03 yr2	04 yr2	05 yr2	06 yr2	07 yr2	08 yr2	09 yr2	10 yr3	11 yr3	12 yr3
Client Outreach	B1.1	OC1					OB2							OB3					OB4							OB5		
Client Application	B1.2																											
Client Selection	B1.3																											
Client Onboarding - Management and Notification	B1.4																											
Client Onboard - Assessment and Meeting	B1.5																											
Client Onboarding - Prioritization	B1.6																											
Client Onboarding - Scope of Work; Treatment Menu	B1.7																											
Client Onboarding - Memo of Understanding	B1.8																											
Partner/Workforce Outreach	B2.1	OB1					OC2							OB3					OB4							OB5		
Partner/Workforce Application	B2.2																											
Partner/Workforce Selection	B2.3																											
Partner/Workforce Profile	B2.4																											
Partner/Workforce Memo of Understanding	B2.5																											
Treatment Planning (OB1)	B3.1							OB1																				
Treatment Planning (OB2)	B3.2												OB2															
Treatment Planning (OB3)	B3.3																			OB3								
Treatment Planning (OB4)	B3.4																							OB4				
Treatment Implementation (OB1)	B4.1								OB1																			
Treatment Implementation (OB2)	B4.2													OB2														
Treatment Implementation (OB3)	B4.3																				OB3							
Treatment Implementation (OB4)	B4.4																								OB4			



RECOMMENDED ACTIONS

Identify when appropriate local seasonal conditions and anticipated workforce availability align to identify the months when mitigation implementation can occur. Develop a program timeline based on the mitigation windows.

Design a relevant EMP data and information management system based on the data and metrics that are needed to inform the mitigation planning and implementation. Ideally, the system is flexible and powerful enough to allow EMP staff to track, analyze and access all details to plan and schedule the multiple and often overlapping steps within any one program cycle.

Provide timelines and other relevant EMP information to clients, partners, funders and the public. Partners collaborating with the EMP for client outreach and selection or for provision of mitigation implementation volunteers and crew need this information well in advance to plan their participation and to lock in their resources. An EMP program needs to be as predictable and consistent as possible to demonstrate to potential clients, partners and funders the EMP's sustainability and reliability.

Consider creating an annual paper and digital calendar with photos for each month that correspond with the EMP programmatic deadlines and steps that will be taking place. The calendar can display different EMP deadlines, timely tips for mitigation actions, and national, state and local wildfire awareness celebration dates.

Make use of and adapt as needed the EMP Toolkit that FAMV has developed, whether an existing organization is initiating an EMP, or a new organization must be formed.

15. Funding

Access to a consistent and reliable stream of adequate program funding is a challenge for any organization. If the organization is a small community-based entity with limited staff capacity in addition to limited access to funding, that challenge is amplified. For an EMP, these circumstances may limit the ability to

- recruit, train and retain knowledgeable and skilled professional staff,
- provide the volume and scope of property treatments necessary to achieve a landscape-scale reduction of wildfire risk to communities, and
- meet projected goals, objectives and grant deliverables.

In this section we first share some of the challenges that FAMV has experienced in accessing funding – challenges that we believe any community-based organization may experience and need to overcome in order to develop and manage a successful EMP. We then highlight two holistic models for grantmaking and support of community-based organizations that we believe are well-suited to ensure underserved and overburdened community members will have access to the resources they need to mitigate their risks to environmental and health hazards.

The Challenges

Since its formation in 2018, FAMV – like any tiny nascent entity born out of community need – has endeavored to develop staff and funding capacity, relying on the unflagging and often donated efforts of a fluctuating staff of one to three individuals. Indeed, we embody Headwaters Economics' (2022) rural capacity analysis (see *The Institutional Context*, p. 23), demonstrating severe organizational capacity limitations coupled with the highest levels of catastrophic wildlife risk.

We also faced a dilemma common to many newly forming community-based organizations. First, it is essential to (a) initiate collaborative dialogue to evaluate the needs of the community, (b) build partnerships and establish trust with community stakeholders, and (c) determine how the organization will fit into the existing programmatic landscape. Second, in a perfect world, organizational development would follow, building staff, capacity and strategic plans to effectively and efficiently implement programming. However, securing funding for these two foundational steps is challenging. Grantmakers who are willing and able to invest in innovative and necessary research and planning are rare. Grantmakers are not venture capitalists – they will invest in organizations with proven track records, and almost universally require that grant proposals include boots-on-the-ground mitigation work. Community organizations must demonstrate programmatic successes in order to be competitive applicants, but they need resources to establish partnerships and organizational capacity in order to achieve those successes.

Starting with a $250 Community Wildfire Preparedness Day grant from State Farm Insurance, FAMV has been exceedingly fortunate to have received federal, state and local grant awards and small philanthropic donations that have helped to support community outreach and education, peer networking and wildfire risk mitigation work. We are very grateful to our funders for their support of our efforts, including the development and management of our pilot EMP and the research we undertook to prepare this report and the correlative EMP Toolkit.

FAMV strives to inform its stakeholders and funders of our successes achieved with the funding we received, but there is another compelling story behind those accomplishments that rarely gets shared. For every dollar we received through grants and donations, FAMV staff spent precious and uncompensated hours on grant proposal writing, grant paperwork, requests from well-meaning agency staff for outlines of funding needs, and generally pursuing multiple potential funding options. The effort and time spent to this end overtaxed our staff and resulted in less effort and time being focused on programmatic work – our mission – or deliverables for our existing grants.

Federal grants present a particular challenge, as noted by Headwaters Economics (2022), in that grantees need extensive existing "capacity – staffing, resources and expertise – to apply for funding, fulfill onerous reporting requirements, and maintain … projects over the long term." In addition, federal awards usually require that a grantee contribute 25%-100% match of the dollar amount awarded.[10] The grantee's contribution can be

[10] For example, if a federal grantmaker awards $30,000 and requires a 100% (or one-to-one match) from the grantee, the grantee must secure another $30,000 via other nonfederal cash and/or in-kind match.

- cash match – funding from nonfederal sources such as the grantee's own general revenue, and state, local, and private grants and donations, and
- in-kind match – the monetary value derived from noncash contributions of goods, services, and personnel to support the program work (e.g., donated staff, partner, volunteer and client time and resources).

In some instances, WA DNR and other partners' generous support through in-kind match (donation of staff and crew time, equipment rentals and other resources) has helped us meet match requirements. However, to be competitive, grant applicants need to demonstrate that they have a good mix of in-kind and cash match in part to illustrate that other funders value the organization's work; in addition, cash match is a more efficient approach for meeting match requirements. Securing funding for a program becomes a complex prospect requiring writing of multiple grant proposals and/or securing numerous hours of donated time and resources from volunteers and nonfederal organizations and agencies. Meanwhile, for small organizations with limited grant proposal writing capacity, finding and securing awards that qualify as cash match is often out of reach.

Even for accessible nonfederal grants, such as those available through state agencies, award levels are not commensurate with those offered by federal sources. For FAMV, these match limitations mean that we cannot take full advantage of federal funds. We must significantly limit our proposed budgets, prioritizing short-term programmatic work and neglecting critical needs for long-term programming, organizational development, strategic planning and onboarding of additional staff. The relative timing of match-qualifying grant opportunities presents another challenge in that it hinders advanced planning – sources of cash match must be secured (or committed) before a federal grant proposal is submitted but spent concurrently alongside federal funds. Unfortunately, the realities of many state grants (e.g., administrative processes that delay awards, unexpected funding becoming available late in the agencies' fiscal year) make it difficult to proactively plan for their inclusion as match towards federal grants. Many state grants are also for six or fewer months, effectively expiring before they can be included as match in a federal award opportunity. All of these match dynamics also make it exceedingly difficult to plan ahead, given uncertainties about match-eligible funds that may or may not be secured, and the ensuing federal funds that may or may not be awarded.

Strategic planning is also compromised when funds are committed for just a few short months or on short notice. Short grant durations and unexpected awards prevent planning ahead for programs and budgets, undermining organizational and programmatic stability. In addition, unexpected grants, while always a welcome windfall, also risk destabilizing existing plans. Ideally, they can simply be applied to cover budget shortfalls for committed work; however, staff time must often be diverted to identify how to make the most of them, and to make short-term modifications to current programming. Strategic plans can fall by the wayside when trying to make use of whatever funding comes along.

The federal funding FAMV has been fortunate to receive typically has been for twelve-month periods, which provides some opportunity for planning and budgeting. However, given the long planning periods needed for the EMP (see section **14. Program Management**), even a one-year grant does not provide enough time for proactive planning and implementation. Meanwhile, the next one-year grant proposal application deadline comes all too quickly. Even

when grants have been secured, often organizations are only eligible for a limited number of renewals, meaning they must always be researching and developing new avenues of funding.

In short, there are no assurances or ways of discerning what the EMP budget will be from year to year. It is difficult to plan, develop or grow a program at the scale needed to serve our local area without the ability to create reliable budgets well in advance. For a small organization, existing staff must wear too many hats and work long, frequently uncompensated hours to ensure funding streams continue, while also working full time to plan and run programs. Our organization has faced significant burnout, which leads to even less capacity. For effective and sustainable programming and organizational health, reliable sources of multiyear funding are a necessity.

One final noteworthy challenge exists at the level of grantmaking itself. Even when funding is available for equity-focused community initiatives, those funds are not necessarily allocated to smaller, local, place-based organizations that are on the front lines of bringing equity to their community programs. This is because there are hidden barriers, even if unintentional, that in effect prohibit small grassroots organizations with limited capacity from accessing available funding. The difficulties of securing sufficient match is one example mentioned above. Additional barriers include requirements that grantees have independent nonprofit status or significant track records; grants with specific spending restrictions or that only fund a small percentage of a grantee's total budget; and grant proposal requests seeking extensive materials that require significant staff investment and skill to complete. Because smaller, place-based organizations are often positioned to most effectively deliver services to historically marginalized, underserved and overburdened populations, these barriers to accessing grants compound the inequities experienced by the very communities in need (Foundant Technologies, n.d.; NonprofitAF & RVCSeattle, 2021).

Progressive Models

Despite the funding challenges faced by small community-based organizations delivering equity-focused mitigation programming, we illustrate below the promise of two models that create a funding landscape that can empower and sustain these organizations and the populations they serve:

- an umbrella organization that provides the framework for locally-based entities to access grant funding, technical support, and assistance in developing collaborative partnerships
- grant making focused on bringing equitable outcomes to environmental risk mitigation programs and that fosters community collaboration, engagement, and leveraging of capacities

The California Fire Safe Council (2023c) is a 501(c)3 organization that serves as an overarching resource for over 100 local, independent Fire Safe Councils, as well as homeowner associations, local governments, fire departments and other entities working on wildfire prevention activities. It is an active partner that provides educational resources, assists with capacity-building and sustainability, and promotes a strong network of local, regional, state and national partnerships. Importantly, CFSC offers a "Grants Clearinghouse" program – it receives large master grants from four federal agencies and in turn selects, manages and monitors subgrants to the community wildfire preparedness groups it serves.

It also manages subgranting programs for numerous state sources of funding, and provides technical assistance to its grantees to ensure successful grant proposals and projects.

This model has resulted in a remarkable and significant amount of community and landscape resilience to fire in California. Since 2004, CFSC has awarded approximately $118 million in matching funds, resulting in over $230 million being spent on wildfire resiliency in California (CFSC, 2023d). Meanwhile, as an umbrella organization that facilitates collaboration, CFSC provides means for local organizations to leverage each other's expertise and resources, thereby increasing local organizations' capacity and efficiency. CFSC also focuses on networking and maintaining relationships at the regional, state and federal levels, enabling local councils to direct their resources toward local objectives. Finally, by offering a centralized, affiliated nonprofit with a single access point for grants from numerous federal and state agencies, combined with organizational support targeted specifically to help access those funds, CFSC's approach also reduces numerous grant-accessibility barriers for community-based entities with limited capacity.

A second promising model has evolved more recently from the growing institutional and public focus on equity, social justice and inclusivity, with an increasing emphasis on funding for programs that serve populations identified varyingly as marginalized, underserved or overburdened. These funding opportunities also often target collaborative projects that incorporate diverse partnerships.

Specific to building local capacity for equitable wildfire mitigation programming, current opportunities stem partly from two recent Presidential Executive Orders. Executive Order 13985 focuses on advancing racial equity and support for underserved communities, requiring federal agencies to assess equity in their programs and policies, and identify opportunities and strategies for increasing investments of federal resources in these communities. These strategies include funding opportunities for community-based organizations working in and with underserved communities to improve their access to benefits and services (Biden, 2023; Federal Register, 2021a). Executive Order 14008 focuses on building capacity in the federal government to combat the climate crisis through a wide variety of mechanisms. Of note for EMPs, the order prioritizes "…turning disadvantaged communities – historically marginalized and overburdened – into healthy, thriving communities, and undertaking robust actions to mitigate climate change while preparing for the impacts of climate change across rural, urban, and Tribal areas" (Federal Register, 2021b). Federal agencies are mandated to make environmental justice part of their missions, and to address environmental and climate-related impacts, and the accompanying economic challenges of those impacts, on disadvantaged communities.

Given these two Executive Orders, federal agencies are assessing their own internal processes, as well as their public programs and methods of public engagement through social and environmental justice lenses so they can (a) eliminate any systemic barriers that their programs or policies perpetuate and (b) deliver resources and benefits equitably to all. States have also responded to these federal mandates; for example, the Washington State Legislature is directing state agencies to conduct similar assessments (Equitable Community Engagement, 2022; Office of Equity, 2020). This focus on social and environmental justice is also driving agencies and organizations' planning, decision-making processes and allocation of funds to benefit underserved community members (e.g., WA DNR, 2022).

At the time of this report's publication, the US EPA provides an example outcome of these shifts that is especially relevant to EMPs. In order to demonstrate its commitment to achieving environmental justice and furthering the goals of Executive Orders 14008 and 13985, the US EPA (2023a) is soliciting proposals through its Environmental Justice Collaborative Problem-Solving (EJCPS) Cooperative Agreement Program for projects that will "significantly address environmental and/or public health issue(s) in communities disproportionately burdened by environmental harms and risks." Disadvantaged and underserved populations targeted by the funding include (but are not limited to) children, the elderly, persons with disabilities, persons who live in rural areas and persons otherwise adversely affected by persistent poverty or inequality. In addition, underserved communities include "'environmentally overburdened communities' (that is, communities adversely and disproportionately affected by environmental, climate and human health harms and risks including remote [and] rural … communities)…." – all demographics that are central to the MV EMP (see also Federal Grants, n.d.; US EPA, 2023b).

Importantly, the awards are also designed to specifically support community-based nonprofit organizations that will utilize the US EPA's Collective Problem-Solving Model by "bring[ing] together groups and resources (e.g., information, labor, money) of three or more stakeholders to solve a set of problems that any single entity cannot solve individually" (US EPA, 2019). The US EPA's EJCPS program recognizes the value and power of supporting small community-based organizations and collaborations among diverse community groups who agree to work together to achieve a common goal. This approach also helps develop community and organizational capacity and encourages partners to leverage each other's complementary resources and capabilities, all of which foster organizational sustainability. Equally critical, these grants require no grantee match or cost-share contribution and will be awarded for a three-year performance period (US EPA, 2023a), addressing many of the challenges to small community organizations discussed above.

With regard to inequities at the grantmaking level, even beyond these two progressive models, there is growing awareness of the need for grant makers to adjust their processes to address equity and inclusion, both at the level of grantees, and the communities that those grantees serve. Resources have even been developed to help funders examine their grantmaking processes and consider ways in which they can more effectively support the smaller, grassroots organizations that are often a part of and on the frontlines directly serving the communities experiencing the greatest inequities (Foundant Technologies, n.d.; NonprofitAF & RVCSeattle, 2021).

Recommended Actions

To **create a strategy for more reliable and longer-term funding**,

- look for grant opportunities with application processes that are geared toward smaller grassroot organizations with limited capacity,
- seek out state or regional organizations that serve as grant clearinghouses and grant administrators for smaller, limited-capacity local organizations,
- develop ongoing relationships with local philanthropic organizations,
- build capacity specific to proposal writing, ideally by supporting an experienced, dedicated proposal writer,

- explicitly budget program coordinator time to work with the proposal writer to accurately reflect program activities, proposed commitments, needs and budgets in proposals,
- actively engage volunteers and student interns to support the proposal writing process (e.g., background research, compilation of supporting data and documents),
- align objectives and develop long-term partnerships with other local organizations to facilitate grant proposal-writing collaborations,
- target multiyear grants to provide the organizational stability required to promote and sustain further capacity building and program planning, implementation and growth, and
- work with appropriate local, regional and state entities and agencies to promote state legislature policy decisions that support and prioritize community-based, equity-focused programs to mitigate wildfire risk.

Team Rubicon mitigation crew wraps up a productive day. Photo by M. Chiu, 2022.

FINAL CONSIDERATIONS

Through FAMV's research, we learned that organizations running EMPs often spent years developing and refining those programs. From our pilot program, we learned that so much about an EMP's development and implementation depends upon the characteristics, strengths and challenges of the local landscape and fuels, the community and the lead organization. For example, if the local community is already engaged in fire-adapted behaviors and strategies, an EMP will likely have easy and early access to resources and collaborators that will support the program.

We believe the first key to developing a place-based EMP, therefore, is to assess the strengths and challenges of the area, the community and the organizations involved. We believe the second key is to identify and foster collaboration with and support from local, regional and state partners who have access to information, technical skills and resources, and who can help shape policy and allocation of funds. Elements to consider include

- the EMP development organization's broad goals and specific EMP objectives,

- the characteristics, challenges and strengths of the landscape and fuels, the built environment, community members, and the EMP's own and prospective partner organizations' capacities,
- the objectives of EMP partners, stakeholders and likely funders,
- the availability of targeted state and federal funds to support equity and social justice in the wildfire risk mitigation arena, and
- whether the EMP development organization and partners are in a position to seek assistance from local or state policy makers.

In the first year of program implementation, we recommend that the EMP organization's governing body attempt a modest pilot EMP to identify

- how much work can be done per client,
- the nature and scope of that work and the resources required,
- what is needed to include renters (see ***What About Renters?*** text box, p. 37),
- how much planning and implementation time is needed for each aspect of the program,
- the level of staffing and resources needed to scale up the program, and
- a two- to three-year strategic plan that includes approaches to securing funding.

Throughout development and implementation, it is imperative for the EMP to connect with its community to ensure they are meeting local needs. Building a network with others in the EMP's county, state, region and beyond who are conducting similar programs is critical to

- share experiences and insights to learn from one another,
- leverage efforts to develop more awareness of the need for this type of program and the funding to support it, and
- inform and shape local, state and federal policies that support equity, inclusion and social justice in all aspects of adaptation to our changing environmental conditions that disproportionately harm populations that are economically, socially and demographically vulnerable to wildfire impacts.

As discussed in the **INTRODUCTION**, there are models for a statewide legislatively mandated commitment to developing policies to prioritize resources and allocate state funds to support the creation of defensible space and fuel reduction in areas of high socioeconomic vulnerability (see section **15. Funding**). We believe that this forward-thinking approach is critical if EMPs are to be successful in local and often rural communities.

For entities developing an EMP, we provide an example Context-Objectives Matrix (Appendix B), illustrating a snapshot of our process for assessing several of the primary elements listed above. We hope this report also proves to be a valuable resource for those engaged in the work of local equitable wildfire risk mitigation programming. And finally, we encourage EMP practitioners to make use of and adapt as needed the companion EMP Toolkit that FAMV has developed.

No single program, including an EMP, can overcome all the challenges and barriers that arise in helping historically marginalized, underserved and overburdened community members gain access to and opportunities for better outcomes to wildfire exposure. Community fire adaptation is not a static accomplishment, it is the continual ability to see what is needed to live safely and well with fire and to take the actions needed in each moment. The EMP is a

good first step in finding methods for residents experiencing vulnerability to wildfire and its impacts to mitigate risks that cause their homes and surrounding lands to ignite and spread fire. Based on our pilot program experience, we believe the EMP can demonstrate to EMP clients, their families, friends and neighbors the actions that can be taken to reduce wildfire risks, and that as a community, we all can take action to mitigate everyone's risks and to maintain the treatments performed.

Ultimately, we hope that the community's collective paradigm will shift from "What can I do on my land to protect my home?" to "What can all of us do to protect our **entire** community - our homes, our neighbors and visitors, our infrastructure and our natural environment?" Implicit in this aspirational paradigm shift is the understanding that not everyone is going to have the means or ability to protect their homes, themselves, their loved ones, their livelihood, etc., regardless of how much they understand the need to do so. The question "What can all of us do to help our **entire** community?" signifies the recognition that equity is a vital component of risk mitigation and fire adaptation. Equitable mitigation programs are particularly poised to make sure everyone can participate in and benefit from this shift, ensuring that the entire community can minimize the catastrophic and devastating impacts of wildfire in the years ahead.

How Did We Do?

In considering our place, community and capacities, we identified four long-term core objectives for our MV EMP:

- bring equity to local wildfire risk mitigation efforts to assist residents who lack means or ability to mitigate their risks
- strive for equity in the EMP workforce to support local, historically marginalized, underserved and overburdened youth to remove the barriers to skills development, career pathways, and living wages
- maximize the scope and timing of mitigation achieved to reduce wildfire risk on a meaningful and cross-boundary scale
- foster widespread ownership of and desire for community fire adaptation so all residents can live resiliently with wildfire

Our pilot EMP was extremely successful. As expected, it was implemented on a scale such that we met our long-term objectives to varying degrees – the equity-based wildfire mitigation model detailed in this report is a combination of direct successes, lessons learned and considerations gleaned from other sources. We feel that this model effectively addresses three of our four objectives.

Our pilot EMP successfully assisted residents with wildfire risk mitigation who lacked the means or ability to do so otherwise by

- identifying, selecting and building trusting relationships with those clients (often through partners),
- making the application and implementation options accessible, and minimizing barriers to participation throughout, and
- maximizing wildfire risk mitigation by balancing the circumstances of each client's property with available crews, treatments and resources.

How Did We Do? (continued)

The scope of our pilot EMP was focused on six client households, limiting our reach to maximize mitigation on a larger scale. However, our experiences yielded critical approaches for promoting success as the program is scaled up:

- prioritizing client properties that are near other EMP or non-EMP mitigation projects, or that had especially high wildfire risk
- building mutually beneficial and committed relationships with workforce partners with shared objectives, allowing us access to the breadth and depth of their technical expertise, skills, and planning and implementation resources

We fostered widespread ownership of and desire for community fire adaptation by

- empowering clients to contribute in their own ways to the mitigation process, building on relationships anchored in trust to foster deep listening, dialogue and compromise,
- establishing connections between clients and mitigation crews, and especially students on those crews, and
- engaging neighbors and other community members of all ages, offering education, new perspectives, skills for reducing fire-related risks and strategies for living well with fire.

We were unable to meet our fourth initial objective – to bring equity to the workforce so that historically marginalized, underserved and overburdened MV youth have access to skills development opportunities, career pathways and living wages. We discovered that this final objective is, in fact, beyond the direct scope of FAMV, despite it being tightly aligned with our other objectives. We are not in a position to establish and manage a local youth job corps. Fortunately, others are working diligently towards this end (see ***How can we establish an equitable youth job corps?*** text box, p. 44). We have and will continue to demonstrate our commitment to equity in the workforce by supporting the formation of a youth job corps, and encouraging a model that financially compensates participants as they develop important skills and connections. Once a framework is developed, we are committed to incorporating a youth job corps as a key partner in implementing our wildfire mitigation programming.

Both our successes and limitations in pursuing these four objectives demonstrate an important point: building equity – in wildfire resiliency, career opportunities and even community organization capacity – is best accomplished by being deeply rooted in (a) the community, its members' voices and their participation; and (b) partnerships and collaborations arising from consensus, alignment of objectives and a shared vision to increase the community's capacity to shape its members' own outcomes.

Another common fuel to be removed. Photo by A. Ludeman, 2022.

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Crew member of Washington Department of Natural Resources-supervised AmeriCorps Crew working as Washington Conservation Corps. Photo by K. Heim, 2021.

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Crew member of Washington Department of Natural Resources-supervised AmeriCorps Crew working as Washington Conservation Corps. Photo by K. Heim, 2021.

APPENDIX A: PARTNER ORGANIZATIONS

What a gift it has been to partner with a number of other local organizations whose values, goals and objectives so clearly complement and align with one another's and those of the pilot EMP. Our hope is that collaboration will play a big role in the next steps of developing an EMP locally. Developing a collective vision of our future will enable us to gain new perspectives and insights to our work. Together, we can accomplish so much more.

Appendix A highlights our partners' work and missions by including excerpts from their respective websites.

Kiwanis Club of Winthrop and Keyclub at Liberty Bell High School (winthropkiwanis.com)
Kiwanis offers programs that teach leadership skills, the importance of community and community responsibility. Winthrop Kiwanis' tagline is "Helping the kids and community of the Methow Valley."

Methow At Home (methowathome.clubexpress.com)
Methow At Home's mission is to support its members who want to age in place.

Methow At Home serves as a "virtual village", an organization of members and volunteers which provides services members want and need so that they can remain at home as long as possible, maintaining independence, and being actively engaged in local civic and cultural activities. The main goal of Methow At Home is to offer volunteer services, activities, and educational opportunities to its members. They also provide a resource of paid providers that its members can hire if the requested service is beyond the scope of a volunteer.

Methow Valley Long Term Recovery (methowready.org/about-1)
Its mission is to collaborate in ensuring that the diverse disaster recovery needs of the community are fully met while also planning efficiently for strategic investments and actions required to ensure that the Methow Valley is better prepared for future disasters.

Methow Valley School District (methow.org)
Its mission is to expect, encourage and facilitate the pursuit of excellence in their students, preparing them for a world in which life-long learning is critical to their success and happiness. Its vision for Methow Valley Schools is working in partnership with their families and community, developing curious, creative, compassionate, competent, action-oriented citizens prepared to change the world.

Okanogan Conservation District (okanogancd.org)
The conservation district is here to help residents find solutions that work best for the places they care for. Its conservation education and planning services are provided without charge to property owners and tenants within Okanogan Conservation District boundaries. It is a non-regulatory agency and working with them is completely voluntary. Additionally, the conservation district staff help prepare the community for wildfire season and help with recovery from fire impacts.

Okanogan County Fire District 6 (ocfd6.com)
Okanogan County Fire District 6 is a professional organization of volunteer and career firefighters that provides fire, rescue and emergency response services throughout the Methow Valley in Washington State. The members of OCFD6 devote hundreds of hours of their personal time to training and emergency responses. They are proud to serve the citizens and many visitors of the Valley.

Okanogan County Long Term Recovery Group, formerly known as The Carlton Complex Long Term Recovery Group (okanogancountyrecovery.com)
This organization began as the Carlton Complex Long Term Recovery Group, which was formed in response to the largest wildfire in Washington history. It was created to collaborate with and provide coordination and recovery services to those individuals, families, businesses and communities that were adversely impacted by the 2014 wildfires and resulting mudslides across Okanogan County. The Carlton Complex Long Term Recovery

Group also aimed to plan efficiently for strategic investments and actions to ensure that Okanogan County and its communities would be better prepared for future disasters.

Outward Bound (nwobs.org)
Northwest Outward Bound School's mission is to change lives through challenge and discovery. Its vision is a more just and connected society that they shape by using outdoor education to cultivate personal resilience and community engagement. They are a non-profit school, serving students locally, regionally and nationally on 5 to 50-day transformative courses focused on character education, leadership skills and service.

Team Rubicon (teamrubiconusa.org)
Team Rubicon's mission is to provide relief to those affected by disaster or crises, no matter when or where they strike. By pairing the skills and experiences of military veterans with first responders, medical professionals and technology solutions, Team Rubicon aims to provide the greatest service and impact possible. By focusing on underserved or economically-challenged communities, Team Rubicon seeks to makes the largest impact possible. Disasters represent a massive financial cost, and by providing immediate relief work, free of cost, Team Rubicon aims to help communities begin recovery sooner.

University of Washington Program on the Environment, Capstone Program
(envstudies.uw.edu/capstone-experience/)
Students majoring in Environmental Studies gain valuable professional experience and explore potential career paths through a 3-quarter Capstone course series that includes a quarter-long internship, study abroad experience or research project with a faculty member. Students produce a written deliverable and tie this professional and hands-on component with their academic study. The Capstone is usually centered around an internship with a community site partner.

Washington Department of Natural Resources (dnr.wa.gov)
Its mission is to manage, sustain and protect the health and productivity of Washington's lands and waters to meet the needs of present and future generations. WA DNR also protects forestlands and communities against wildfire using wildland firefighting crews and aviation resources, collaborative forest health efforts and community preparedness assistance.

Western Washington University Sustainability Pathways (sustain.wwu.edu/pathways)
Aligned with Western Washington University's strategic goals around supporting student success with state-wide impact, this program builds inclusive access to WWU programs and degree paths for people living in the rural mountain towns of the Methow and Okanogan Valleys. Their approach is place-based, community-engaged, and a practice of reciprocity between student learning and helping advance sustainability initiatives with organizational partners in the community. They facilitate a supportive cohort learning environment and their organizational partners provide mentorship and professional skill building opportunities for youth interested in entering sustainability fields related to public health, social justice, economic vitality and ecological quality.

Mitigation crew of Western Washington University Sustainability Pathways students and teachers with Fire Adapted Methow Valley program coordinator K. Heim. Photo by A. Ludeman, 2022.

APPENDIX B: CONTEXT-OBJECTIVES MATRIX

EQUITABLE MITIGATION PROGRAM DEVELOPMENT

CONTEXT-OBJECTIVES MATRIX

NOTE: This matrix is for illustrative purposes only – to demonstrate process, not content. The process was grounded in research, conversations with numerous relevant sources and creative brainstorming. It is a messy product of a messy, but extremely invaluable, exercise. Please see FAMV's ***Developing an Equitable Wildfire Risk Mitigation Program*** *report for more details on this matrix.*

Fire Adapted Methow Valley's pilot project, research and literature review taught us that to further develop an equitable mitigation program (EMP) for a specific area, the program's framework must be based upon the unique characteristics of that area and the community living there. Our very first step was to gain a clear understanding of the characteristics, culture, values, needs, strengths and challenges presented by our Methow Valley (MV) landscape and community, and our own organization – our context. We then identified the primary objectives that we felt our local EMP should prioritize. Finally, we assessed the intersections between our various contextual elements and those objectives – noting barriers, opportunities, desired outcomes, conflicting features, questions and other factors that arise at those intersections. These reflections helped inform and shape our path forward in providing equitable wildfire mitigation resources to our entire community. Details of that path forward – our findings and recommendations for program scope and structure – are detailed in our **Developing an Equitable Wildfire Risk Mitigation Program** report.

OUR SITUATION		**Objective 1: Equity in Reduction of Wildfire Risk**	**Objective 2: Equity in EMP Workforce**	**Objective 3: Mitigation on Appropriate Scale and Timeframe**	**Objective 4: Fostering Community Fire Adaptation Engagement**
*** Place** *** Community** *** EMP Organization**		All *residents* are able to complete mitigation work regardless of their means.	All community members are able to participate in EMP skill-building, career development, and meaningful volunteer/ education experiences.	Given the MV's high wildfire risk, perform as many EMP treatments as possible and as quickly and efficiently as possible.	Provide meaningful, active community EMP engagement to develop understanding of wildlife risks and how to reduce them.
PLACE: Dry eastside of Cascade Mountains. Rural, rugged, remote.		Homes are near or intermixed with wildland areas. Fires in public	MV ecosystem needs a skilled local workforce to help restore forests	Given high wildfire risk and limited periods when mitigation can be	Treatments and clients must reflect the diversity of places and

OUR SITUATION		Objective 1: Equity in Reduction of Wildfire Risk	Objective 2: Equity in EMP Workforce	Objective 3: Mitigation on Appropriate Scale and Timeframe	Objective 4: Fostering Community Fire Adaptation Engagement
Challenges: • Residential land = less than 10%, agricultural and forested/shrub steppe public lands = greater than 90% • FAMV's EMP service area covers over 300 square miles of mixed ecosystems • High wildfire risk in the entire landscape and built areas • Some built areas with difficult or single ingress/egress; steep slopes with heavy fuel loads; prevailing winds aligned with values at risk; far from fire station or water source; close to potential ignition sources • Seasonal conditions limit when mitigation can happen • Many areas are suitable for landscape scale mitigation work across public and private lands to achieve better wildfire outcomes.		wildlands threaten built areas and vice versa. Underserved residents live both in towns and in remote and difficult to access watersheds. Specific needs and vulnerabilities relate to location. Specific landscape-scale treatment benefits also relate to location. Can these factors be prioritized?	and other landscapes to ensure resilience to wildfire AND to all climate-related stressors – drought, insects, disease, wind-events. MV built areas need skilled workforce to harden them to wildfire risks and to protect people and infrastructure. How can we help create/foster career paths for local youth?	accomplished, EMP treatments would be most effective if they contribute to landscape scale reduction of fire spread and intensity, meaning they are tied in with other treatments on public and private land or with natural fuel breaks.	client circumstances within the MV so there are tangible successes that resonate with all residents.
COMMUNITY VALUES/CHARACTERISTICS: MV culture reflects significantly diverse and sometimes conflicting economies, values and lifestyles. Economies traditionally based on logging, mining, farming, and ranching are now increasingly based on tourism, second-home		Eligible clients may be difficult to find or engage. Need ways to enable clients to contribute to EMP work vs feeling they're just receiving a handout. In the last couple of years, the MV has experienced a significant rise in the cost of	We can develop a much-needed local workforce through equity-based programs – youth job corps, internships – to provide MV's disadvantaged youth opportunities to perform meaningful work and obtain skills (this reflects the value of	By developing a local workforce with local knowledge and skills, we increase the likelihood of successful larger-scale mitigation treatments (EMP and otherwise) in are more efficient manner.	Participation in both volunteer and job corps mitigation work parties spans generations and skill sets; youth and seniors work side-by-side to share wisdom, skills, and strategies relating to living with fire in the MV. Outcomes:

OUR SITUATION		Objective 1: Equity in Reduction of Wildfire Risk	Objective 2: Equity in EMP Workforce	Objective 3: Mitigation on Appropriate Scale and Timeframe	Objective 4: Fostering Community Fire Adaptation Engagement
ownership, and retirement migration. Value systems based on getting things done yourself or with family/community; pride in troubleshooting/problem solving; government hands-off how they deal with issues impacting where they live and lifestyle. In contrast to high amenity migrants paying others to get things done and/or have the means to tap into existing government programs to get things done.		living and housing due to a number of factors including a sharp influx of home-buyers able to pay top dollar, supply chain issues, and inflation. What was considered a moderate household income a few years ago is no longer a sustainable living wage. Also, residents who must drive long distances for work must cope with significantly higher costs of gas. Our community includes approx. 50% residents who are 2nd homeowners who aren't eligible for the EMP but might see value in volunteering to help others.	getting things done with neighbors, friends, family) EMP can help foster a neighbor-helping-neighbor approach.		* new career ideas and pathways for youth. *a sense of purpose and meaning for elders. *Spreads awareness, understanding, and builds community.
COMMUNITY STRENGTHS: A high number of non-profits serve MV needs – social, spiritual, mental and physical well-being, neighbors helping neighbors, housing, aging in place, recycling, recreation (trails, sports. Government agencies also focus on MV's landscape restoration and wildfire risk mitigation. Community has a strong service ethic.		Some MV organizations *already perform EMP work e.g., outreach, property assessment, mitigation work. *have engaged membership or clients who would benefit from EMP or be happy to volunteer to help others.	Collaborating with partners ensures greater likelihood of identifying, recruiting, and partnering with individuals and groups of volunteers from disadvantaged populations to assist with mitigation planning and work, and will help engage youth in locally	Leveraging partners' capacity means EMP workforce is more robust and accomplishes significantly more treatments. Synergistic approach enables EMP to tap into knowledge, skills, workforce and other resources to increase its productivity.	Collaborating with partners FAMV will * expand its scope of outreach to share and demonstrate fire adapted community strategies and actions; * give multi-generational crew opportunities to learn about living with fire in the places where we live.

OUR SITUATION		Objective 1: Equity in Reduction of Wildfire Risk	Objective 2: Equity in EMP Workforce	Objective 3: Mitigation on Appropriate Scale and Timeframe	Objective 4: Fostering Community Fire Adaptation Engagement
			relevant career pathways.		
COMMUNITY CHALLENGES: Equity: Many youth and others who would bring much to this work cannot volunteer because they must work for a living in addition to going to school. Without having access to living-wage jobs, our young people cannot remain in the valley. Equity: An undetermined number of valley residents lack the means (physical/mental/financial) to reduce their wildfire risk – putting at risk lives (their lives and the lives of their neighbors and of firefighters) and property, homes, jobs, businesses, ability to remain in MV (theirs, their neighbors', MV's).		How do we find and engage valley residents? What are the best methods for outreach or engagement? What are the most equitable eligibility/selection criteria that reach the people who need help the most? How do we prove/demonstrate that funding for treatments went to clients who actually need it? Can renters be eligible?	How can we enable local youth access to career pathways with living wages so they can choose to live in the MV and work in professions that address forest health, growing wildfire risks in built and wildland areas, community engagement and policy making? By helping to develop career pathways for disadvantaged youth in our area, we also help increase the needed professional mitigation workforce.	Can treatments be customized to address the specific needs of EMP clients, and what would that do to the scale/scope of treatments? Given the lack of professional mitigation contractors in our area, how do we ensure all onboarded clients receive treatments in a timely way regardless of whether they are near other clients, other private or public land treatments, or in a high wildfire vulnerability location?	Through participation in EMP mitigation work, volunteers/volunteer groups learn mitigation strategies and perform mitigation actions. They gain new skills and awareness, and learn about wildfire in our area and the reasons behind the need for mitigation. Some will choose to seek careers in fuel management and mitigation, and by doing so will increase the community's ability to reduce the fuel loading and wildfire risk. They will help address the

OUR SITUATION		Objective 1: Equity in Reduction of Wildfire Risk	Objective 2: Equity in EMP Workforce	Objective 3: Mitigation on Appropriate Scale and Timeframe	Objective 4: Fostering Community Fire Adaptation Engagement
Awareness/Understanding/Buy-in: An undetermined number of MV residents lack awareness of wildfire behavior – how it can ignite and spread, of strategies to reduce risk, of need to take steps to mitigate. Our area lacks sufficient existing mitigation contractors in relation to the existing needs and demands, and there is no accessible mitigation workforce training.					current lack of mitigation contractor capacity. How do we help EMP clients feel comfortable sharing their stories?
FAMV'S STRENGTHS: strong working relationships with key NGOs, agencies, community members, neighborhood leaders, and two university internship programs; established track record in EMP work; ability to leverage limited capacity by collaborating with partners.		Collaborating with existing and new partners ensures greater likelihood of identifying, onboarding and treating the properties of residents eligible for the EMP work.	Collaborating with existing and new partners will connect EMP with potential volunteer groups, job corps candidates, interns and even future staff members. Many partners/potential partners serve disadvantaged populations.	Collaborating with agency partners will help ensure we tie in with other private and public areas being treated, prioritizing areas with multiple wildfire vulnerabilities. It will also offer access to skilled crew, technical assistance and support.	A collaborative approach to marketing/outreach, demonstration, and shared experience will ensure the depth and breadth of the message to include something that resonates with all participating in EMP and the community. In the collaboration process comes the opportunity for spontaneous discussion, sharing, and learning.
FAMV'S CHALLENGES: Funding and staffing capacity; responsible for multiple programs and an		With limited funding and staff capacity, all aspects of the EMP must be kept as simple and cost-effective as	We will need to rely on partner organizations in the MV who are developing sustainable	EMP partners can do assessments, but they likely can't perform all recommended	EMP work can meet all FAMV's top objectives by utilizing a multi-generational volunteer

OUR SITUATION		Objective 1: Equity in Reduction of Wildfire Risk	Objective 2: Equity in EMP Workforce	Objective 3: Mitigation on Appropriate Scale and Timeframe	Objective 4: Fostering Community Fire Adaptation Engagement
overarching objective of fostering community fire adaptation		possible: Who is eligible, treatments to be performed, types of crews utilized. For example, no crews requiring overnight accommodations and detailed planning; and we cannot currently assist renters.	career pathways for youth (e.g., Sustainability Pathway Fellows).	treatments. Build in a way we can connect clients with other resources.	and paid crew workforce model, which will certainly be more complicated and staff-intensive than using a simple paid crew/contractor model, but the funding invested goes to promoting development of a fire adapted community.
Connecting the "dots" – what does this mean for our EMP?		Ensure eligibility criteria serves the targeted groups. Work with partners to refine this.	Work with WWU sustainable pathways, MVSD and other partners to foster development of youth job corps; find ways to set up mentorship/internship positions for youth skill development as alternative school classroom credits.	Need sufficient funding to run the EMP at the scale needed.	We need a program that relies on volunteers, NGO and government partners, and contractors.