

MAY 2024

INYO COUNTY

COMMUNITY WILDFIRE PROTECTION PLAN

Working together to build
fire adapted communities,
resilient to wildfire



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We would like to formally thank the Core Team and all stakeholders, notably Inyo County Office of Emergency Services, all the Volunteer Fire Departments, CAL FIRE BDU, BLM Bishop and California Desert District, USFS, Tribal partners, LADWP, and Independence Fire Safe Council for contributing their time and expertise throughout the planning process. Your participation has contributed to creating resilient landscapes, implementing public education, reducing structural ignitability, and ensuring safe and effective wildfire response.

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For all your planning and implementation needs, please visit www.swca.com.





INYO COUNTY OFFICE OF EMERGENCY MANAGEMENT

IN COLLABORATION WITH:

LOCAL GOVERNMENT AGENCIES



FIRE PROTECTION DISTRICTS



TRIBAL NATIONS



NON-GOVERNMENTAL ORGANIZATIONS



STATE AGENCIES



FEDERAL AGENCIES

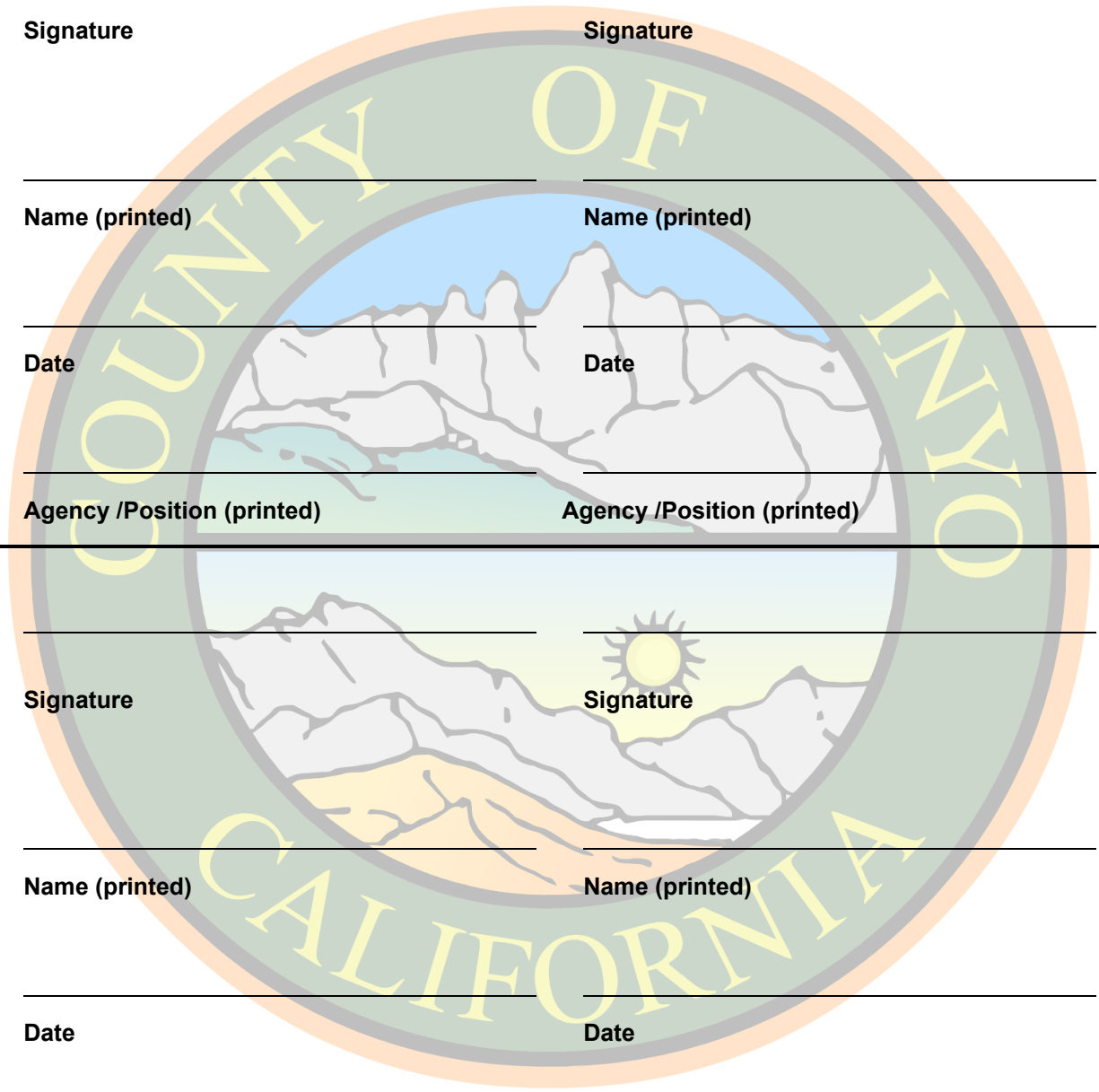


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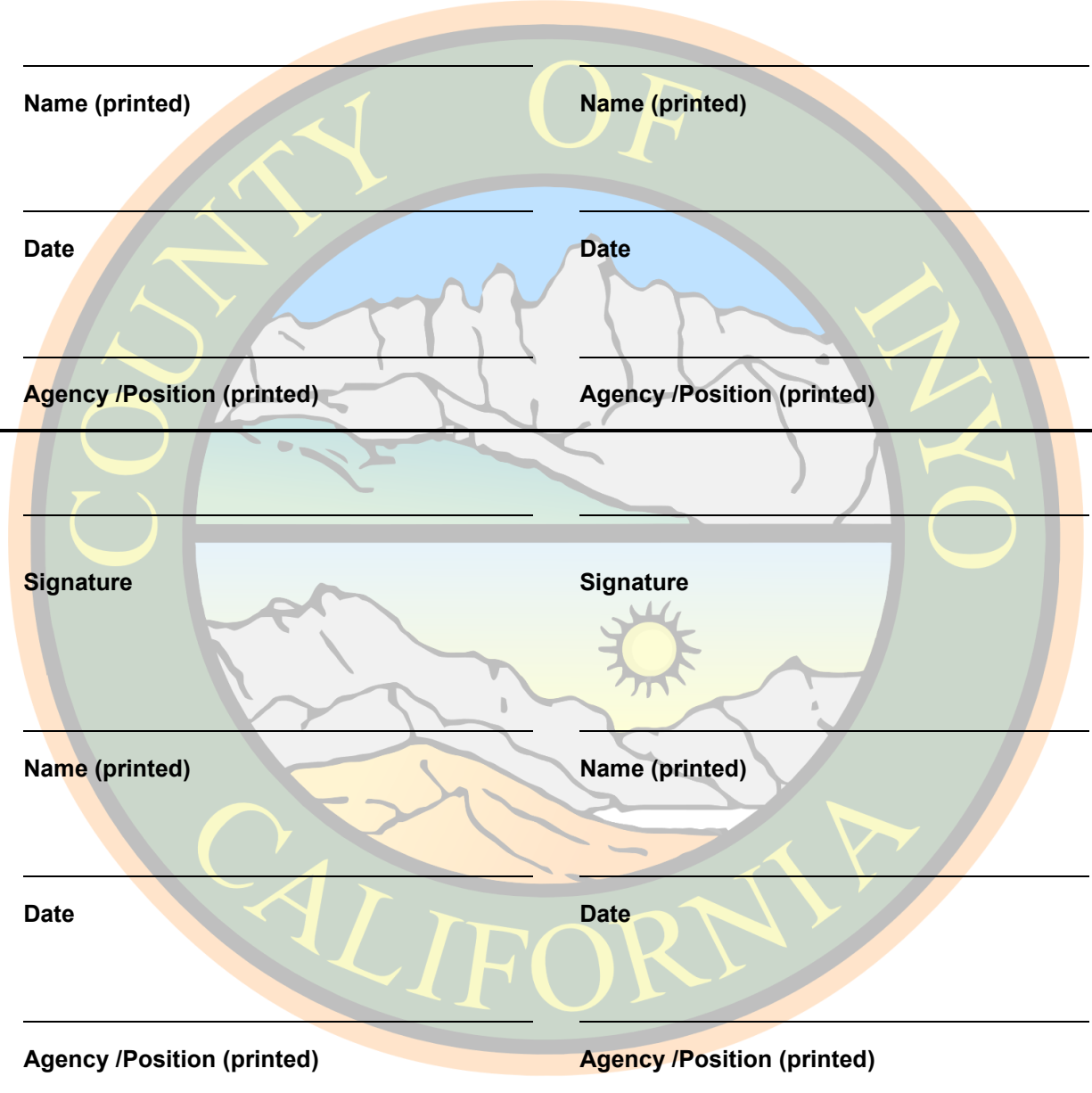
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EXECUTIVE SUMMARY

WHAT IS THE PURPOSE OF THIS COMMUNITY WILDFIRE PROTECTION PLAN?

The purpose of the 2024 Inyo County Community Wildfire Protection Plan (CWPP) update is to:

1. Provide a countywide scale of wildfire risk and protection needs.
2. Protect human life from wildfire and reduce property loss due to wildfire throughout the community.
3. Bring together all the responsible wildfire management and suppression entities in the county to address the identified needs.
4. Provide a framework for future planning and implementation of necessary mitigation measures.

This CWPP aims to assist in protecting human life and reduce property loss due to wildfire throughout the county. This 2024 plan was compiled from reports, documents, and data developed by a wide array of contributors, including input from the Core Team and the public. This CWPP has been developed in response to the federal Healthy Forests Restoration Act of 2003 (HFRA).

The CWPP meets the requirements of the HFRA by addressing the following:

1. Having been developed collaboratively by multiple agencies at the state and local levels in consultation with federal agencies and other interested parties.
2. Prioritizing and identifying fuel reduction treatments and recommending the types and methods of treatments to protect at-risk communities and pertinent infrastructure.
3. Suggesting multi-party mitigation, monitoring, and outreach.
4. Recommending measures and action items that residents and communities can take to reduce the ignitability of structures.
5. Soliciting input from the public on the draft 2024 Inyo County CWPP update.

WHERE IS THE PLANNING AREA?

The planning area includes the entirety of Inyo County as delineated by its geographic and political boundaries (refer to Figure 1.2 in Chapter 1).

WHAT ARE THE KEY ISSUES ADDRESSED?

The issues addressed in this CWPP, representing key focus areas for the county, are listed below.

- Investing and supporting fire response at all levels, including resources for local fire departments to increase capacity to serve the community.
- Developing and/or upgrading water resources for fire suppression.
- Ingress and egress issues, including evacuation routes, fire response access, and shelter-in-place locations.

- Excessive debris and rubbish on open lots and private properties.
- Home addressing, street signage, and directional signage.
- Encouraging collaboration with tribal partners to enhance wildfire readiness, preparedness, and protection in tribal areas.
- Managing fire to protect values and accomplish resource management goals, including protection and enhancement of wildlife habitat, water supply and quality, ecosystem restoration, invasive species, and forest health.
- Human ignitions, particularly dispersed camping.
- Fuel treatment recommendations for land management agencies and homeowners to mitigate hazard and risk.
- Prioritizing hazardous fuels reduction within the perimeter of the communities, along ditches and creeks, within private properties, and on Los Angeles Department of Water and Power (LADWP) land.
- Increasing community capacity and participation to accomplish community wildfire protection and prevention objectives.
- Public education and outreach to homeowners, including second-home owners and absentee homeowners, to enable individuals to reduce the risk of fire to their properties, particularly regarding defensible space implementation, structural hardening measures, and community pre-fire planning.
- Constant and consistent messaging for residents, visitors, and campers concerning wildfire risks and mitigation strategies.
- Recent climate patterns and associated changes to the wildland fire environment.
- Tree mortality and hazard trees.
- Raising awareness about the natural role that fire plays in the ecosystem and maintaining resilient landscapes.
- Increasing awareness of post-fire debris flows.

HOW IS THE PLAN ORGANIZED?

The CWPP provides a Risk-Hazard Assessment, action items, project recommendations, and background information about the community's wildland fire environment as well as land management plans and agencies. Most of the background information is housed in several appendices.

Chapter 1 provides a general overview of CWPPs, the Core Team, Inyo County, land ownership, and public involvement.

Chapter 2 presents an overview of the wildland-urban interface (WUI) and fire environment and specific information about vegetation and fire history, as well as fire management and response.

Chapter 3 describes the Risk-Hazard Assessment, results of the assessment, and community values at risk.

Chapter 4 provides mitigation strategies in accordance with the National Cohesive Wildfire Strategy as well as post-fire protocols and rehabilitation strategies.

Chapter 5 presents monitoring strategies to assist in tracking project progress and in evaluating work accomplished.

Appendix A contains background information on the planning process steps, state, municipal, and federal wildfire policy and direction, past planning efforts, and an overview of current land management strategies.

Appendix B contains background information on the community, including demographic and social information, land ownership, natural resources, climate and environmental information, and education and outreach programs.

Appendix C presents additional mapping.

Appendix D provides summary information on the Community Risk-Hazard Assessment for WUI communities.

Appendix E presents a sample form of the National Fire Protection Association (NFPA) Wildfire Fire Risk and Hazard Severity Form 1144.

Appendix F details funding opportunities.

Appendix G contains additional resources for community members, including a homeowner wildfire mitigation guide and a list of outside resources covering a variety of topics.

Appendix H presents information on public outreach and engagement with regard to this CWPP.

Appendix I houses project recommendations.

Appendix J outlines fuels treatment types and methods.

Appendix K contains information on post-fire response and recovery including response agencies, safety information, and post-fire treatment methods.

WHAT IS THE GOAL OF A CWPP?

The goal of a CWPP is to enable local communities to improve their wildfire-mitigation capacity, while working with government agencies to identify high fire risk areas and prioritize areas for mitigation, fire suppression, and emergency preparedness. Another goal of the CWPP is to enhance public awareness by helping residents better understand the natural- and human-caused risks of wildland fires that threaten lives, safety, and the local economy. The minimum requirements for a CWPP, as stated in the HFRA, are (Society of American Foresters [SAF] 2004):

- **Collaboration:** Local and state government representatives, in consultation with federal agencies or other interested groups, must collaboratively develop a CWPP.
- **Prioritized Fuel Reduction:** A CWPP must identify and prioritize areas for hazardous fuels reduction and treatments and recommend the types and methods of treatment that will protect one or more communities at risk (CARs) and their essential infrastructures.

- **Treatments of Structural Ignitability:** A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

The Core Team established the following overarching goals for the plan:

- **Collaborative Planning:** Establish a collaborative planning approach driven by a regional authority, such as a unified Inyo-Mono Fire Safe Council or similar entity, and local Fire Safe Councils that engage local governments, state and federal stakeholders, residents, and community groups.
- **Engagement:** Ensure wide visibility of the CWPP within communities throughout the county and gain local support.
- **Transparency:** Involve and engage the community and relevant stakeholders throughout all phases of project planning and implementation to ensure transparency.
- **Implementation:** Utilize the CWPP to identify specific projects and drive them toward completion.
- **Data Sharing Infrastructure:** Develop a robust and efficient data sharing infrastructure to foster seamless collaboration and information exchange among relevant stakeholders, enabling a proactive and unified approach to wildfire protection.

HOW WAS THE INYO CWPP DEVELOPED?

A Core Team, consisting of federal, state, and local agencies, organizations, tribal representatives, and residents, collaboratively developed this CWPP. Many Core Team members bring extensive experience in local fire management, contributing their expertise to this document. The Core Team list can be found at the end of this section (Executive Summary).

The CWPP planning process served multiple key purposes. It involved modeling and mapping wildfire risk and identifying physical hazards within the county that could exacerbate the wildfire threat to communities. This mapping process allowed the Core Team to prioritize treatments customized for the community to reduce fire risk.

The 2024 Inyo County CWPP update also prioritized public engagement. Community members actively provided input through public meetings and various online platforms, including surveys and emails. Additionally, the CWPP planning process established a Core Team, bringing together wildfire responders and land managers, fostering lasting working relationships, and encouraging collaboration.

By incorporating both public and Core Team input into the recommendations, treatments are precisely tailored for Inyo County. Overall, the Inyo County CWPP underscores the significance of collaboration among multijurisdictional agencies and the public to develop fuels mitigation treatment programs that effectively address wildfire hazards.

Information on outreach efforts is included in Appendix H, where the community outreach process is explained in detail.

In addition, several fire, land, vegetation, and emergency management planning documents were consulted during the development of this CWPP, including the 2017 Inyo County-City of Bishop Multi-Jurisdictional Hazard Mitigation Plan update, General Plan update, and the 2009 Inyo County CWPP. Consequently, the projects identified in this CWPP align with multiple relevant planning documents produced by various agencies.

WHO PARTICIPATED IN DEVELOPING THE PLAN?

The development of the Inyo County CWPP was overseen by the Inyo County Office of Emergency Services (Inyo County OES). Representatives from various government agencies, including California Department of Forestry and Fire Protection (CAL FIRE), Bureau of Land Management (BLM), U.S. Forest Service (USFS), National Park Service (NPS), California Department of Fish and Wildlife (CDFW), and LADWP, along with tribal representatives (Bishop Paiute, Big Pine Paiute, Fort Independence Paiute, Lone Pine Paiute, and Timbisha Shoshone) and other community or organization representatives such as Independence Fire Safe Council, served as the Core Team for this CWPP and drove the decision-making process. Several Core Team members have many years of experience working together in fire management for Inyo County and have contributed their expertise to this CWPP.

WHAT WAS THE PUBLIC INVOLVEMENT?

SWCA Environmental Consultants (SWCA), Inyo County OES, the Whitebark Institute, and the Core Team engaged in public outreach using community surveys, community events and visits, and information distributed through emails, press releases, and social media. The Core Team met virtually on May 18, 2023, and February 2, 2024, in person in Bishop on August 9, 2023, and hosted a public meeting at Bishop Fire Department Station #1 on August 10, 2023, and another public event in Lone Pine in March 2024. Feedback, comments, and suggestions received from community members during community events, the community survey, and CWPP review were synthesized and used to craft project recommendations for the Inyo County CWPP. Therefore, the project recommendations are specifically tailored to address the concerns and priorities of the county.

WHAT IS THE CURRENT WILDFIRE SITUATION?

Inyo County, due to its location within the Mojave Desert and Great Basin biological provinces, is not traditionally associated with frequent or large wildfires. (In the context of this CWPP, the term “wildfire” is used comprehensively to encompass both wildfires and brush fires.) However, the county faces a unique set of challenges when it comes to fire management. It experiences a high frequency of ignitions throughout the year, stemming from a variety of sources, including lightning strikes, dispersed camping, negligence, fireworks, and improper use of cooking fires, as well as accidents involving vehicles and equipment.

Compounding the fire risk are the persistent strong winds and complex topography of Inyo County. These winds blow year-round and from all cardinal directions. In particular, the eastern Sierra region channels strong downslope winds toward the communities situated in the valley, while strong north winds are also a common occurrence. These winds frequently interact with the area's intricate topographic features, redirecting and intensifying wind speed and direction.

For instance, these powerful winds can rapidly travel both upslope and downslope, presenting fire threats to communities from multiple directions. Additionally, the winds can quickly move through canyons and down riparian corridors, increasing the spread of fires. Most communities in Inyo County are nestled within complex topography and are often surrounded by dispersed camping sites, open fields with dense vegetation, and parcels with substantial yard debris, and are significantly distant from vital water resources and fire stations.

These unique challenges, including the lack of accessible water resources, remote locations, limited proximity to fire protection resources, and understaffed fire protection agencies, further exacerbate the fire risks within Inyo County, requiring a proactive and comprehensive approach to wildfire prevention and mitigation.

WHAT RECENT FIRES OCCURRED HERE?

In recent years, Inyo County has experienced several significant wildfire events. The Inyo Complex Fire of 2007, ignited by lightning strikes along the eastern escarpment of the Sierra Nevada, consumed over 35,000 acres and led to the destruction of six homes and 27 outbuildings over a 10-day period. The magnitude of the damage prompted a disaster declaration by the State of California.

Moreover, Inyo County remains susceptible to both natural and lightning-caused fires, with many going unrecorded. Recent events, such as the 2022 Airport and Fairview Fires, serve as poignant reminders of this vulnerability. The Airport Fire, which erupted in February 2022 near Bishop, consumed over 4,000 acres and prompted evacuations while posing a threat to structures. The Fairview Fire, which started in July 2022 within an unincorporated portion of Bishop, resulted in the destruction of homes and injuries, with its cause under investigation. These incidents underscore the ongoing challenges of fire management in this region.

WHAT IS THE PURPOSE OF THE RISK-HAZARD ASSESSMENT?

The purpose of the risk assessment is to evaluate and provide information about wildland fire risk in Inyo County. This Risk-Hazard Assessment encompasses two components: a GIS-based hazard model derived from fire behavior and fuels modeling technology (Composite Risk-Hazard Assessment), and an assessment generated by the Core Team that identifies on-the-ground community hazards and values at risk (VARs).

The risk assessment considers:

- Fire behavior modeling, which includes:
 - Type of fire (i.e., crown or surface)
 - Rate of spread
 - Flame length
 - Fireline intensity
- Fire history
- Exposure and susceptibility of the WUI, VARs, and critical infrastructure to wildfire based on their locations
- Fire station (response) drive times

HOW WAS THE RISK ASSESSMENT COMPLETED AND HOW DOES IT COMPARE TO CAL FIRE'S FHSZS?

SWCA's risk assessment takes into account a range of factors, including fire behavior characteristics such as flame length, rate of spread, fireline intensity, and crown fire activity. It also considers fire history, including the frequency and size of previous fires, as well as fire response times. Additionally, the assessment incorporates the WUI as a proxy for residences and population, as well as highly valued resources and assets (HVRAs).

The aforementioned fire behavior components are generated by integrating various variables, including vegetation type, density, and condition; topographical features such as aspect, slope, and elevation; and meteorological factors like wind, temperature, and humidity. These components are combined and evaluated to create a comprehensive model of wildfire risk within and around the county.

The final outcome of the risk assessment categorizes the landscape into four levels of risk: low, moderate, high, and extreme.

Similarly, CAL FIRE's fire hazard severity zones (FHSZs) are determined based on factors including vegetation, topography, and weather, providing insight into the likelihood of an area burning and potential fire behavior. CAL FIRE utilizes the most up-to-date scientific information and data to establish these zone delineations. The latest version of the FHSZs takes into account changes in land use, recent fire history, new wind data, and local climate information. The FHSZ classification spans from moderate to high to very high, and it is categorized according to the overall hazard level across the landscape (CAL FIRE 2023a).

The primary differentiator between SWCA's risk assessment and CAL FIRE's FHSZs is that the CAL FIRE FHSZs account only for hazard, while SWCA's risk assessment accounts for hazard and the likelihood of that hazard to cause damage and/or harm (i.e., risk). Hazards are recognized as physical conditions influencing fire behavior across a given landscape, while risk identifies the potential damage a fire can have under baseline conditions (CAL FIRE 2023a). Similar to CAL FIRE's determination of FHSZs, SWCA's risk assessment considers hazards such as fire history and potential fire behavior (crown fire activity, rate of spread, flame length). However, SWCA's risk assessment also considers the extent of the WUI, fire station drive times, and distribution of HVRAs. While not categorized as hazards, factors such as fire station drive times can increase susceptibility to wildfires (i.e., increase risk), whereas factors such as the WUI (a proxy for life and property) and HVRAs are features that are exposed to the previously mentioned hazards.

HOW WILL THE RISK ASSESSMENT IMPACT MY INSURANCE?

The wildfire risk assessment conducted for this CWPP is not intended for the determination of insurance premiums for homes and properties. Both states and insurance companies have clarified that wildfire risk assessments and associated maps in planning documents, such as CWPPs, do not influence insurance rates or coverage determinations. Instead, insurance companies utilize their own internal, proprietary maps and methods, which consider factors that change more frequently than state and local planning documents (U.S. Department of Agriculture [USDA] 2023a).

Additionally, a partnership between Insurance Commissioner Ricardo Lara, the California Governor's Office of Emergency Services (Cal OES), California Public Utilities Commission (CPUC), CAL FIRE, and California Governor's Office of Planning and Research has resulted in regulatory action that creates incentives for insurance companies to promote actions that enhance home and community resilience to wildfires. This new wildfire safety regulation aims to make insurance more affordable while increasing public involvement in risk mitigation and raising awareness of local hazards (California Department of Insurance [CDI] 2022a).

The wildfire risk reduction actions in this CWPP, including home hardening, defensible space creation, and community collaboration, align with the Safer from Wildfires initiative's mitigation measures. Implementing these actions may help homeowners qualify for insurance discounts. While the initiative is not fully implemented, some insurance companies already offer these discounts (for more information visit: <https://www.insurance.ca.gov/01-consumers/105-type/95-guides/03-res/Insurers-Currently-Offering-Discounts.cfm>).

See Appendices A and G for more information on the Safer from Wildfire initiative as well as additional homeowner's resources related to insurance.

HOW IS MY COMMUNITY RATED?

Community risk assessments, summarizing hazard and risk information for each WUI community within Inyo County, are provided in this plan. A team from SWCA conducted on-the-ground community risk assessment surveys throughout the county between August 6 and 13, 2023, using the National Fire Protection Association (NFPA) 1144 standard for assessing structure ignitability in the WUI. Using this standard provided a consistent process for assessing wildland fire hazards around existing structures to determine the potential for structural ignition from wildland fire ignitions.

The community assessments provide a total score of risk and hazard based on various parameters observed during the surveys, and corresponding descriptive ratings of low, moderate, high, or extreme are available in Appendix D.

WHAT ARE THE PROPOSED STRATEGIES TO ADDRESS WILDFIRE HAZARDS?

Goal 1 of the Cohesive Strategy and the Western Regional Action Plan is to **Restore and Maintain Landscapes**: Landscapes across all jurisdictions are resilient to fire and other disturbances in accordance with management objectives.

Recommendations for hazardous fuels treatments include:

- Maintain and expand fuel breaks.
- Develop agreements with LADWP to permit communities, fire safe councils, and private landowners to create and maintain fuel breaks on LADWP property.
- Execute ecosystem projects across jurisdictions, including tribal organizations, for wildfire resilience.
- Assess community interest in a prescribed burn association.
- Accelerate post-fire recovery projects.

- Launch an invasive species management program.
- Increase green waste disposal capacity.
- Survey and mitigate hazard trees in high-risk areas.

Goal 2 of the Cohesive Strategy/Western Regional Action Plan is **Fire-Adapted Communities**: Human populations and infrastructure can withstand a wildfire without loss of life and property.

Recommendations for public outreach/education and structural ignitability include:

- Assess and identify community access issues (e.g., one way in and out of the community)
- Enhance resident and visitor education regarding fire safety.
- Create a countywide defensible space ordinance and support property owners with defensible space implementation.
- Form a regional fire safe council for Inyo and Mono Counties.
- Raise awareness of the emergency notification system.
- Collaborate with neighboring counties on projects.
- Identify evacuation routes and inform residents on emergency notification.
- Align project objectives with CWPP, MJHMP, and General Plan updates.
- Support tribal communities with wildfire preparedness.

Goal 3 of the Cohesive Strategy/Western Regional Action Plan is **Wildfire Response**: All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions:

Recommendations for improving fire response capabilities include:

- Assess and enhance existing water resources for fire suppression.
- Create a unified naming and signage system for street signs and home addressing.
- Explore countywide fire department capacity building.
- Manage hazardous rubbish and debris on private property.
- Conduct fuels assessments and treatments in high-risk areas.
- Resolve communications systems issues in remote communities.
- Expand Alert California live camera coverage for wildfire alertness.
- Form a dedicated, multi-purpose fuels management crew.

WHAT DOES POST-FIRE RESPONSE AND RECOVERY INVOLVE?

There are many aspects to post-fire response recovery, including but not limited to:

- Returning home and checking for hazards.

- Coordinating and mobilizing a group of teams in the community to respond to emergencies.
- Rebuilding communities and assessing economic needs—securing the financial resources necessary for communities to rebuild homes, business, and infrastructure.
- Restoring the damaged landscape—restoration of watersheds, soil stabilization, and vegetation planting.
- Prioritizing the needs of vulnerable and disadvantaged communities during response and disaster recovery efforts.
- Evaluating and updating disaster recovery plans every 5 years to respond to changing needs and characteristics of the community.
- Coordinating with planning, housing, health, and human services, and other local, regional, or state agencies to develop contingency plans for meeting short-term, temporary housing needs of those displaced during a catastrophic wildfire event.

Additionally, post-fire recovery is a crucial step in creating resilient landscapes and preventing or attenuating cheatgrass cycles. Details regarding post-fire restoration can be found in Appendix K, which contains guidelines and information on community recovery and post-fire rehabilitation.

HOW WILL THE PLAN BE IMPLEMENTED?

The CWPP does not mandate implementation of any of the recommendations, but the message throughout this document is that the greatest fire mitigation can be achieved through the joint actions of individual homeowners, tribes, and local, state, and federal governments.

The recommendations for fuels reduction projects are general in nature; site-specific planning that addresses location, access, land ownership, topography, soils, and fuels needs to be employed upon implementation. Also, it is important to note that the recommendations are specific to WUI areas and are expected to reduce the loss of life and property.

In addition, implementation of fuels reduction projects needs to be tailored to the specific project and will be unique to the location depending on available resources and regulations. In an effort to streamline project implementation, this CWPP has identified the pertinent land management/ownership agencies associated with each recommendation. On-the-ground implementation of the recommendations identified in this CWPP will require the use of the action plan (recommendation matrices in Chapter 4) as well as an assessment strategy for completing each project.

WHO WILL LEAD THE IMPLEMENTATION OF THIS PLAN?

Implementation of most projects identified in this CWPP will require the collaboration and cooperation of multiple individuals and entities such as community residents, private organizations (such as LADWP), fire safe councils, tribal governments, and local, state, and federal agencies. However, to ensure that projects move forward, the plan will be governed by the Inyo County OES.

WHEN DOES THE CWPP NEED TO BE UPDATED?

The CWPP should be treated as a living document to be updated annually or immediately following a significant fire event. The plan should continue to be revised to reflect changes, modification, or new information. These elements are essential to the success of mitigating wildfire risk throughout the community and will be critical in maintaining the ideas and priorities of the plan and the communities in the future. Chapter 5 provides an evaluation framework that can help guide the CWPP update process.

CORE TEAM LIST

Name	Organization
Kristen Pfeiler	Inyo County OES
Mikaela Torres	Inyo County OES
Danielle Visuano	Inyo County
Denver Billing	Inyo County
Holly Alpert	Inyo County
Meaghan McCamman	Inyo County
Steve Rennie	Inyo County Code Enforcement
Jerry Oser	Inyo County Environmental Health
Melissa Best-Baker	Inyo County Health and Human Services
Carma Roper	Inyo County Public Information Officer
Cathreen Richards	Inyo County Planner
Cap Aubrey	Inyo County Public Works
Chris Cox	Inyo County Public Works
Shannon Platt	Inyo County Public Works
Tyson Sparrow	Inyo County Public Works
Tim Bachman	Inyo County Sheriff's Office
Jeff Griffiths	Inyo County Supervisor
Jenn Roeser	Inyo County Supervisor
Matt Kingsley	Inyo County Supervisor
Scott Marcellin	Inyo County Supervisor
Trina Orrill	Inyo County Supervisor
Sally Manning	Big Pine Paiute Tribe
Brian Adkins	Bishop Paiute Tribe
Kody Jaeger	Bishop Paiute Tribe
Thomas Gustie	Bishop Paiute Tribe
Christ Goodman	Fort Independence Indian Reservation
Sean Dahlberg	Fort Independence Indian Reservation
Mel Joseph	Lone Pine Paiute Shoshone Tribe

Name	Organization
Sookaaki Charley	Timbisha Shoshone Tribe
Damon Carrington	Big Pine Fire Protection District
Bret Russell	Bishop Fire Department
Pat O'neil	Bishop Fire Department
Chief Joe Capello	Independence Volunteer Fire Department
Carl Bursell	Lone Pine Fire Protection District
Chelsea Benbrook	Olancha Fire Protection District
Mike	Southern Inyo Fire Protection District
Phil Worsman	Southern Inyo Fire Protection District
Steven Hynes	CAL FIRE
Matt Edmiston	CAL FIRE
Carol Snow	CAL FIRE
David Haas	CAL FIRE
Steve Elenburg	CAL FIRE
Angel Avila	BLM - Bishop
Heather Stone	BLM - Bishop
James Gannon	BLM – California Desert District
Paul Gibbs	BLM – California Desert District
Garth Crow	BLM – California Desert District
Jennifer Martin	USFS Inyo National Forest
Bill Michael	Independence Fire Safe Council
Ron Tucker	LADWP
Elsa Jimenez	LADWP
Frosty Matheiu	LADWP
Allan Pietrasanta	Sierra Business Council
Dalton Sanders	Cal OES - Inyo
Elaine Kabala	Eastern Sierra Council of Governments
Graham Meese	CDFW
Matthew Paruolo	Southern California Edison
Mikhala Bornstein	Natural Resources Conservation Service
Spencer Solomon	Death Valley National Park
Steve Devanzo	White Mountain Research Center
Wendilyn Grasseschi	Mono County
Erin Elliott	Whitebark Institute
Heidi Porras	Whitebark Institute

Name	Organization
Rick Kattelmann	Whitebark Institute
Rich McCrea	Wildland Fire Associates
Montiel Ayala	SWCA
Lia Webb	SWCA
Vicky Amato	SWCA
Liz Hitzfelder	SWCA
Tim Clute	SWCA
Ryan Saggese	SWCA
Paris Krause	SWCA

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CHAPTER 1 – INTRODUCTION

The United States is facing urgent forest and watershed health concerns. Indeed, the number of annual wildfires throughout the United States has been slightly increasing in recent years (58,100 in 2018 and 50,000 in 2019 vs. 59,000 in 2021 and 69,000 in 2022). Similarly, the number of acres burned has been on the rise (Congressional Research Service [CRS] 2023). An average of 7 million acres is burned every year due to wildfire, more than doubling the annual average of acres burned in the 1990s (CRS 2023). Communities are seeing the most destructive wildfire seasons in history. In the last 5 years, the 2020 fire season had the most acreage impacted in a single year at 10.1 million acres, and 2017 was the second highest with 10 million acres (CRS 2023). These statistics demonstrate that wildfires are becoming larger and increasingly impactful.

California's Forests and Rangelands 2017 Assessment states that California, like other western states, faces urgent issues concerning frequent and severe pest and wildfire events that are unprecedented and threaten the sustainability of these ecosystems. These issues require reexamination of land and fire management policies and practices as human populations demand more from natural systems and climate change continues (California Department of Forestry and Fire Protection [CAL FIRE] 2018a).

As wildfire acreage burned and severity increases, communities need a plan to help prepare for, reduce the risk of, and adapt to wildland fire events. Community wildfire protection plans (CWPPs) help accomplish these goals. A CWPP provides recommendations that are intended to reduce, **but not eliminate**, the extreme severity or risk of wildland fire.

The development of the CWPP is rooted in meaningful collaboration among many stakeholders, including local, state, and federal officials. The planning process involves looking at past fires and treatment accomplishments using the knowledge and expertise of the professional fire managers who work for the various agencies and governing entities in the community. From there, the CWPP ultimately identifies the current local wildfire risks and needs that occur in the community, which is further supported with relevant science and literature from the western region of the United States.

In addition, this document, the 2024 Inyo County CWPP, reviews, verifies, and/or identifies potential priority areas where mitigation measures are needed to protect from wildfire the irreplaceable life, property, and critical infrastructure in the community. However, this CWPP does not attempt to mandate the type and priority for treatment projects that will be carried out by the land management agencies and private landowners. The responsibility for implementing wildfire mitigation treatments lies at the discretion

of the landowner; the 2024 Inyo County CWPP will only identify potential treatments and a suggested priority for these projects.

1.1 GOAL OF A COMMUNITY WILDFIRE PROTECTION PLAN

The goal of a CWPP is to enable local communities to improve their wildfire-mitigation capacity, while working with government agencies to identify high fire risk areas and prioritize areas for mitigation, fire suppression, and emergency preparedness. Another goal of the CWPP is to enhance public awareness by helping residents better understand the natural and human-caused risk of wildland fires that threaten lives, safety, and values at risk in the local economy. The minimum requirements for a CWPP, as stated in the Healthy Forests Restoration Act of 2003 (HFRA), are (Society of American Foresters [SAF] 2004):

- **Collaboration:** Local and state government representatives, in consultation with federal agencies or other interested groups, must collaboratively develop a CWPP.
- **Prioritized Fuel Reduction:** A CWPP must identify and prioritize areas for hazardous fuels reduction and treatments and recommend the types and methods of treatment that will protect one or more communities at risk (CARs) and their essential infrastructures.
- **Treatments of Structural Ignitability:** A CWPP must recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

It is the intent of this 2024 Inyo County CWPP update to provide a countywide scale of wildfire risk and protection needs, as well as bring together the responsible wildfire management and suppression entities in the area to support planning and implementation of the necessary mitigation measures. Detailed descriptions of the jurisdictions that make up Inyo County and their roles in fire management, are provided in Appendix A.

1.2 ALIGNMENT WITH THE NATIONAL COHESIVE STRATEGY

The 2024 CWPP is aligned with the Cohesive Strategy and its Phase III Western Regional Action Plan by adhering to the nationwide goal “to safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a Nation, live with wildland fire.” (Forests and Rangelands 2014:3).

The primary, national goals identified as necessary to achieving the vision are:

- **Restore and maintain landscapes:** Landscapes across all jurisdictions are resilient to fire-related disturbances in accordance with management objectives.
- **Fire-adapted communities:** Human populations and infrastructure can withstand wildfire without loss of life and property.
- **Wildfire response:** All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions.

For more information on the Cohesive Strategy, please visit:

<https://www.forestsandrangelands.gov/strategy/documents/strategy/CSPHaseIIINationalStrategyApr2014.pdf>.

Alignment with these Cohesive Strategy goals is described in more detail in Chapter 4, Mitigation Strategies.

In addition to aligning with the Cohesive Strategy, the CWPP also incorporates information on post-fire recovery, the significant hazards of a post-fire environment, and the risk that post-fire effects pose to communities (Figure 1.1).



Figure 1.1. The CWPP incorporates the three primary goals of the Cohesive Strategy and post-fire recovery and serves as a holistic plan for fire prevention and resilience.

1.3 ALIGNMENT WITH PLANS AND AGREEMENTS

This CWPP is aligned with multiple local, state, and federal plans, which are summarized in further detail within Appendix A (a number of these plans are listed below). Through various strategies, these planning

documents and agreements aim to mitigate wildfire impacts by reducing fire risk, protecting communities and natural resources, and enhancing overall fire resilience.

- Inyo County Hazard Mitigation Plan
- Inyo County General Plan
- CAL FIRE Strategic Fire Plan
- Bureau of Land Management (BLM) planning documents (e.g., Bishop Field Office Resource Management Plan)
- BLM Bishop Field Office's Fire Management Plan
- Inyo National Forest Land Management Plan
- Death Valley National Park General Plan
- Bishop Paiute Tribe Fire Management Plan
- Los Angeles Department of Water and Power's (LADWP's) Owens Valley Land Management Plan
- Independence CWPP
- 40 Acres CWPP
- 2009 Inyo County CWPP
- Mono County CWPP

1.4 CORE TEAM

The development of the 2024 Inyo County CWPP update was overseen by the Inyo County Office of Emergency Services (Inyo County OES). Representatives from various government agencies—along with members of fire departments and local communities—formed a Core Team and participated in decision-making activities that led to the development of the 2024 Inyo County CWPP update. Stakeholder involvement is critical in producing a meaningful document that includes all collaborators' diverse perspectives. The Core Team drives the planning process in its decision making, data sharing, experience, and communication with community members who are not on the Core Team. The project was kicked off on April 11, 2023; the Core Team met for the first time on May 18, 2023, and convened again on August 9, 2023, and for the final time on February 2, 2024.

The Core Team List is provided in the Executive Summary.

1.5 PLANNING AREA

The planning area includes the entirety of Inyo County as delineated by its geographic and political boundaries (refer to Figure 1.2).

Inyo County is 10,227 square miles, the second largest county in California behind San Bernardino County, and it includes the eastern Sierra Nevada. Inyo County is extremely topographically varied, boasting both the highest and lowest points of the contiguous United States in Mount Whitney and Death Valley, respectively. Extensive areas of public lands managed by the BLM, National Park Service, and the Forest Service are located within the county, including several wilderness areas and Inyo National Forest. In 2022, the population of the county was estimated at 18,718; and in 2021, the county contained 9,497 households (U.S. Census Bureau 2022).

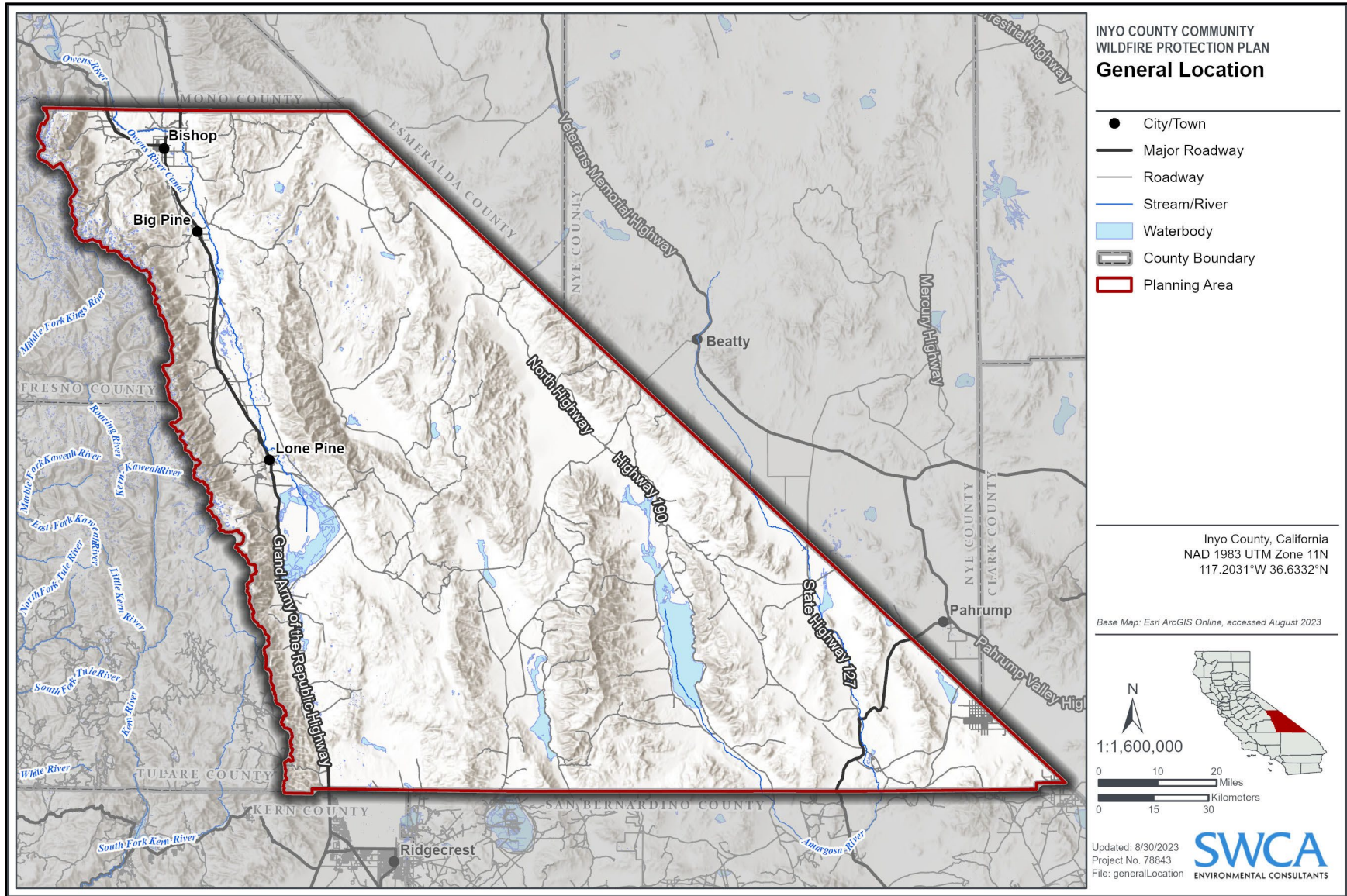


Figure 1.2. Inyo County CWPP planning area.

1.5.1 TRIBAL HISTORY AND CULTURAL PRACTICES

Inyo County is home to five tribal nations: Bishop Reservation, Big Pine Reservation, Fort Independence Reservation, Lone Pine Reservation, and Timbisha Shoshone Reservation. Historically, these tribes carried out land use activities that were shaped in large part by the presence of animals such as the bighorn sheep and pronghorn antelope. Tribal communities living in the county today experience socioeconomic benefits through the utilization of resources for producing artisan and craft materials, medicines, fuel, and traditional foods, and carrying out other activities that support heritage tourism and recreation activities. Lands and resources within the county, and notably within Inyo National Forest, allow for religious ceremonies and other activities that contribute to the preservation of tribal cultures and an increased sense of social, economic, familial, and religious well-being for tribal members taking part in the practices. Tribal communities employ programmatic management strategies in ensuring the selective use, preservation, and interpretation of their rich cultural history, in accordance with a multitude of federal laws, regulations, and policies that guide the documentation and management of these resources. Land stewardship practices among tribal peoples are upheld through the transmission of knowledge from tribal elders to the younger generation (U.S. Forest Service [USFS] 2018a). This intergenerational transfer of wisdom emphasizes the significance that land managers should acknowledge when formulating modern management strategies for present-day landscapes. The Inyo National Forest Land Management Plan recognizes the significance of traditional ecological knowledge and the importance of their values being adequately represented in the actions of land-managing bodies within the forest (USFS 2018a).

Tribal Reservations in Inyo County

Fort Independence Paiute Tribe

Fort Independence is about 2 miles northwest of Independence and is situated on mostly flat topography. The tribal lands are accessible through several roads that intersect the community, and the main thoroughfare is U.S. Route 395 (U.S. 395). Surrounding the tribal lands are BLM, LADWP, USFS, and State lands.

Tribal lands are managed by the Fort Independence Tribe of Paiute Indians, which is a sovereign nation and a federally recognized Native American tribe that is indigenous to the Inyo County region of eastern California. The tribe is an active steward of the environment, and one of their core pillars of focus is environmental restoration. The aim of this core pillar is to not only protect the environment but to help it thrive. Indeed, the tribe accomplishes this objective by developing and strengthening relationships with stakeholders and the community as well as by having environmental monitoring programs (e.g., air monitoring) (Fort Independence Tribe 2020). In addition, the tribe is in the process of developing its first Wildfire Vulnerability Assessment.

Moreover, the Fort Independence Paiute Tribe is an active member of the Eastern Sierra Wildfire Alliance (ESWA). The ESWA's mission is to "prevent catastrophic wildfires by improving ecosystem health and community resiliency through collaboration and capacity increasing programs" (ESWA 2020). Under cooperative efforts with the ESWA, the Fort Independence Paiute Tribe assists with ecosystem health management, among other tasks.

Bishop Paiute Tribe

The Bishop Paiute Tribe is a sovereign nation that is located west of the town of Bishop. The reservation encompasses 879 acres. The fire management policy of the Bishop Paiute Tribe is directed by the Bishop

Paiute Fire Management Plan (Bishop Paiute Tribe 2014). This plan details the reservation's wildfire hazards and risk. Furthermore, the plan outlines mitigation recommendations that can be implemented by the tribe to decrease their risk exposure.

Currently, the tribe is utilizing a hazardous fuel reduction program. These fuel reduction projects reduce the risk of catastrophic wildland fire in the community by creating defensible spacing around homes and tribal structures and by creating and maintaining fuel breaks. For fuel reduction projects, the tribe uses both manual (e.g., hand thinning and pulling) and mechanical (e.g., woodchippers and weed eaters) methods. The tribe also actively controls noxious and invasive weeds, which can contribute to hazardous fuel loading. Finally, the Bishop Paiute Tribe also conducts defensible space assessments where structural hazards and fuel hazards near structure and access routes are assessed (Bishop Paiute Tribe 2023).

Big Pine Paiute Tribe

The Big Pine Paiute Tribe is located within the town of Big Pine to the south of Bishop and is transected by U.S. 395. The tribe is governed by an elected five-member Tribal Council, overseeing a staff of approximately 30 employees. The tribal office staff is responsible for conducting tribal business; managing finances; providing educational tools, utilities, housing, and social services; preserving cultural heritage; and protecting ancestral lands (Big Pine Paiute Tribe 2023).

The Big Pine Paiute Tribe does not have an active wildfire management plan, but the tribe does partake in active wildfire management. Currently, the management of invasive and nonnative plants and the reduction and prevention of high-severity fires are active management guidelines the tribe utilizes as part of its non-point source management program. This program is used to protect and restore healthy watersheds on the reservation in a manner that allows the tribe to meet its tribal water quality standards (Big Pine Paiute Tribe 2023). Additionally, the Big Pine Paiute Tribe is an active member of the ESWA.

Lone Pine Paiute Tribe

Established on April 20, 1937, through a land exchange with the Department of the Interior and the City of Los Angeles, the Lone Pine Paiute-Shoshone Reservation is situated at an elevation of 3,697 feet in the southern Owens Valley. Located approximately 200 miles north of Los Angeles and 60 miles south of Bishop, the reservation spans 237.4 acres near Lone Pine, California. The tribal population on the reservation is around 350 residents (Lone Pine Paiute Shoshone Tribe 2022).

Timbisha Shoshone Tribe

The Timbisha Shoshone Tribe is headquartered in Saline Valley within the boundary of Death Valley National Park. The Timbisha Homeland Act of 2000 transferred approximately 7,500 acres of land to the Timbisha Shoshone, with the majority of the land being situated within Death Valley National Park. Current fire management by the Timbisha Shoshone is primarily a collaborative approach with the National Park Service (NPS) (2009).

The Timbisha Homeland Act of 2000 provides special use areas, including the Timbisha Shoshone Natural and Cultural Preservation Area, that help sustain the tribe's traditional cultural and religious activities (NPS 2009; Timbisha Shoshone 2023). The NPS and the Timbisha Shoshone Tribal Council co-manage lands for this purpose. As such, fire management is a collaboration between the tribe and the national park. Traditionally, the Timbisha Shoshone utilized fire to promote the growth of vegetation and to trap/capture game. Currently, the Timbisha Shoshone and Death Valley National Park collaborate on prescribed fire projects in manner that restores native plant communities and promotes the growth of

certain species that are important for the traditional cultural practices of the tribe. The Timbisha Shoshone also regularly collects fuel wood for cultural purposes at specific cultural areas. This fuel wood collection can help to reduce hazardous fuel loading (NPS 2009).

1.5.2 SOCIAL VULNERABILITY

The Federal Emergency Management Agency (FEMA) defines social vulnerability as the susceptibility of social groups to the negative impacts of natural hazards (e.g., wildfire), which include disproportionate death, injury, loss, or disruption of livelihood (FEMA 2022). A sole hazard occurrence can bring about considerably different impacts for distinct individuals, even if the magnitude of the hazard was the same for the entire community. Specific groups of individuals may be more susceptible to natural hazards because of socioeconomic status, physical state, or other factors. For instance, elderly individuals may have more difficulty in quickly evacuating during wildfire emergencies, which may make them more susceptible to entrapment. In other cases, low-income individuals may be less able to harden and improve their homes to reduce structural ignitability, indicating that they can face a higher probability of their homes being damaged or destroyed should a wildfire event occur.

According to the 2017 Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan (Inyo County and City of Bishop 2017), social vulnerability for wildfire hazards is roughly the same between residents within the high wildfire hazard zones of Inyo County. The similarity in social vulnerability between the communities located in wildfire hazard zones and all Inyo County communities is owed to the similar socioeconomic composition of the populations (Inyo County and City of Bishop 2017).

State Designation

At the state level, the California Environmental Protection Agency (CalEPA) designates disadvantaged communities with respect to environmental pollution. The designation is based on pollution burden, prior designation as a disadvantaged community, and federal land status (i.e., federally recognized tribes) (California Office of Environmental Health Hazard Assessment [OEHHA] 2023). CalEPA has designated Big Pine Reservation, Bishop Reservation, Fort Independence Reservation, Lone Pine Reservation, and Timbisha Shoshone Reservation as “disadvantaged” communities (Figure 1.3). This designation makes these communities a priority for funding through the California Climate Investments Program (CCIP), including the Wildfire Prevention Grants Program, which is a part of the CCIP and is administered by CAL FIRE (OEHHA 2023).

The CCIP recognizes that certain populations lack the capacity to invest in projects that aim to increase climate resilience. These “priority populations” include low-income communities, disadvantaged communities, and vulnerable populations disproportionately affected by climate change impacts. Many of these groups often experience high levels of pollution, limited access to clean resources, and other socioeconomic disadvantages. The CCIP aims to allocate resources and funding toward projects that directly benefit these priority populations. As of November 2022, approximately 73% of California climate investments projects had been designated to enhance the well-being and resilience of these communities, promoting equity and environmental justice across the state (State of California n.d.). Most communities within the county have been identified as “priority populations” (Figure 1.4).

For more information on state designations, please visit:

Priority populations: <https://www.caclimateinvestments.ca.gov/priority-populations>

SB 535/disadvantaged communities: <https://calepa.ca.gov/envjustice/ghginvest/>

Federal Designation

The Justice40 Initiative, signed through Executive Order 14008, aims to ensure that 40% of the benefits from specific federal investments are directed toward disadvantaged communities facing marginalization, underservice, and pollution burdens. The initiative encompasses various categories of investment, including climate change, clean energy, clean transit, affordable housing, workforce development, pollution reduction, and clean water infrastructure. Federal agencies are undergoing significant transformations to reallocate resources to these communities, addressing decades of underinvestment and environmental hazards. The White House has issued guidance to agencies on identifying covered programs, engaging in stakeholder consultation, and reporting data to fulfill the initiative's goals.

The majority of Inyo County falls under either “disadvantaged” or “partially disadvantaged,” with the higher proportion of the County designated as “disadvantaged” (Figure 1.5). The “partially disadvantaged” area has been identified as such because they are home to federally recognized tribes. The area that has been identified as “disadvantaged,” while also home to federally recognized tribes, meets the criteria based on climate change, housing, and legacy pollution.

For more information on federal designations through the Justice40 program, please visit: <https://www.esri.com/arcgis-blog/products/arcgis-living-atlas/local-government/justice40/>

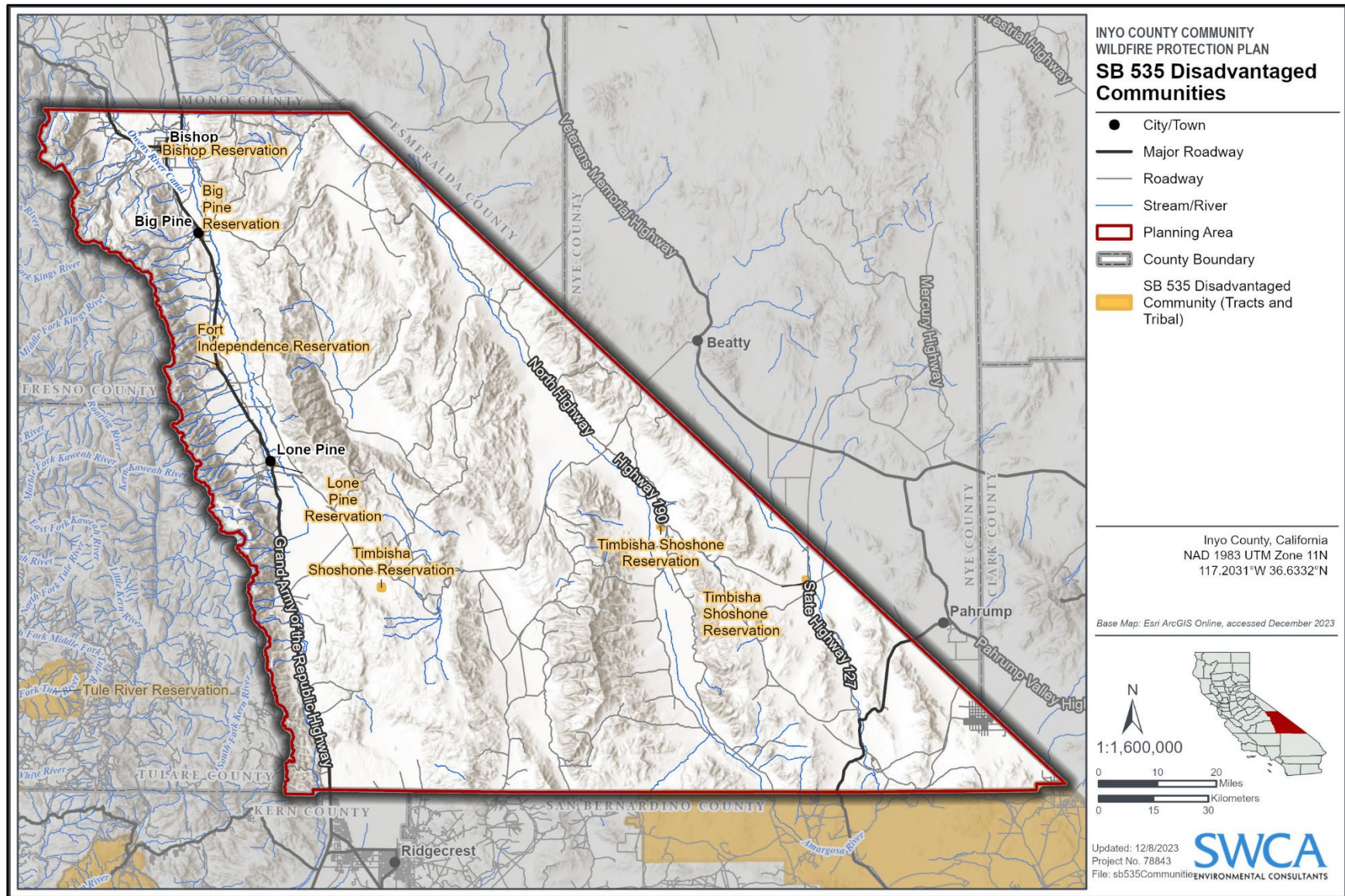


Figure 1.3. Disadvantaged communities in Inyo County as designated by CalEPA.

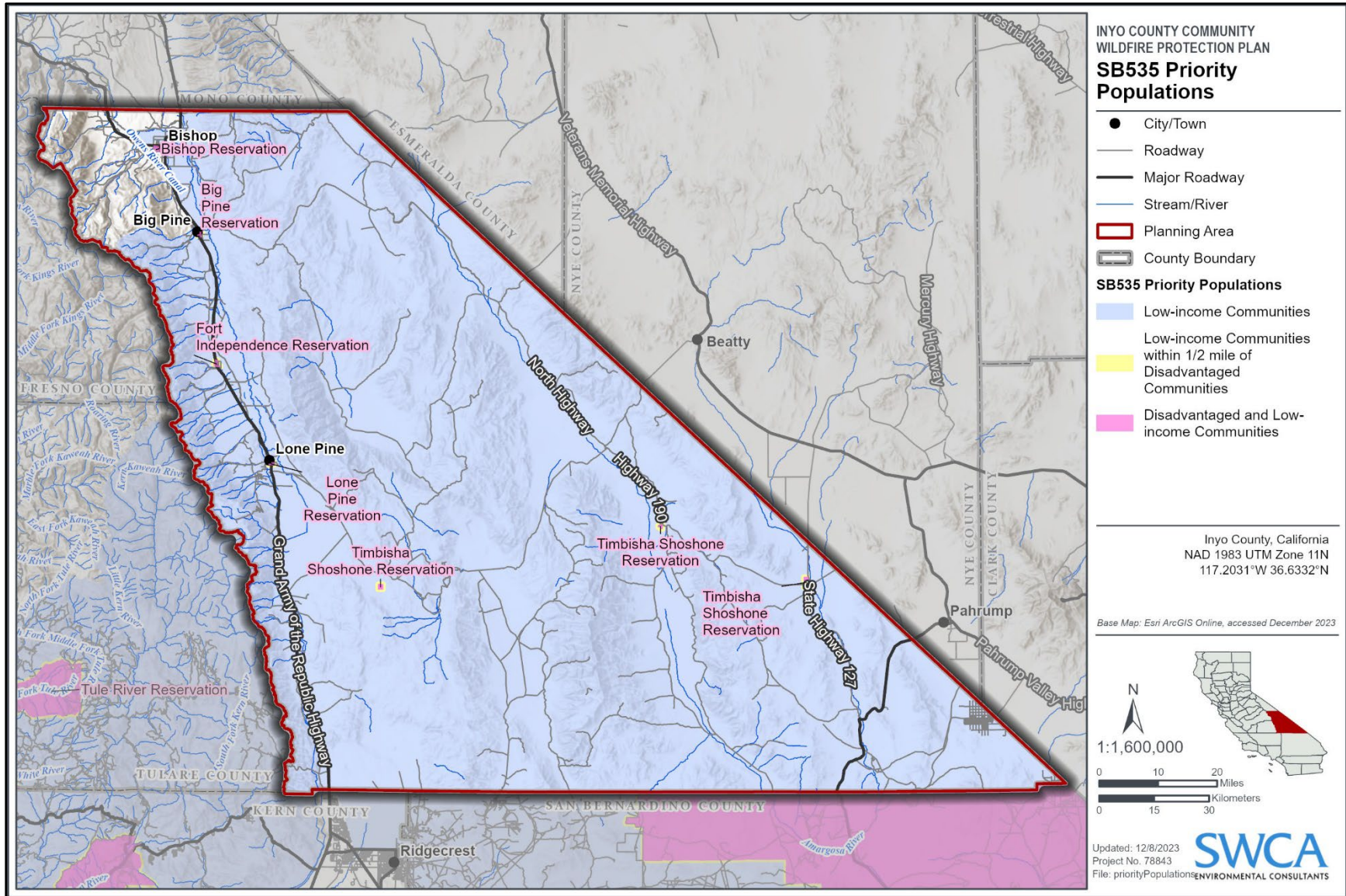


Figure 1.4. Priority populations within Inyo County as designated by the California Air Resources Board.

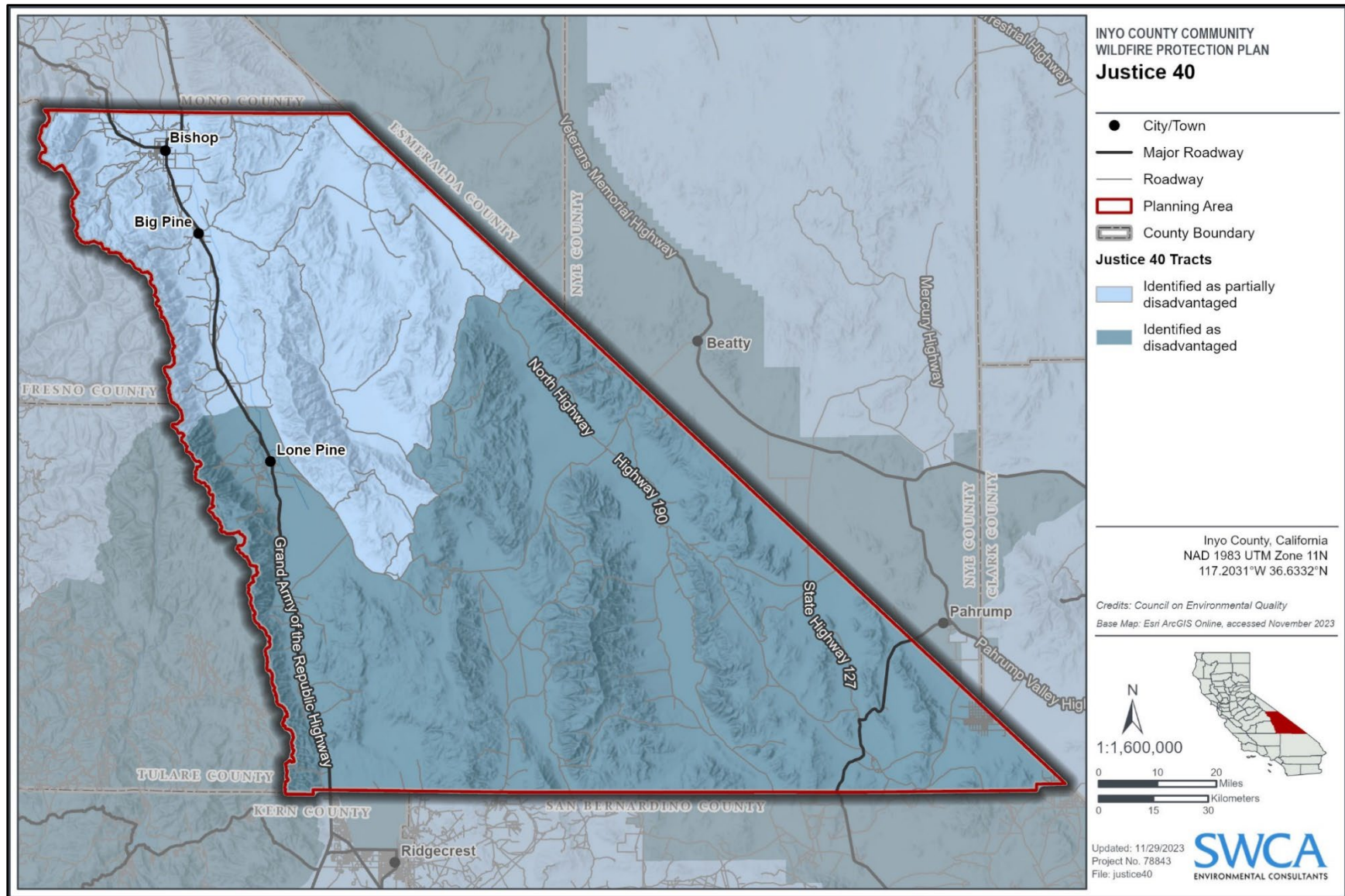


Figure 1.5. Inyo County Justice40 Initiative designations.

1.6 COMMUNITIES AT RISK DESIGNATION (FEDERAL AND STATE)

The National Fire Plan allocates funding to reduce wildfire risks to communities, with an initial list of high-risk communities within the wildland-urban interface (WUI) published in the Federal Register in 2001, designated through collaboration between states and federal agencies. This list focused on communities' neighboring federal lands and has not been updated since 2001, with states taking over the responsibility for updates. For California, the State Forester (CAL FIRE Director) manages the list, and it is important to note that California's unique WUI situation has resulted in an extension of the list beyond communities adjacent to federal lands (CAL FIRE 2023b). Table 1.1 outlines Inyo County's communities listed as high-risk in the Federal Register (2001).

In addition to the communities identified in the Federal Register, this CWPP identifies additional at-risk communities. See Chapter 3 and Appendix D for detailed findings.

Table 1.1. Communities at Risk within Inyo County

Community Name	Year
Aberdeen	2001
Aspendell	2001
Big Pine	2001
Bishop	2001
Cartago	2001
Independence	2001
Lone Pine	2001
Mustang Mesa	2001
Olancha	2001
Sabrina	2001
Starlite	2001
West Bishop	2001
Whitney Portal	2001

Source: CAL FIRE (2023b)

1.7 LAND OWNERSHIP

Before Euro-American colonization in the 1860s, the expansive lands of present-day Inyo County were the ancestral territories of the Paiute, Shoshone, Mono, and Timbisha Native American communities. While only a small remnant of the county remains under Native American control, these tribes continue to enrich the region with their cultural heritage.

- Bishop Paiute Tribe:** With over 2,000 enrolled members, the Bishop Paiute Tribe stands as the fifth-largest Native American tribe in California. Since 1912, they have maintained a federal

reservation spanning 877 acres adjacent to Bishop, with approximately 1,500 tribal members calling it home.

- Big Pine Band of Owens Valley Paiute Shoshone Indians:** A federally recognized tribe boasting more than 450 enrolled members, the Big Pine Band established their reservation in 1912, covering 279 acres adjacent to the town of Big Pine.
- Fort Independence Indian Community of Paiute Indians:** Also federally recognized, this tribe's Fort Independence Reservation, established in 1915, encompasses around 350 acres.
- Paiute-Shoshone Indians of the Lone Pine Community:** Recognized by the federal government, this tribe, boasting approximately 1,400 enrolled members, established the Lone Pine Indian Reservation in 1939 through a land exchange with the U.S. Department of the Interior and the City of Los Angeles. The reservation spans 237 acres.
- Timbisha Shoshone Tribe:** Formally recognized in 1982, the Timbisha Shoshone Tribe's Death Valley Indian Community near Furnace Creek became their reservation. Initially covering only 40 acres in 1990, the federal Timbisha Shoshone Homeland Act of 2000 restored 7,500 acres of ancestral lands to the tribe.

Present-day ownership percentages of land in Inyo County are distributed as follows: the BLM holds the largest portion, accounting for 37.9% of the land. The NPS follows closely behind, with ownership of 35.1% of the land. The USFS manages 12.1% of the land, while the Department of Defense oversees 7.0%. LADWP holds 5.0% of the land, and there is a category of 1.5% that is considered unmapped or undetermined. State lands constitute 1.3% of ownership, while Tribal Trust lands account for 0.1% (Table 1.2). The remaining land is held by various entities, such as the California Department of Fish and Wildlife (CDFW), non-profit conservancies, trusts, and the U.S. Fish and Wildlife Service (USFWS). Each of these entities has less than 0.1% ownership (Figure 1.6).

Additional detailed information on the County's geography, infrastructure, demographics, recreation, and wildlife can be found in Appendix B, Community Background and Resources.

Table 1.2. Land Ownership within Inyo County

Land Ownership	Acres	Percentage
BLM	2,480,553	37.9
NPS	2,294,726	35.1
USFS	792,307	12.1
Department of Defense	459,230	7.0
LADWP	325,460	5.0
Unmapped/Undetermined	96,938	1.5
Other State Lands	84,844	1.3
Tribal Trust Lands	3,998	0.1
CDFW	2,742	<0.1
Non-Profit Conservancies and Trusts	754	<0.1
USFWS	543	<0.1

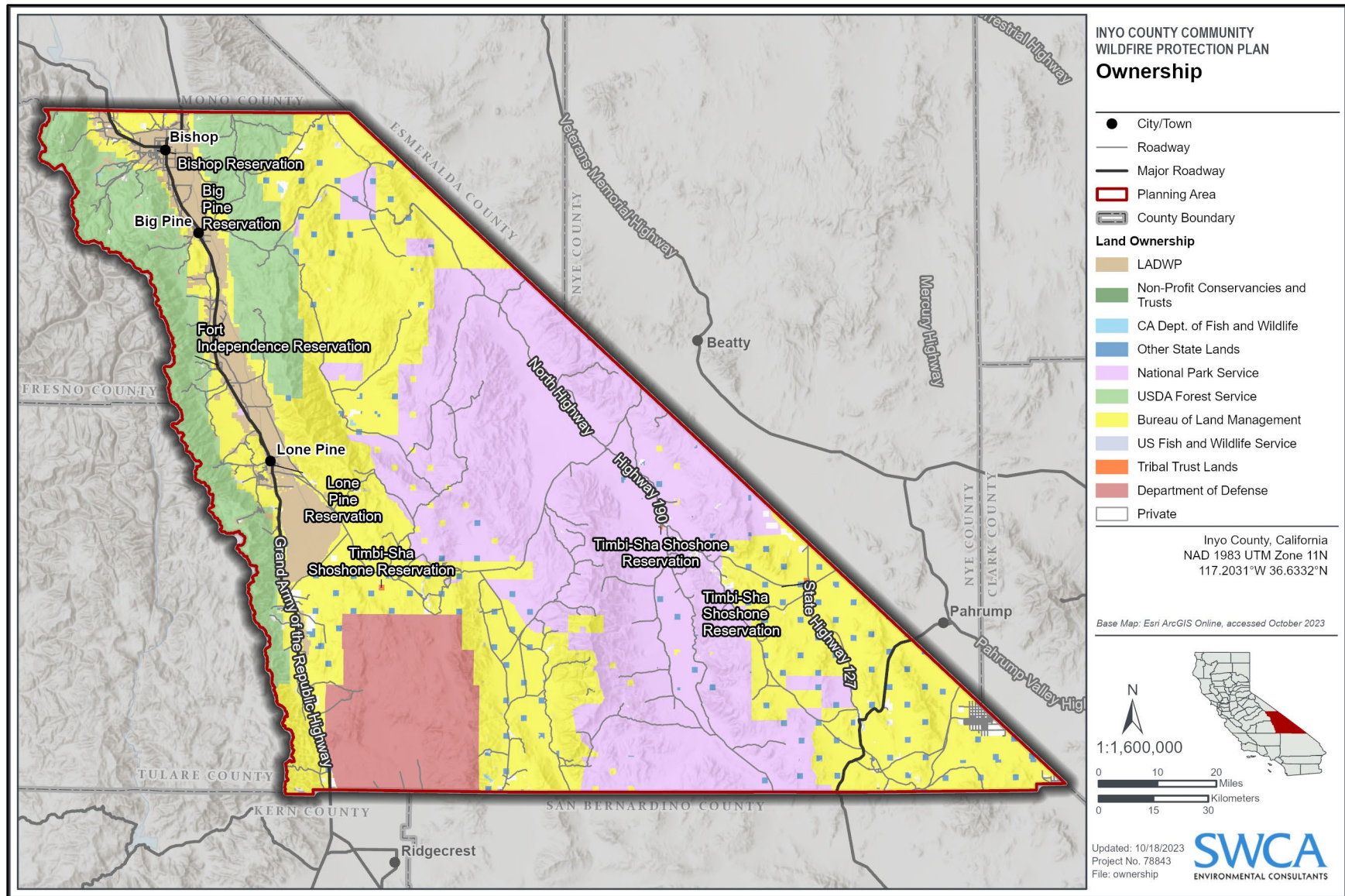


Figure 1.6. Inyo County land ownership.

*Note: Land ownership data used in this map were obtained from the California State Geoportal. Please note that this data may contain discrepancies.

1.8 PUBLIC INVOLVEMENT

A key element in the CWPP process is the meaningful discussions it generates among community members regarding their priorities for local fire protection and forest management (SAF 2004). The draft CWPP was made available for public review from March 7, 2024, through April 15, 2023. In addition to the CWPP document review, public meetings and events were held to gather community input. These efforts are described in detail in Appendix H, where a detailed description of the community outreach process and community survey results are located.

Every effort was made to include a broad cross section of the community in the outreach process, and different communication channels were used to engage as many members of the public as possible (e.g., social media postings, email distributions, and in-person activities). All community members were welcomed and encouraged to participate in in-person activities such as the community event at the Bishop Fire Station #1 and the event at the Lone Pine Tribal Wellness Center. Moreover, all community members were provided multiple opportunities to provide input, such as the community survey and CWPP document review.

Recommendations for future community engagement and outreach are provided in Chapter 4, Table 4.4.

Public education and outreach programs are a common factor in virtually every agency and organization involved with the wildfire issue. Detailed information on these programs is provided in Appendix B.



2.1 WILDLAND-URBAN INTERFACE

The WUI is composed of both interface and intermix communities and is defined as areas where human habitation and development meet or intermix with wildland fuels (U.S. Department of the Interior and U.S. Department of Agriculture [USDA] 2001:752–753). Interface areas include housing developments that meet or are in the vicinity of continuous vegetation. Intermix areas are those areas where structures are scattered throughout a wildland area where the cover of continuous vegetation and fuels is often greater than cover by human habitation.

In addition, the WUI has an area of influence, or influence zone. This area is described with respect to wildland and urban fire; it is an area with a set of conditions that facilitate the opportunity for fire to burn from wildland fuels to the home and or structure ignition zone (National Wildfire Coordinating Group [NWCG] 2021a).

A CWPP offers the opportunity for collaboration of land managers to establish a definition and a boundary for the local WUI; to better understand the unique resources, fuels, topography, and climatic and structural characteristics of the area; and to prioritize and plan fuels treatments to mitigate for fire risks. At least 50% of all funds appropriated for projects under the HFRA must be used within the WUI.

According to the HFRA, the WUI can be defined by a CWPP. Given the fuels, topography, and wind patterns in the region, the Core Team collectively determined that the WUI encompass a 5-mile buffer around the communities (Figure 2.1).

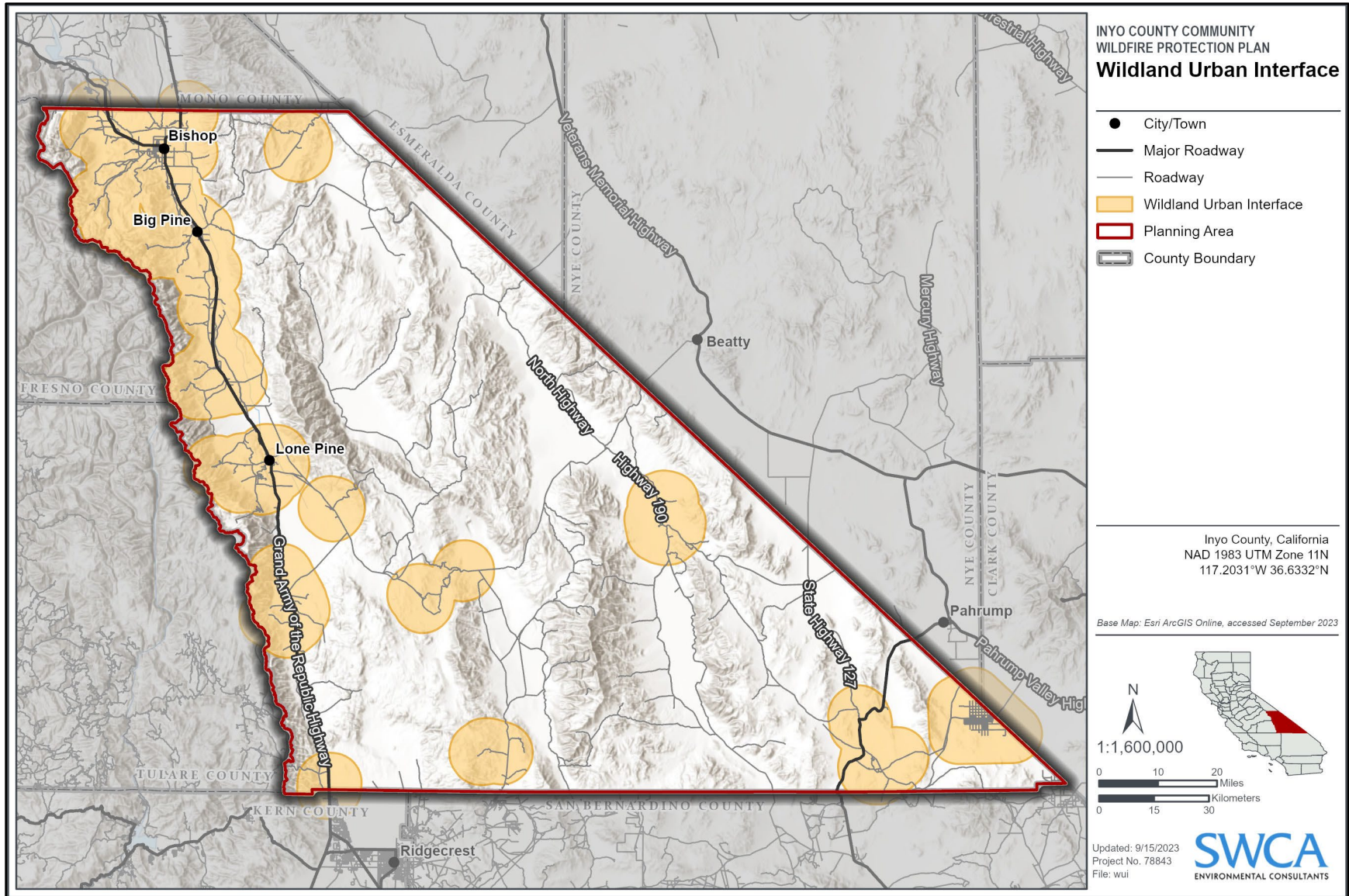


Figure 2.1. Inyo County WUI delineations.

The WUI creates an environment in which fire can move readily between structural and vegetative fuels, increasing the potential for wildland fire ignitions and the corresponding potential loss of life and property. Human encroachment upon wildland ecosystems within recent decades is increasing the extent of the WUI throughout the county (Figures 2.2–2.5), which is having a significant influence on wildland fire management practices. Combined with the collective effects of aggressive suppression policies, resource management practices, land use patterns, climate change, and insect and disease infestations, the expansion of the WUI into areas with high fire risk has created an urgent need to modify fire management practices and policies and to understand and manage fire risk effectively in the WUI (Pyne 2001; Stephens et al. 2005). Mitigation techniques for fuels and fire management can be strategically planned and implemented in WUI areas, for example, with the development of defensible space around homes and structures.



Figure 2.2. Example of the WUI in the county (Big Pine).



Figure 2.3. Example of the WUI in the county (New Wilkerson).



Figure 2.4. Example of the WUI in the county (Tecopa).



Figure 2.5. Example of the WUI in the county (Lone Pine).

2.1.1 WUI LAND USE

Cities and counties are continuously challenged to accommodate both current and future residents in need of safe and affordable housing. In California, approximately 180,000 homes need to be constructed

annually to meet demand (California Department of Housing and Community Development 2018). Over the past few decades, jurisdictions across the state have approved many new housing units. These are often placed within or near to wildland areas, creating “wildland-urban interface” (WUI) conditions. Today, more than 46 million residences in 70,000 communities are at risk for WUI fires (U.S. Fire Administration [USFA] 2021a). When it comes to wildfire, this trend is of special concern since WUI conditions are linked with an increased risk of loss of human life, property, natural resources, and economic assets. According to the 2018 Strategic Fire Plan for California, “since the turn of the century there has been a steep increase in structures lost compared to the 1990s” (CAL FIRE 2018b).

Development in high or very high fire hazard areas is required to be constructed in a way that reduces the risk from fire hazards and meets all appropriate county and state fire standards. The requirement includes the use of fire-resistant materials produced to minimize fire susceptibility within high or very high fire hazard areas according to the 2001 California Fire Code, Fire Safe Regulations, and other standards. New development schemes must contain certain fire protection plans, codes, and actions for fire engineering components for buildings and structures in very high fire hazard zones.

All of the communities within the county are designated as WUIs. Under the Inyo County Building Code, all new construction must comply with chapters of California Building Code applicable to WUI fire areas. All properties shall be maintained in accordance with defensible space requirements of the state (Inyo County Code: https://library.qcode.us/lib/inyo_county_ca/pub/county_code/item/title_14-chapter_14_08-14_08_140).

The following sections describe important wildfire attributes within and around the WUI in the county.

Additional Fire Code information, planning processes, and other legislation pertaining to wildfire is described in Appendix A.

Appendix D contains descriptions and hazard ratings accompanied by a WUI delineation map for each community evaluated within the county. The WUI maps depict the entire WUI boundary for each community. The WUI buffer is an area where fuel treatments should be prioritized in order to provide additional protection to the community from potential wildfire spread. Moreover, the maps also depict land management jurisdictions, direct protection areas, and fire protection district (FPD) jurisdictions to facilitate identification of potential collaborators and responsibility for fire protection.

2.1.2 CAL FIRE’S FIRE HAZARD SEVERITY ZONES

In accordance with Public Resources Code (PRC) 4202, CAL FIRE maintains fire hazard severity zone (FHSZ) data for the entire state. The FHSZs rely on the most advanced scientific data and are determined by considering key factors such as vegetation, topography, and weather (CAL FIRE 2023a). There are three classes of fire hazard severity ratings within FHSZs: moderate, high, and very high (California Governor’s Office of Planning and Research [CA GOPR] 2022). These zones reflect the likelihood of a fire occurring in a given area and the potential behavior of such a fire. Figure 2.6 shows the FHSZs for Inyo County based on data available at the time of plan development. The majority of the county is classified as moderate risk; however, the areas with the highest population densities (e.g., the U.S. 395 corridor and the area along the base of the eastern Sierra Nevada) are classified as high or very high.

The CAL FIRE FHSZs in State Responsibility Areas (SRAs) are under regulatory review (as of August 2023); updated layers will be posted on the CAL FIRE Office of the State Fire Marshal website: <https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildfire-preparedness/fire-hazard-severity-zones/>.

The CWPP is designed to focus on areas within the county with the highest wildfire risk; it is therefore important to note that FHSZs evaluate wildfire “hazard” and not “risk”. As defined by CAL FIRE:

“Hazard” is based on the physical conditions that create a likelihood and expected fire behavior over a 30 to 50-year period without considering mitigation measures such as home hardening, recent wildfire, or fuel reduction efforts. “Risk” is the potential damage a fire can do to the area under existing conditions, accounting for any modifications such as fuel reduction projects, defensible space, and ignition resistant building construction.
(CAL FIRE 2023a)

Thus, while FHSZs help guide the community fire planning and mitigation process by assessing hazards, this CWPP enhances the “hazard only approach” by considering the hazard and risk dynamic across the county.

Regulatory background regarding the development and updates of FHSZs are summarized in Appendix A.

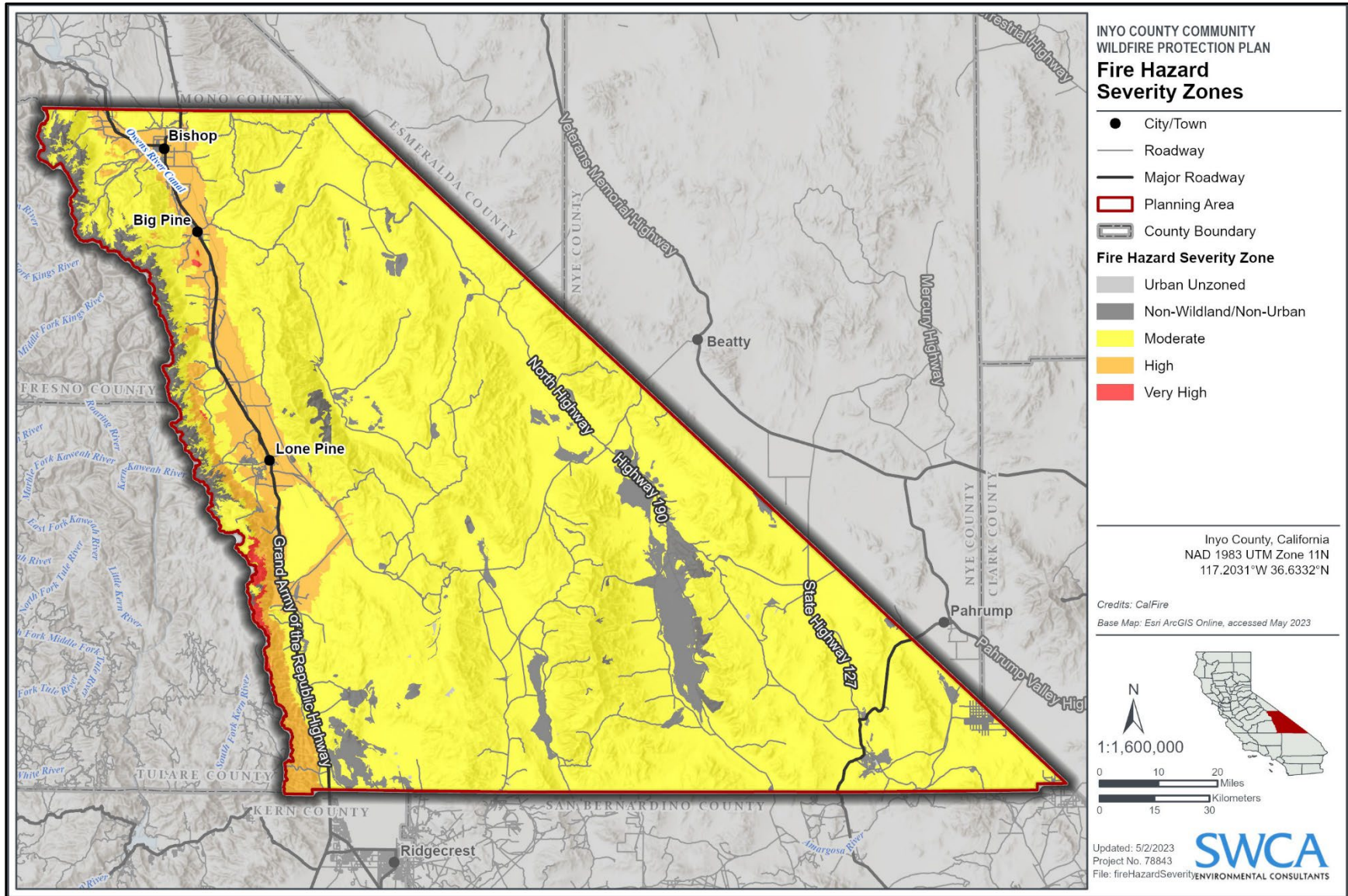


Figure 2.6. CAL FIRE’s FHSZs for Inyo County

2.1.3 FUELS AND TOPOGRAPHY WITHIN THE WILDLAND-URBAN INTERFACE

Inyo County comprises a highly contoured landscape, supporting vegetation types that occur based on variable landscape positions and topographies. Forty-six vegetation types exist within Inyo County, as mapped by the CAL FIRE's Fire and Resource Assessment Program (FRAP), along with CDFW's Vegetation Classification and Mapping Program (VegCAMP) program and with utilization of USFS Region 5 Remote Sensing Laboratory (CAL FIRE 2015). The primary vegetation types within Inyo County's WUI include desert scrub, alkali desert scrub, and sagebrush.

Additionally, communities east of the Sierra Nevada are transected by ditches and creeks that carry dense and continuous fuel beds of riparian vegetation, including trees such as Fremont cottonwood (*Populus fremontii*), black locust (*Robinia pseudoacacia*; nonnative), willow species (e.g., *Salix laevigata*, *S. lasiolepis*, *S. gooddingii*), and Siberian elm (*Ulmus pumila*). Communities in the central and eastern portions of the county are surrounded by grasses and shrubs or barren, non-burnable landscape. See the Vegetation and Land Cover section in Appendix B for additional details regarding vegetative fuel types.

Figure 2.7 below illustrates fire behavior fuel models throughout the county.

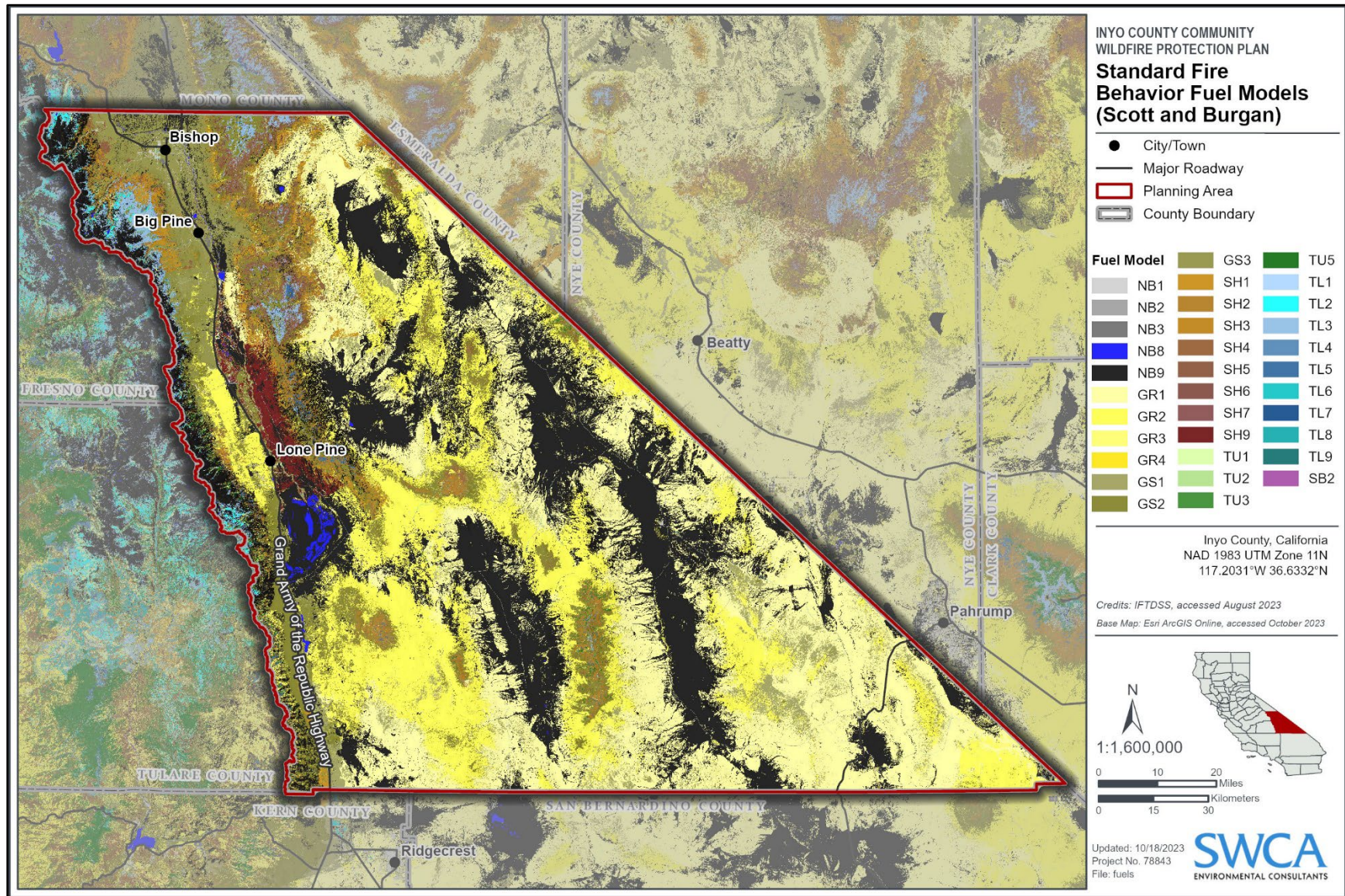


Figure 2.7. Fuels in Inyo County.

2.2 FIRE REGIMES

California’s landscapes and associated plant communities evolved with fire as a regular natural disturbance at fire return intervals (FRIs) that vary from one vegetation community to the next. Many botanical species are well adapted to survive fire and/or require fire as a trigger for seed propagation. However, when fire has not passed through a landscape for a longer period than the natural FRI for the associated vegetation type, uncharacteristic high-severity fires can occur as a result. High-severity fires can cause much more drastic environmental effects than regular, low-intensity fires.

As it relates to wildfire, vegetation and vegetative material influence fire behavior characteristics and are referred to as fuel. Fuels are generally classified by fuel type and volume and include vegetative duff and litter, twigs, branches, logs, and snags (dead-standing trees), as well as living vegetation (forbs, grasses, shrubs, and trees). Certain fuel types (e.g., annual grasses and invasives) burn and spread fire quickly across the landscape. Additionally, vegetation canopy cover can act as ladder fuels by providing continuity between understory vegetation strata and the crowns of shrubs and trees, which can increase the intensity and rate of spread of a fire as it moves through a landscape. In order to classify, prioritize, and plan for fuels treatments across a fire management region, methods have been developed to stratify the landscape based on physiographic and ecological characteristics.

The region contains three major biological provinces: the Great Basin, the Mojave Desert, and the Eastern Sierra Nevada. The convergence of these biological provinces creates an environment conducive to a wide variety of vegetation communities, including desert scrub, alkali desert scrub, sagebrush, desert wash, pinyon-juniper, and Joshua tree woodlands (Table 2.1). The fire regimes of the dominant vegetative communities within the WUI with historic wildfire occurrences are summarized below. Fire regimes for desert washes, pinyon-juniper, and Joshua tree woodlands are not described due to their limited habitat extent and/or overlap with historic wildfires within the WUI. Riparian areas are also addressed due to the heightened risk for wildfire associated with this vegetation type within the WUI.

Table 2.1. Major Vegetation Types in Inyo County’s WUI

Vegetation Type	Total Inyo County WUI (acres)	Percentage of Inyo County WUI Cover
Desert scrub	750,298	63
Alkali desert scrub	199,845	17
Sagebrush	145,776	12
Desert wash	41,774	4
Pinyon-juniper	41,080	3
Joshua tree	15,039	1

2.2.1 DESERT SCRUB

The mean FRI within desert scrub communities ranges from between 329 to 815 years. Creosote bush (*Larrea tridentata*) is generally dominant or codominant within this vegetation type, alongside white bursage (*Ambrosia dumosa*) and brittlebush (*Encelia farinosa*). Brittlebush and white bursage are both very fire sensitive with low survivability and limited sprouting ability but have high seedling recruitment. Creosote bush is a long-lived shrub (over 10,000 years as a clone) and has very low seedling recruitment. Creosote bush is poorly adapted to fire, with limited sprouting ability as well as resinous and

highly flammable foliage. White bursage tends to replace creosote bush on soil substrates with higher clay content and also colonize recently denuded/disturbed sites. Therefore, following fire, brittlebush and white bursage may dominate desert scrub communities for several years before creosote bush and other shrubs reestablish. This vegetation type is susceptible to invasive plant incursions with disturbance, which increases FRIs and fire severities, and has degraded large extents of this vegetation type.

2.2.2 ALKALI DESERT SCRUB

Alkali desert scrub communities were historically free of annual invasive plants and generally comprised minimal amounts of fine fuels, which made fire infrequent. FRIs within this vegetation type are generally long, occurring between 237 to 1,978 years. However, the presence of invasive annual plants such as cheatgrass (*Bromus tectorum*), red brome (*Bromus rubens*), and Russian thistle (*Salsola tragus*) has increased in many alkali desert scrub communities. The presence of exotic annuals alters fire regimes and increases fire frequency, especially under relatively high moisture conditions, which increase the rate of incursion and spread of invasive plants and production of fine fuels in the herbaceous understory. Generally, dry years following wet years increase the likelihood of fire within alkali desert scrub communities, where large fires are most common in July and August.

Saltbush species are fire intolerant and are generally killed by fire. Alkali desert scrub communities therefore do not readily or quickly recover after fire, and post-fire recovery and seedling establishment are reliant on on-site and off-site seed banks. Because this vegetation type is not resilient to fire, alkali desert scrub communities are susceptible to invasive plant incursions following fire, which in turn increases FRIs and fire severities.

2.2.3 SAGEBRUSH

Historic fire regimes within this vegetation type were variable and dependent on the kind, amount, and continuity of fuels. Sagebrush habitats with limited herbaceous understory vegetation are relatively fire resistant and can comprise discontinuous fuel beds relative to surrounding landscapes, which can interrupt the growth of many large wildfires. However, with disturbance, this vegetation type is prone to invasive plant (e.g. cheatgrass, red brome, and Russian thistle) incursions, which are highly flammable and increase the probability of high-intensity fires that can move rapidly through the landscape.

While sagebrush are easily killed by fire and do not resprout following fire, many other shrub species within this vegetation type do resprout (e.g., rabbitbrush [*Chrysothamnus* spp.], horsebrush [*Tetradymia* spp.], and bitterbrush [*Purshia* spp.]). Wildfire within sagebrush habitat reduces cover and density and post-fire establishment is dependent on on-site and adjacent seed sources. If sagebrush seeds survive fire and are not buried too deeply, they may germinate from short-lived soil seed banks following fire, and sagebrush that survives in unburned areas may produce abundant seeds if ecological conditions are favorable. Natural recovery following large, high-intensity burns may be slow in this vegetation type, and revegetation/reseeding efforts may be necessary to achieve desirable conditions and mitigate the risk for invasive plant incursions following fire.

2.2.4 RIPARIAN VEGETATION

Riparian vegetation covers much less than 1% of the county land area but is a critical risk factor with respect to wildfire. Almost all Inyo County communities are located along streams for the benefit of water availability. In the otherwise arid and sparsely vegetated landscape surrounding most communities,

riparian areas provide dense and continuous fuels leading into and through residential areas. Although the creeks and associated vegetation provide critical aquatic and riparian habitat within an arid region, the dense and continuous vegetation carries a wildfire risk analogous to a wick through an otherwise low-fuel environment (Switzer and Umek 2022). Irrigation of residential yards, community areas, and agricultural fields has created “oasis” conditions and high fuel loads within the communities compared with their immediate surroundings. Observed from the air or the Sierra Nevada, the green communities, fields, and riparian corridors stand out in marked contrast to the adjacent brown and sparsely vegetated landscape.

At mid-elevations throughout the county, stringers of riparian vegetation that occur along perennial and ephemeral drainages have generally not been altered in their vegetative composition and have a stand-replacing fire regime that often affects the growth of fires, especially with downslope winds on the eastern escarpment of the Sierra Nevada. With concentrated fuel loads, fires can follow riparian areas and move into human developments along them with the right fire weather conditions. These communities dominated by willow, water birch (*Betula occidentalis*), cottonwood (*Populus* spp.), and aspen (*Populus tremuloides*) are disturbance adapted and recover vigorously after fire.

Low desert riparian environments in many regions of California, including the Owens Valley, have been altered extensively by human utilization. As a result of these modifications, species composition and spatial dimensions of riparian plant communities have changed. In many cases, native riparian vegetation is susceptible to invasive plant incursions, especially following disturbance (e.g., fire, dredging, vegetation management, etc.). Studies suggest that fire frequency and severity are increasing in many riparian environments where nonnative plants constitute a significant part of the plant community (Webb et al. 2019). Invasives species such as tamarisk (*Tamarix ramosissima*), Russian olive (*Elaeagnus angustifolia*), hairy whitetop (*Lepidium appelianum*), perennial pepperweed (*Lepidium latifolium*), Russian thistle, and Russian knapweed (*Acroptilon repens*) recover quickly from even the highest-intensity fires (University of California, Agriculture and Natural Resources [UCANR] 2009) and often increase in cover compared with native vegetation following fire. Nonnative vegetation alters fuel properties such as flammability and continuity, and fuel loading, which leads to increased fire risk and FRIs. Fires in these riparian areas are typically extensive and severe, with fire spreading easily from the surface into the canopies of the tallest native trees (UCANR 2009). While many invasives (e.g., tamarisk) exist within Inyo County riparian habitats, infestations are actively and relatively effectively treated by land managers.

2.3 CLIMATE AND WEATHER PATTERNS

The vast majority of Inyo County has an arid climate, with only the mountain ranges receiving more than 10 inches of annual precipitation on average (Powell and Klieforth 2000). Areas immediately east of the Sierra Nevada receive relatively little precipitation because of the strongly declining precipitation gradient in the lee of the mountains (“rain shadow effect”), occasional strong downslope winds, and warm to hot temperatures except during winter. Except at high elevations in the mountains, relative humidity is rarely above 20% and often less than 10%. Potential evapotranspiration (ET) (how much water could evaporate if water were not limiting) in desert areas with routinely high temperatures, very low relative humidity, and significant wind is calculated to be several feet, so the aridity index (precipitation/potential ET) classifies much of the Northern Mojave Desert as hyper-arid.

The eastern slope of the Sierra Nevada receives the greatest amount of precipitation in Inyo County with snow surveys in early spring before melting begins indicating average values up to 30 inches with a tendency to decline from north to south. There is a steeply declining gradient in precipitation with distance east from the crest. This rain-shadow effect is largely due to the descent of air in the lee of the crest, which causes warming and evaporation of clouds (Powell and Klieforth 2000). The areas immediately

east of the crest also benefit from wind-driven carryover of precipitation that resulted from the lifting and cooling on the west side of the Sierra Nevada and some wind transport of snow initially deposited west of the crest. Precipitation increases again as air rises the various ranges to the east (e.g., White-Inyo Mountains, Panamint Range, Coso Range).

Table 2.2. Climate Summaries for Weather Stations in Inyo County.

Station (elevation [feet])	Period of Record	Mean Annual Precipitation (inches)	Mean Annual Temperature (°F)		
			Max	Min	Mean Annual
Death Valley (-190)	1911–2016	2.2	91	63	77
Cow Creek (-150)	1934–1961	2.0	91	64	78
Shoshone (1,570)	1972–2011	4.8	83	56	70
Bishop Airport (4,110)	1895–2016	5.3	75	38	57
Independence (3,950)	1893–2016	5.2	75	45	60
Haiwee (3,830)	1923–2016	6.5	73	46	60
Bishop Union Carbide (9,400)	1957–1969	10.4	54	33	44
South Lake (9,580)	1924–2016	18.5	51	27	39
Deep Springs College (5,230)	1948–2007	6.0	68	37	53
White Mtn 1 (elevation not available)	1955–1977	13.1	47	21	34
White Mtn 2 (12,470)	1955–1980	18.5	36	19	28

July is typically the hottest month of the year in Inyo County, with average July maximum temperatures near or above 100 °F at the lower-elevation weather stations. December and January are usually the coldest months, with average minimum temperatures below freezing in the Owens Valley and Sierra Nevada (Western Regional Climate Center n.d.).

The months of December, January, February, and March receive approximately 67% of the annual precipitation. The summer months of July, August, and September are hot and dry with infrequent precipitation from thunderstorms and receive only approximately 8% of the annual precipitation. Rain/snow levels of 5,000 to 7,000 feet are typical for most winter storms. The amount of precipitation has been highly variable from storm to storm and from year to year. For example, following a very wet year in 2011, the region received well-below-average amounts of precipitation during the drought of 2012–2016. The winters of 2017, 2019, and 2023 were remarkably wet, with the intervening years of 2018 and 2020–2022 well below average. The past dozen years have been a dramatic example of the variability of precipitation in the region. The term “atmospheric river” has become popular recently, even though the concept has been well known by meteorologists for decades. Storms with so-called atmospheric rivers are a significant influence on Inyo County and can account for large proportions of the total precipitation in some winters.

Summers tend to be dry and warm because of the dominance of high pressure and the absence of a storm track through California during the summer months. Convective thunderstorms occasionally develop when adequate moisture enters the region. When the “Arizona monsoon” pattern delivers moist air far enough west and north, significant thunderstorms can occur each afternoon and evening for several days at a time in portions of Inyo County. Tropical storm “Hilary” in August 2023 delivered several inches of rain in less than 2 days to parts of Inyo County, resulting in severe erosion in many areas.

The geographic location of communities of the Owens Valley is significant because a few times each year, strong downslope winds off of the Sierra Nevada create severe fire-weather conditions. As a result of this topography and regional weather patterns, the communities are particularly at risk of wind-driven wildfires approaching from the west, as well as ignitions within the community during windy weather.

2.4 FIRE HISTORY

Fire is a natural part of California's diverse landscapes and is essential to many ecosystems across the state. Almost all of California's diverse ecosystems are fire-dependent or fire-adapted. For centuries, many California Native American tribes recognized this interdependence between fire and the ecosystem and used fire to maintain and restore ecosystem health. However, in the 1800s, removal of the native influence on the ecosystem—settlers began enforcing strict fire suppression regimes—led to issues such as dense stand conditions and increased vulnerability to fire. Wildland fire suppression operations, in conjunction with other management actions such as human expansion into wildlands and climate change, have resulted in an imbalance between wildfire and ecosystem interactions (CDFW 2021).

2.4.1 PAST FIRE MANAGEMENT POLICIES AND LAND MANAGEMENT ACTIONS

Beginning in the early 1900s, wildland fire policy leaned heavily toward aggressive suppression. Over the years, other agencies, such as the BLM, Bureau of Indian Affairs, and NPS, have followed the lead of the USFS and adopted fire suppression as the proper means for protecting the nation from wildfire. As a result, many areas now have excessive fuel buildups, dense and continuous vegetative cover, and tree and shrub encroachment into open grasslands.

2.4.2 RECENT FIRE OCCURRENCE

Because Inyo County is associated with the Great Basin and Mojave Desert biological provinces, it is not commonly associated with frequent or large fires. However, the county experiences a relatively high frequency of ignitions throughout the year. These ignitions result from various factors, such as lightning strikes, dispersed camping, negligence, fireworks, and improper use of cooking fires, as well as vehicle and equipment accidents. Adding to the fire risk are the county's persistent strong winds and complex topography. Inyo County experiences year-round winds from all cardinal directions, with the Eastern Sierra often channeling powerful downslope winds into the valley communities. Frequent north winds further exacerbate the situation. These winds frequently interact with topographic features, redirecting and intensifying wind speed and direction. For example, strong winds can rapidly move both uphill and downhill, posing a fire risk to communities from multiple directions. Additionally, winds can swiftly travel through canyons and down riparian corridors, further complicating fire management efforts.

The analysis below was developed using fire history data from CAL FIRE's FRAP (CAL FIRE 2023c). Although the fire history data from CAL FIRE are the most comprehensive digital record of fire perimeters in California, it has its limitations. CAL FIRE states that the earlier data (i.e., prior to 1950) is subject to significant uncertainty due to poor and inconsistent record keeping (CAL FIRE 2023c). Given the limitations of the data, the fire history analysis below may contain discrepancies. It should also be noted that the most recent decade (2020–2029) contains data only up until 2021.

The fire history analysis period (1960–2021) shows that Inyo County has a rich history of fire incidents (Figure 2.8). The period of 2000 through 2021 was reported to have the highest number of fires (Figure 2.9). Many of these fires occurred at the base of the Eastern Sierra Nevada and in the vicinity of the U.S. 395 corridor, including communities such as Bishop, Big Pine, Lone Pine, Aberdeen, Olancho, Round Valley, Independence, and other unincorporated areas.

The fires varied greatly in size, ranging from less than one acre to over 25,000 acres. Most fires were relatively small, with initial sizes under one acre. However, there were notable large-scale fires, for instance, one fire exceeded 10,300 acres. Some fires were part of larger complexes, such as the 2007 Inyo Complex. In addition, the period of 2000 through 2019 experienced an increase in the number of mid- to large-sized fires (size classes C, D, E, and F) (Figure 2.10). As a result, significant acreage burned during the same period (Figure 2.11).

The causes of these fires were diverse, with a large percentage attributed to both natural causes, such as lightning strikes and human-related activities, including campfires, equipment use, motor vehicles, and aircraft. Many fire incidents, however, had undetermined causes. Our analysis further grouped fires into three broad categories: human, natural, and unknown with all categories causing around the same total number of wildfires throughout the analysis period. However, the last two decades have experienced a disproportionate increase in each of the categories (Figure 2.12).

Fire incidents were most common in July over the 60-year period (Figure 2.13). Fire behavior varied, with some incidents being described as minimal, characterized by smoldering, creeping, and single tree torching. However, containment periods ranged from less than a day to a few months, with most fires contained during initial firefighting efforts. Some fires caused damage to structures and resulted in injuries, although fatalities were rare. Three CAL FIRE engines and one BLM engine were destroyed in initial efforts in Owens Valley and Inyo National Forest.

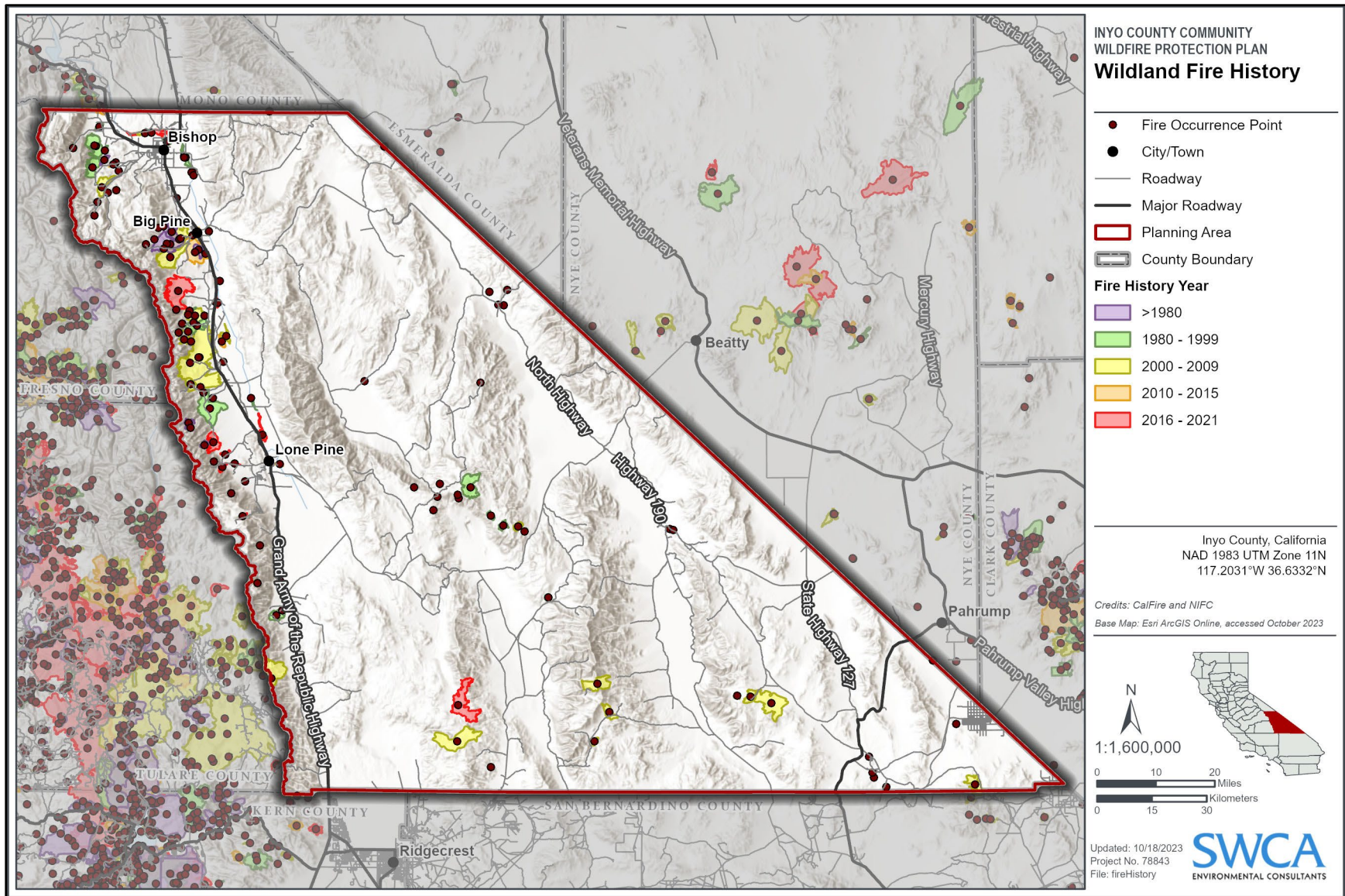


Figure 2.8. Historic fire perimeters and ignition points for Inyo County from 1900 through 2020.

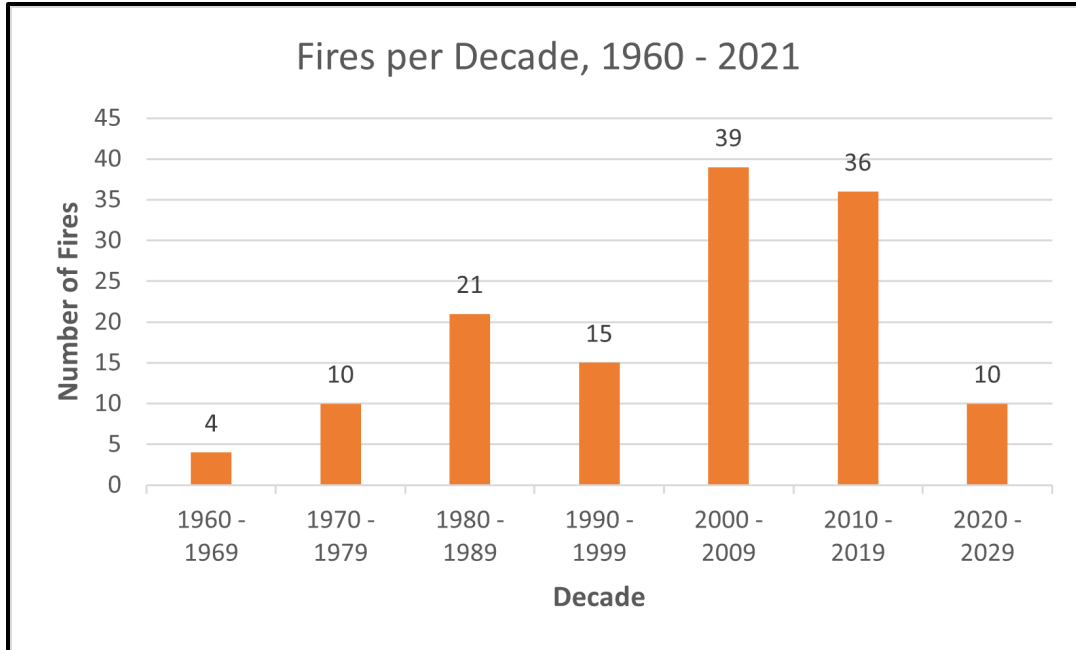


Figure 2.9. Decadal wildfire frequency in Inyo County from 1960 through 2021, based on available data.

Note: the most recent decade (2020–2029) contains data for 2020 and 2021.

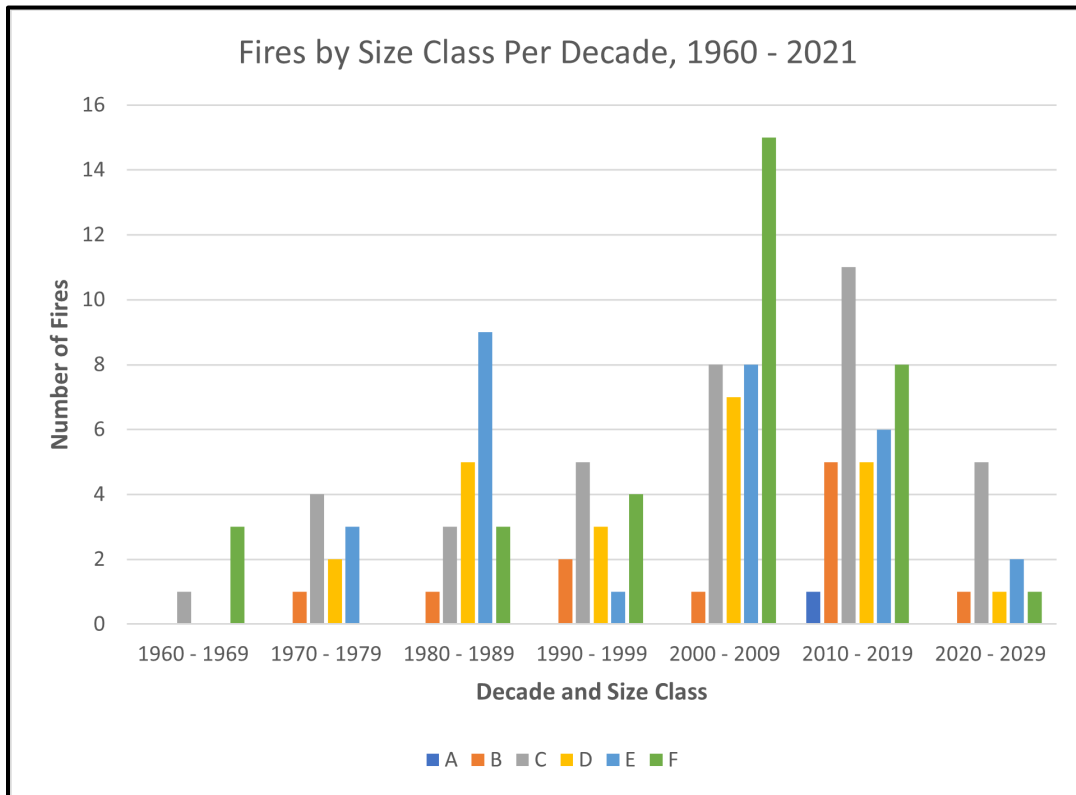


Figure 2.10. Fire size statistics per decade for Inyo County based on fire history data from 1960 through 2021.

Size Class: A = 0.25 acre or less; B = greater than 0.25 to 10 acres; C = 10 to 100 acres; D = 100 to 300 acres; E = 300 to 1,000 acres; F = 1,000+ acres.

Note: the most recent decade (2020–2029) contains data for 2020 and 2021.

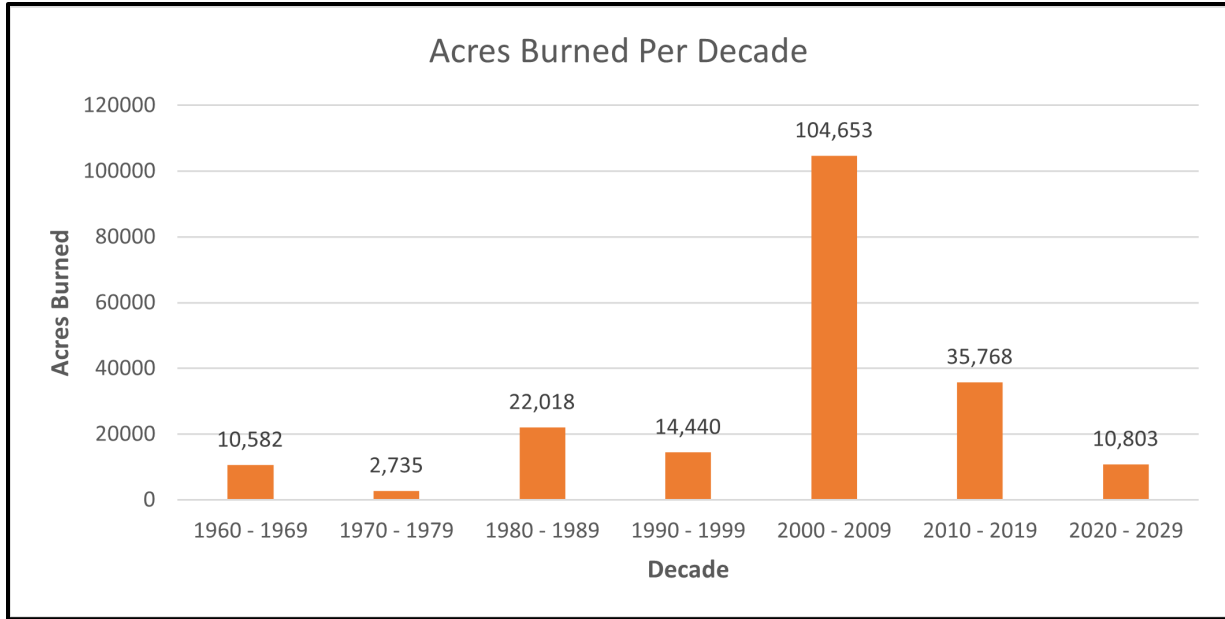


Figure 2.11. Acres burned per decade for Inyo County based on fire history data from 1960 through 2021.

Note: the most recent decade (2020–2029) contains data for 2020 and 2021.

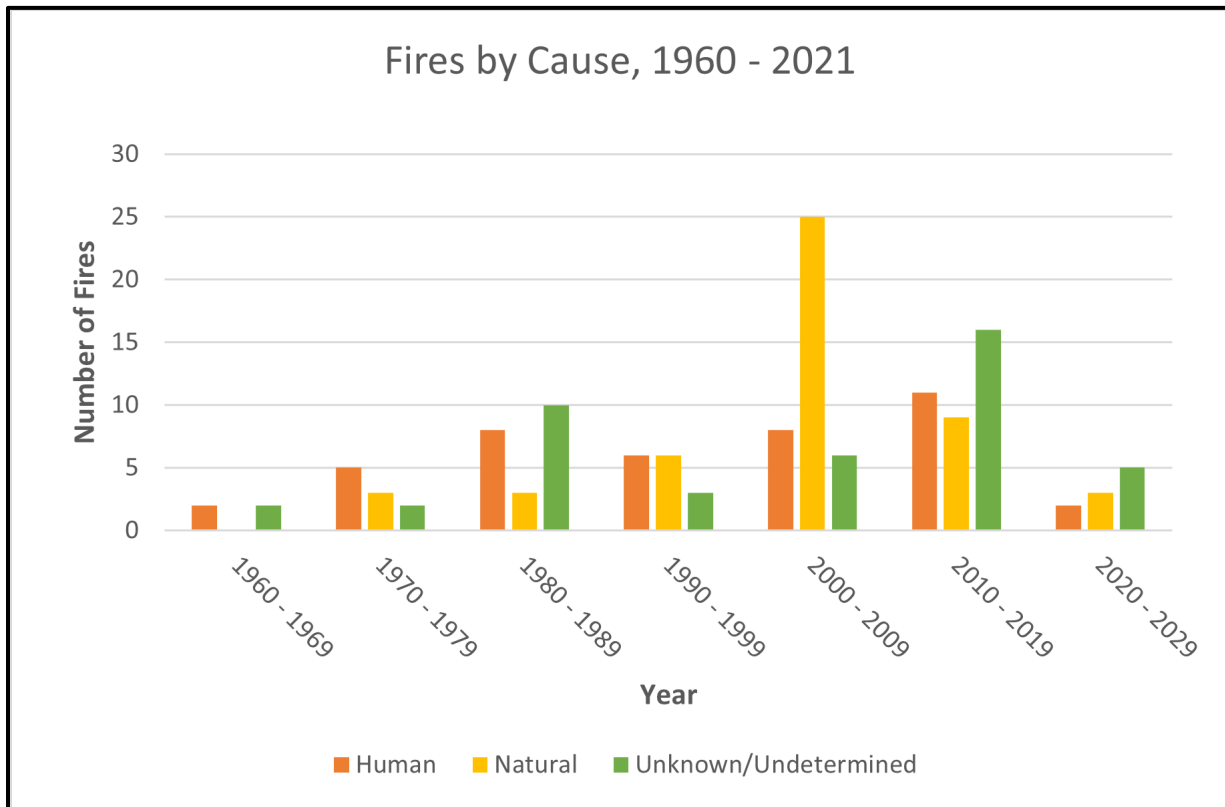


Figure 2.12. Fire causes for Inyo County from 1960 through 2021.

Note: the most recent decade (2020–2029) contains data for 2020 and 2021.

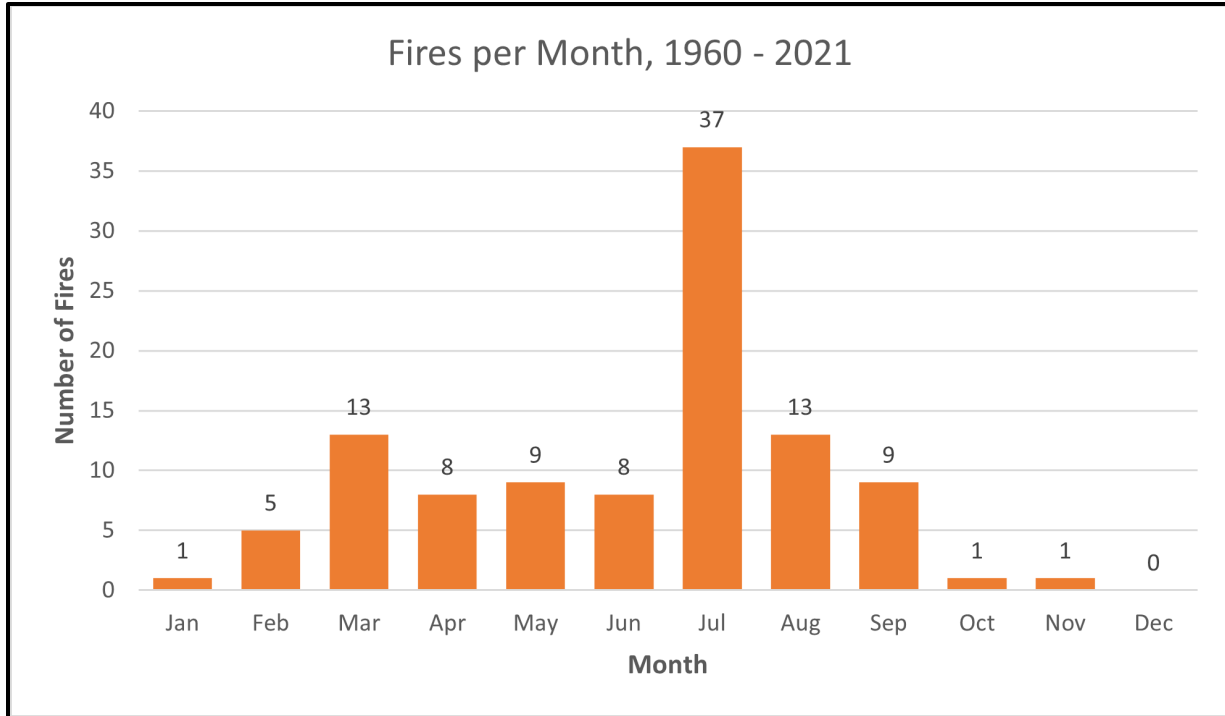


Figure 2.13. Monthly fire frequency in Inyo County based on data from 1960 to 2021.

Note: the most recent decade (2020–2029) contains data for 2020 and 2021.

Contemporary events include the Inyo Complex Fire of 2007. Lightning from widespread thunderstorms on July 6, 2007, ignited many fires along the eastern escarpment of the Sierra Nevada from Lone Pine to Big Pine. Ten of those fires grew sufficiently to combine with or approach other fires ignited on that same day. The Inyo Complex Fire burned more than 35,000 acres, six homes, and 27 outbuildings over the following 10 days. The Inyo Complex Fire was proclaimed a disaster by the State of California, making the county eligible for relief funds (Inyo County and City of Bishop 2017). In July of the following year, very intense rainfall generated a debris flow in the Oak Creek watershed that caused extensive damage to structures along Oak Creek (e.g., Bright Ranch, Mt. Whitney Fish Hatchery) and in Fort Independence, ultimately being diverted by U.S. 395 (Wagner et al. 2012). In 2012, intense precipitation triggered a smaller long-runout debris flow in Hailee Creek watershed, about 50 miles south of Oak Creek (Wagner et al. 2012).

Other fires in recent memory include the 2022 Airport and Fairview Fires. The Airport Fire ignited on February 16, 2022, to the east of Bishop at Airport Road and East Line Street and consumed 4,136 acres before being fully contained on February 26, 2022. The cause of the fire remains under investigation, and it led to evacuations and posed a threat to structures (CAL FIRE 2023d). On July 8, 2022, the Fairview Fire erupted within an unincorporated portion of Bishop at Fairview Circle, resulting in the destruction of nine residences and approximately 20 outbuildings, as well as damage to four additional residences. One firefighter suffered smoke inhalation, and one civilian was injured during the incident. The fire's cause is believed to be accidental and is also under investigation (Sierra Wave 2022).

More information regarding land management strategies, legislative direction, and wildfire planning within the county can be found in Appendix A.

2.4.3 FUTURE CHALLENGES

Frequent drought, suppression-based forest management practices, and climate change have interacted to increase forest vulnerability. Removing natural fire from a fire-dependent ecosystem, drought, insects, and diseases have resulted in increased fuel build-up and alterations to vegetation composition. These forest changes can increase the risk of uncharacteristically large high-severity fires (CDFW 2021). In the past few years, fires have grown to record sizes and are burning earlier, longer, hotter, and more intensely than they have in the past (Westerling et al. 2006; Westerling 2016).

According to Westerling et al. (2006), a study of large (>1,000 acres) wildfires throughout the western United States for the period of 1970 to 2003 saw a pronounced increase in fire frequency since the mid-1980s (1987–2003 fires were four times more frequent than the 1970–1986 average). An update to Westerling et al.'s (2006) work found that the frequency of large wildfires has continued to increase with each decade since 1970 (Westerling 2016). Indeed, recent studies suggest that this trend will continue. Iglesias et al. (2022) found that average fire occurrences in regions of the United States are up to four times larger in size, more extensive, and triple the frequency during the last two decades.

Within the last 10 years, a record number of acres have burned, and numbers have surged since the turn of the century (National Interagency Fire Center [NIFC] 2022a). In 2022, 68,988 fires were reported nationwide, burning well over 7.5 million acres (NIFC 2022a). Of these, over 360,000 acres were burned in California (CAL FIRE 2022a). With increased fires comes increased suppression costs. The fire year of 2021 beat all previous records, with federal firefighting costs hitting over \$4 billion, and 2022 following closely with more than \$3.5 billion (NIFC 2021a).

Impacts of climate change and tree mortality are discussed in Appendix B.

2.4.4 FIRE RESPONSE CAPABILITIES

California contains many federal, state, and local fire protection organizations that are well integrated through a variety of mutual aid and fire protection agreements and coordinated by organizations such as the California Wildfire Coordinating Group, the Northern and Southern California Geographic Area Coordination Centers, and FIREScope (an interagency resource coordination system for fire and other emergencies in the southern California). Agencies such as California Emergency Management, USFS, BLM, NPS, and CAL FIRE contribute to the substantial wildfire response capacity, which can be deployed to incidents throughout the state. California contains one of the strongest wildfire suppression capabilities in the nation.

Within California, fire responsibility is categorized into three areas: Local, State, and Federal Responsibility Areas (Map C.10 in Appendix C). Local Responsibility Area (LRA) is a legal term defining the area where the local government has financial responsibility for the prevention and suppression of wildfire. State Responsibility Area (SRA) defines where the state government is responsible for wildfire response, and Federal Responsibility Area (FRA) defines where the federal government is responsible. The majority of the county is within the FRA, while the main population centers are designated as SRAs. Additionally, scattered throughout the county are LRAs (see Map C.10 in Appendix C).

Similarly, Direct Protection Areas (DPAs) are established geographic areas where cooperative fire protection agreements exist between state, federal, and local government agencies. These agreements aim to efficiently deliver fire protection services, safeguarding life, property, and natural resources in areas of mutual concern. While the fire responsibility area designations described above determine the governmental level (local, state, or federal) responsible for fire protection, DPAs further specify the

agency that holds this responsibility. DPAs comprise boundaries that transcend statutory responsibilities, with the protecting agency within the DPA assuming both the responsibility for fire suppression and associated fiscal obligations as outlined in the cooperative fire protection agreement. These arrangements ensure effective collaboration and resource allocation during emergencies, with assistance provided either through mutual aid or reimbursement agreements (FIREScope n.d.). The majority of populated areas are under CAL FIRE's DPA, followed by USFS and BLM DPAs. A significant portion of the county falls under NPS's DPA, although most of this land is very sparsely populated (Figure 2.14).

Local Response

At the local level, the commitment to safeguarding communities from the threat of wildfires is a shared responsibility among the six fire protection districts (FPDs) (Figure 2.15). These FPDs are primarily serviced by dedicated volunteer fire departments, each facing common challenges in its mission to protect lives and property. These overarching challenges are listed below.

- **Understaffing:** Many FPDs experience challenges related to understaffing, requiring solutions for recruiting and retaining dedicated volunteers.
- **Aging or Lack of Equipment:** The presence of aging equipment or lack of equipment poses a significant concern, necessitating upgrades and maintenance of critical assets such as vehicles, fire stations, and personal protective equipment.
- **Capacity Constraints:** Limited capacity often hinders FPDs' ability to engage in public education and outreach initiatives.
- **Grant Accessibility:** Securing grants and financial support is vital to bolster resources, but accessing them can be challenging.
- **Communication Challenges:** The reliability of radio and cellular coverage in some areas is suboptimal, impacting communication during critical fire response operations.
- **Water Resources:** Access to reliable water resources is essential for an effective firefighting effort, but several FPDs encounter challenges with underdeveloped, faulty, or nonexistent water resources.
- **Recruitment and Retention:** Ensuring a consistent pool of well-trained volunteers is a priority. Addressing recruitment and retention issues is vital to maintain an active and effective fire response force.
- **Resource Allocation:** Some FPDs experience strain on their resources due to responding to calls beyond their designated service areas, requiring optimization of resource allocation for efficient response.

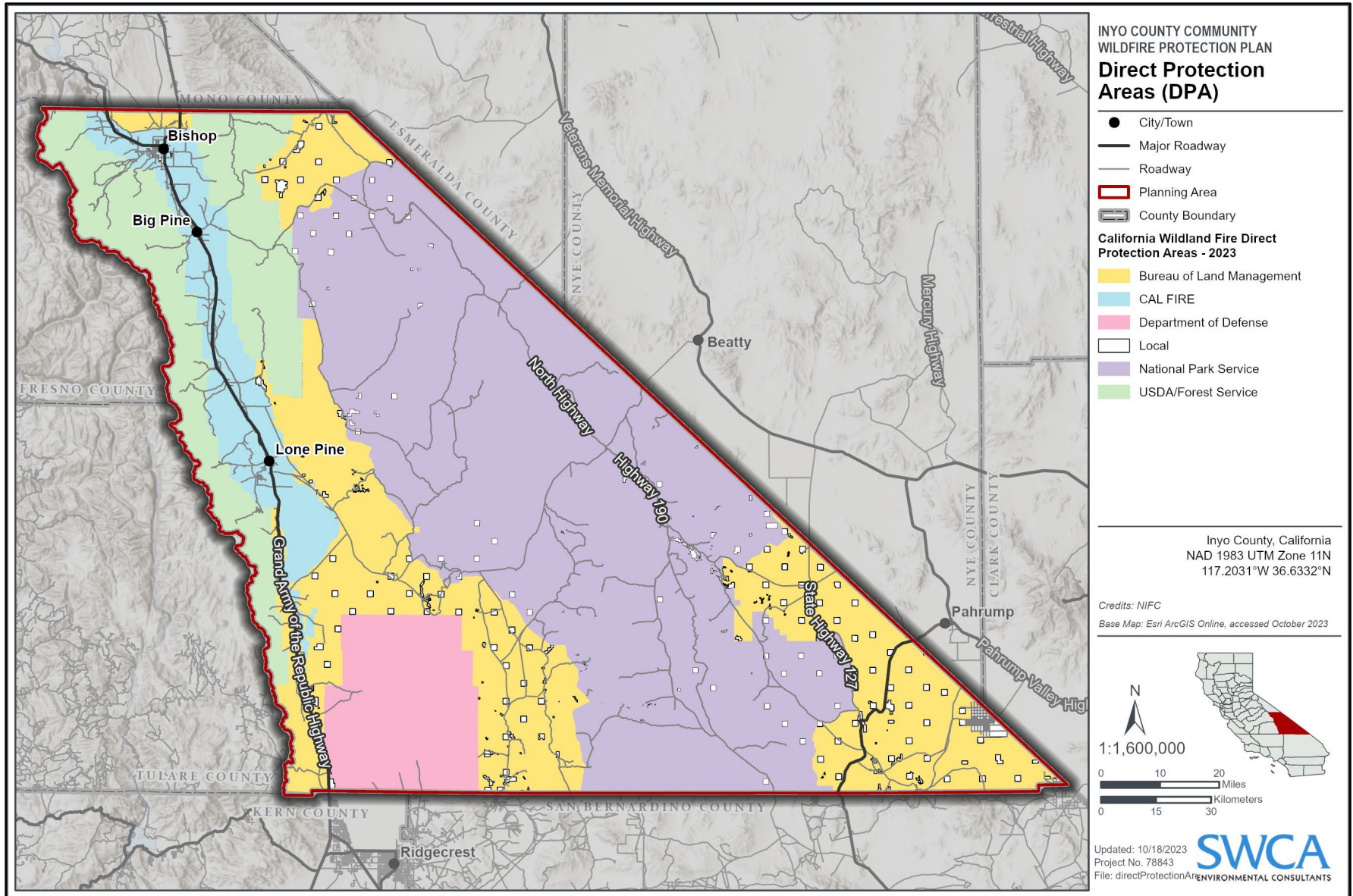


Figure 2.14. DPAs throughout Inyo County.

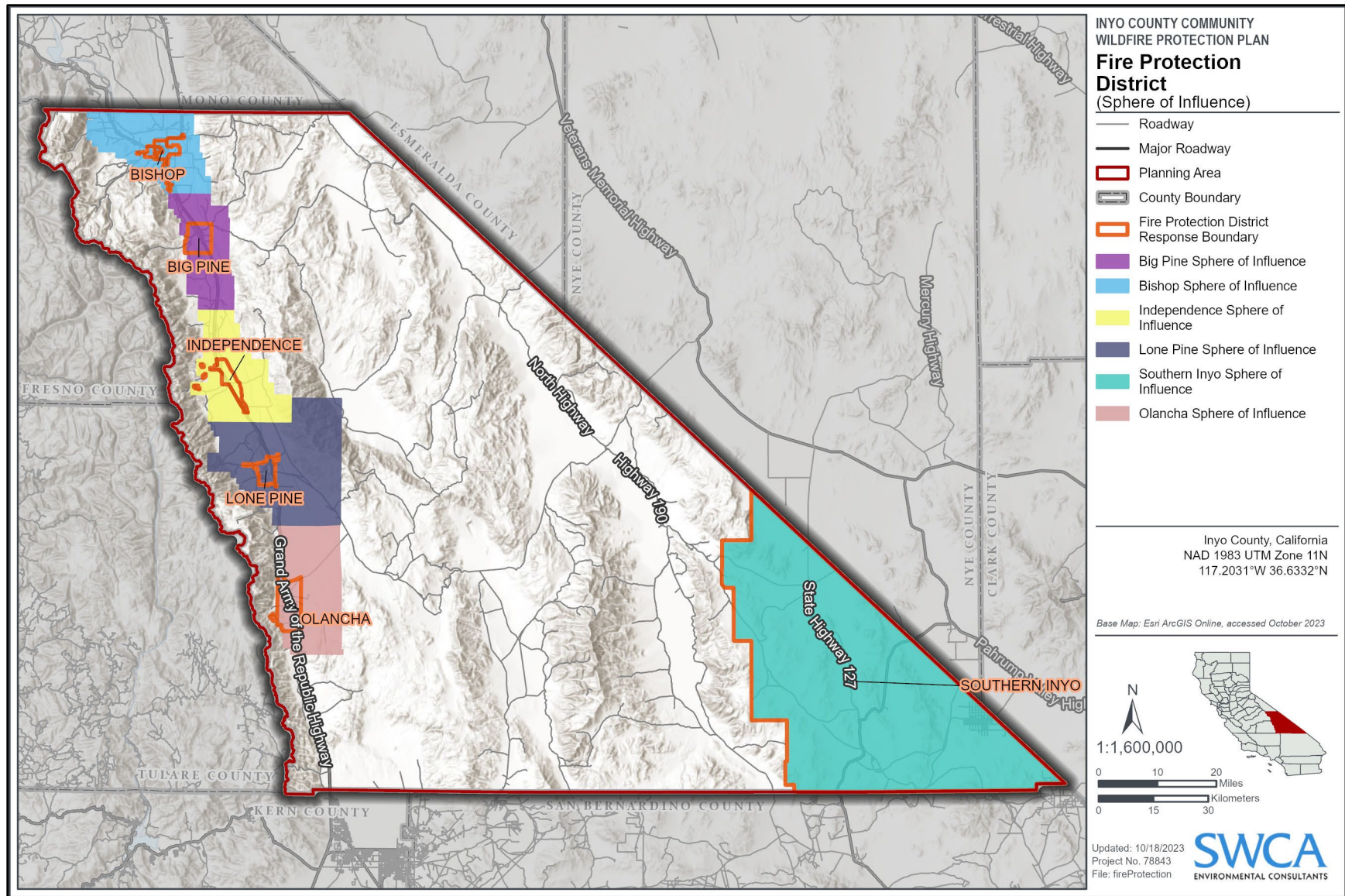


Figure 2.15. FPDs in Inyo County.

Bishop Fire Department

The first fire commissioners for Bishop were appointed in 1893, a decade before the City of Bishop would become incorporated territory in 1903. Through cooperative efforts between the City of Bishop and the Bishop Rural FPD, the Bishop Fire Department provides fire protection and emergency medical services to those in Bishop area. The department includes a full-time fire chief, full-time assistant fire chief, full time administrative officer, part time Fire Prevention Officer/Inspector, and 38 volunteer firefighters working out of three stations. The communities within the service are Bishop, West Bishop, North Bishop, the Bishop Paiute Reservation, Rocking K, Laws, and Wilkerson. Burn permits can be acquired through the department when the burn ban is lifted during the winter months and when conditions are safe for prescribed burns (City of Bishop 2023).

Big Pine Fire Protection District

The Big Pine FPD's mission is to serve and protect the local community, providing fire protection and emergency response services to the Town of Big Pine and surrounding area. The FPD comprises 32 firefighters and 11 EMTs, all of whom are volunteers. Placing great importance on community education and engagement, the district provides CERT training and holds Fire Prevention Month in October. The district is also responsible for issuing burn permits during suitable weather conditions (Big Pine FPD 2023).

Lone Pine Fire Protection District

The Lone Pine FPD serves communities located in the east-central portion of the county, offering fire and emergency medical services. The district comprises 35 volunteer members operating out of two stations and equipped with three ambulances and three fire vehicles. They provide advanced life support services and respond to various emergencies, including fires, medical incidents, accidents, rescues, and hazardous material situations. The Lone Pine FPD is ready for large-scale incidents and is governed by a five-member board elected by Lone Pine residents and collaborates with agencies like CAL FIRE, BLM, and the Inyo County Sheriff's Office (County Office 2023).

Southern Inyo Fire Protection District

Serving communities within southeastern portion of the County, the Southern Inyo FPD provides both fire protection and emergency medical services. The district is composed of a main station and a volunteer station, with plans of constructing a permanent station located at 501 Old Furnace Creek. Southern Inyo FPD's service area covers 1,250 square miles and approximately 100 miles of highway (Southern Inyo FPD 2010)

Independence Volunteer Fire Department

The Independence Volunteer Fire Department serves communities located in the east-central portion of the county, such as Independence, Oak Creek, and Seven Pines. The fire department is highly engaged with the public, updating them on upcoming events and fire safety announcements using social media such as Facebook. Additionally, the department hosts barbecues to both raise money and strengthen its relationship with the community it serves.

State Response

California Department of Forestry and Fire Protection (CAL FIRE) San Bernardino Unit

The CAL FIRE San Bernardino Unit (BDU), spanning San Bernardino, Inyo, and Mono Counties, operates with the mission of safeguarding communities, property, and resources across the jurisdiction. The unit aims to carry out this mission through effective wildfire prevention, response, and mitigation, with a particular focus on fuel treatments. Covering a vast area with diverse fuel types and topography, the unit has a history of large and destructive wildfire driven by factors like strong winds. Further challenges faced by the unit include invasive pests and changing climatic conditions, both of which influence potential fire behavior and require adaptation, management, and mitigation.

BDU's Eastern Sierra Division encompasses the SRAs of Inyo and Mono Counties. Two CAL FIRE stations serve Inyo County. The Independence station, located at 250 East Park Street in Independence, staffs two Type III engines, and the Bishop station, located at 2784 South Round Valley Road in Bishop, staffs one Type III engine. In conjunction with the California Department of Corrections, BDU operates the Owens Valley Conservation Camp, located adjacent to the Bishop station. The Owens Valley Conservation Camp can staff up to five inmate firefighter crews, depending on inmate availability. Eastern Sierra Division resources also include one Division Chief, two Battalion Chiefs, and a CAL FIRE bulldozer. All BDU Eastern Sierra Division resources are staffed year-round.

Federal Response

The management of wildfire ignitions for multiple resource objectives (managing naturally burning fires in forests as a tool for helping to restore forest health and mitigating the escalating costs of fire suppression) is practiced on federal land but depends on a thorough assessment of risk to values at risk (VARs) in the WUI. Depending on the location and nature of a wildfire, policies developed through interagency collaboration outline appropriate management responses to guide district personnel in the application of specific suppression techniques. All large wildfire response would be based on assessment using the Wildland Fire Decision Support System (WFDSS) (U.S. Geological Survey [USGS] 2023).

Inyo National Forest and the Bureau of Land Management

Overall, the USFS provides wildfire response and management for over 193 million acres of National Forest System land within the United States (CRS 2023). National Forest lands are considered FRAs, which are regions where the federal government is responsible for fire response. On USFS land, the USFS has the responsibility for initial attack (initial response).

The Inyo National Forest and BLM Bishop Field Office have an Interagency Fire Organization covering an area from the southern Sierra near Ridgecrest to Topaz Lake on the Nevada border, and from the crest of the Sierra Nevada to the White Mountains.

Located in Bishop, the White Mountain Ranger Station has one Type 3 wildland engine, two fire prevention patrol units, one 20-person hotshot crew (the Inyo Hotshots), a district fire management officer and an assistant district fire management officer, all from the USFS. In the summer, a BLM fire prevention unit also works out of this station.

Also located in Bishop are various "Fire Overhead" personnel: fire planners, forest fire management officers, an interagency mitigation/education specialist, and more. These employees are a mixture of USFS and BLM employees and manage the overall direction of the interagency fire program for the area.

At the Eastern Sierra Regional Airport is the Bishop Air Tanker Base, capable of reloading nearly all air tankers in service today, except for the Very Large Air Tankers (VLATs) such as the DC-10 and 747. The tanker base is operated on an as-needed basis, but also hosts a Single Engine Air Tanker (SEAT) during the summer.

At the north end of Independence is a Helitack base. There is a Helicopter 525, which is a Type 3 ship. This helicopter is used for local and national aerial wildfire fighting efforts. Additionally, the BLM California Desert District stations a Type 3 engine in Olancha 4 days per week during the fire season.

Finally, the town of Lone Pine is home to a Type 3 wildland fire engine, a fire prevention and control unit, and a district fire management officer and assistant.

Death Valley National Park

Dispatch for emergency services within Death Valley National Park is consolidated by the Federal Interagency Communication Center (FICC), through both the Ridgecrest and Barstow dispatch areas. The FICC is an interagency agreement between the USFS, BLM, NPS, and Bureau of Indian Affairs. Dispatch services are provided 24 hours per day, 365 days per year.

The resources made available through this partnership include 35 fire stations, seven active fire lookouts, 20 fire prevention units, 70 forest protection officers, six hand crews, one fuels crew, three helicopters, 1 helitanker, and 1 dozer.

Mutual Aid

The wildland fire community is well known for its development of mutual aid agreements at the federal, state, and local levels. Such automatic aid agreements allow for the closest forces to respond to an incident as quickly as possible regardless of jurisdiction. Such agreements may also describe how reimbursement will be conducted; state resources responding to wildfires on federal land may have their associated costs reimbursed by the responsible federal agency, and the reverse is true for federal resources suppressing a wildfire on state land.

The CAL FIRE BDU participates in the statewide mutual aid system and maintains agreements with local response organizations, including incorporated cities, neighboring counties, and state and federal wildland agencies.

Evacuation Resources

Evacuation planning is a joint effort among county departments, with law enforcement as the lead agency. At a county level, evacuation routes and procedures are detailed in the Emergency Operations Plan (Inyo County 2016) and Hazard Mitigation Plan (Inyo County and City of Bishop 2017).

You can sign up for Inyo County emergency notifications, CodeRED, here:

<https://public.coderedweb.com/CNE/en-US/DAD807D480BF>

The Access and Functional Needs Program, managed by the Inyo County OES, aims to improve emergency assistance for individuals with disabilities or special needs by maintaining a confidential database of their requirements. While the program provides assistance, it highlights the importance of

individual and family preparedness since government personnel may not be able to fulfill all needs during disasters. Currently active, the program is undergoing improvements to enhance its effectiveness in supporting emergency response agencies.

For more information and to sign up for the Access and Functional Needs Program, please visit: https://aspendedell.org/info_files/emergency_registration_inyo.pdf

For Southern California Edison's access and functional resources, please visit: <https://www.sce.com/wildfire/access-and-functional-needs>

For the joint Inyo-Mono access and functional needs registry, please visit: <https://webapps.mono.ca.gov/>

Safety Zones and Temporary Refuge Areas

A safety zone is a pre-planned area of sufficient size and suitable location that is expected to protect personnel and equipment from known hazards without using fire shelters. Beighley (1995, as cited in Butler and Cohen 1995) defined a safety zone as “an area distinguished by characteristics that provide freedom from danger, risk, or injury.” Defining the appropriate size of a safety zone depends on fire behavior, and the fuels, weather, and topography in an area at any given time. The more intense the wildfire (usually a measure of flame length), the larger the safety zone needs to be.

A temporary refuge area (TRA) is a preplanned area where firefighters or the public can immediately take refuge for temporary shelter and short-term relief without using a fire shelter in the event that emergency egress to an established safety zone is compromised (Firescope 2013). There are various examples of a TRA, but the better ones include the inside of a fireproof structure, football or baseball fields, parking areas, or large areas with a lack of burnable vegetation.

Although safety zones and viable escape routes should always be identified in the WUI environment, they may not be immediately available should the fire behavior increase unexpectedly. Often a TRA is more accessible in the WUI environment. A TRA will provide temporary shelter and short-term relief from an approaching fire without the use of a fire shelter and allow first responders to develop alternate safety plans as needed.

The public should always have an exit strategy:

- Employ tactical maneuvers to avoid heat injury; move away from the fire.
- Move to a TRA.
- Withdraw along an escape route.
- Move into a safety zone.

While comparatively safer than surrounding areas, these TRAs and safety zones do not guarantee safety because access to these locations may not be possible. In addition, TRAs and safety zones may not be large enough to accommodate everybody seeking refuge there. Further, there is no guarantee of the presence of first responders to facilitate or protect those taking refuge.

Pre-planning of escape routes, safety zones, and TRAs needs to involve first responders with a knowledge of fire behavior, as well as other emergency officials, community planners, and safety personnel.

TRAs in Inyo County may include large, barren agricultural fields, hillsides devoid of vegetation, airport strips, expansive parking lots, talus slopes, large sports fields or stadiums, and areas with minimal

vegetation that are oriented perpendicular to the direction of prevailing winds. Refer to Figures 2.16 through 2.19 for examples of TRAs.



Figure 2.16. Adobe building with metal roof.

Source: Rich McCrea, Wildland Fire Associates



Figure 2.17. Sparse fuels and a plowed field.

Source: Rich McCrea, Wildland Fire Associates



Figure 2.18. Large, barren open lots in Inyo County, including the Tri County Fairgrounds.

Source: Rick Kattelman, The Whitebark Institute



Figure 2.19. Large, paved surfaces in Bishop Airport.

Source: Rick Kattelman, The Whitebark Institute

People

The safe and efficient evacuation of people from wildfire requires several factors, including:

- **Emergency notification methods:** Inyo County has established CodeRED, an Emergency Notification System that utilizes reverse 911. Residents must register their numbers in the system. Social networking sites such as Facebook, Nextdoor, and Twitter, as well as locally maintained blogs and email distribution lists, are other resources that have become highly valued during wildfires in nearby communities.
- **Preplanning by the public about how to evacuate and where to go:** Dead-ends, poor or missing signage, and conflicts with emergency vehicles driving into the community versus the public trying to leave complicate evacuation. Uncertainty about where to find temporary refuge can cause families to become separated and delay reunions. Some individuals without transportation or with limited mobility may be accidentally left behind.
- **Public awareness:** These two items will fail to occur throughout CARs if the residents are unaware of notification methods: 1) the need for preplanning and 2) the elements that should be included in preplanning. Therefore, public education and outreach on these topics should be part of all efforts conducted by agencies such as fire departments in a wide variety of venues.

Animals and Livestock

In the event of a wildfire, it is important that residents and fire responders have a plan for evacuation of pets and livestock. Evacuation planning often neglects to describe how animals will be evacuated and where they will be taken. The loading of horses, for example, during a fire and smoke situation, and transport of stock vehicles down narrow roads under stressful situations, can be very difficult. Public education could emphasize the need for individuals to have a plan for the evacuation of pets in addition to their family, ensuring a lack of planning doesn't slow or prevent evacuation.

There is also a need to pre-identify where animals can be taken, such as county fairgrounds, for large animal shelter. Similarly, locations where small animals such as dogs and cats are picked up in the fire area should also be pre-identified, as well as the lead agencies, such as humane societies, coordinating this work.

Inyo County Animal Services helps with evacuating small and large animals from fire areas. In the past, Millpond Equestrian Center and the Tri-County Fairground have offered emergency housing for evacuated animals (Inyo County 2021).

Water Availability and Supply

Water availability for firefighting within communities depends on the local water system. Broadly speaking, the larger communities in Inyo County have dependable water sources and infrastructure, while the smallest communities generally depend on individual wells for residences and lack a hydrant system.

Where community water systems exist, maintenance of the network of water mains and fire hydrants likely does not receive adequate attention because of budgetary constraints. As a positive example, 45 hydrants were replaced on the Big Pine Indian Reservation in 2017 and 2018 with funding from a grant arranged by the Inyo-Mono Integrated Regional Water Management Program. Many other local systems would benefit from similar upgrades.

The City of Bishop Department of Public Works supplies water to all residents and businesses within the city limits. The basic infrastructure consists of three wells, a million-gallon storage tank, disinfection facility, and pipelines. Because much of “greater Bishop” is outside of the official limits of the City of Bishop, other water agencies supply more water to more people than does the City of Bishop Department of Public Works. The larger water purveyors include the Bishop Paiute Tribe, Highland Mobile Home Park, Indian Creek/Westridge Community Services District, Meadowcreek Mutual Water Company, and Sierra Highlands Community Services District. A large section of west Bishop is served by individual wells for interior domestic use and an extensive ditch network for irrigation of landscaping. The ditch system is critical to recharging the local groundwater and requires careful management. The Bishop Creek Water Association attempts to coordinate activities involving the ditch system between Southern California Edison, LADWP, Bishop Paiute Tribe, and homeowners (Alpert et al. 2019).

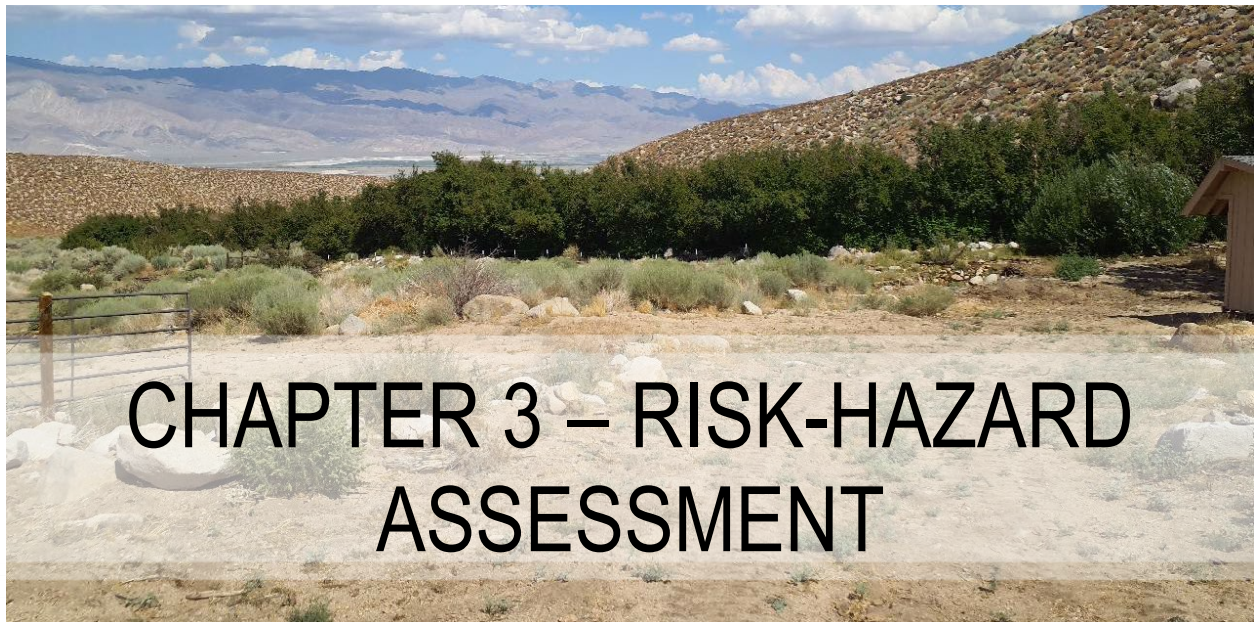
Water is supplied to Big Pine by the Big Pine Community Services District and Rolling Green Utilities, Inc. The Big Pine Paiute Tribe has its own water system. Inyo County Public Works Department distributes water to the communities of Laws, Independence, and Lone Pine from an allotment supplied by LADWP under the terms of the Long-Term Water Agreement. These systems are a classic example of long-deferred maintenance resulting in failures that are finally being addressed. For example, in 2017, more than 3,000 feet of the water main had to be replaced at a cost of about \$200,000. The Cartago Mutual Water Company is the water supplier for Cartago (Alpert et al. 2019).

Although there are many hydrants on the Lone Pine Paiute Shoshone Reservation, local residents do not believe there is adequate pressure and water availability for fire suppression. An engineering study of the system is desired.

Water for wildland firefighting and fire suppression in the wildland-urban interface/intermix usually depends on natural water sources (streams and ponds) as close to the fire as possible. Local crews at CAL FIRE and federal fire stations in Inyo County are familiar with water sources for various scenarios. However, suitable drafting sources are not always known to firefighters that are assigned from other geographical areas. The identification of water infrastructure and supply improvements, and associated funding to implement projects, is a key focus for Fire Safe Councils and agency fire responders. Prospective funding sources for such projects are listed alongside the water distribution improvements recommendation in Table 4.3 in Chapter 4.

Water availability in Inyo County is ultimately linked to precipitation. For the past dozen years, annual precipitation has been extraordinarily variable. The years 2012–2016, 2018, 2020–2022 were below average with regard to precipitation, with some of those years classified as extremely dry. Annual precipitation in 2011, 2017, 2019, and 2023 was well above average, with near-peak-record levels at some stations. There are several lines of evidence suggesting a continuing trend toward greater year-to-year variability.

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3.1 PURPOSE

The purpose of developing the Composite Risk-Hazard Assessment model described here is to create a unique tool for evaluating the risk of wildland fires to communities within the WUI areas of Inyo County. Although many definitions exist for hazard and risk, for the purpose of this document these definitions follow those used by the firefighting community:

Risk is defined as the chance of a fire starting as determined by the presence and activity of causative agents (NWCG 1998).

Hazard fuel is a fuel complex defined by kind, arrangement, volume, condition, and location that forms a special threat of ignition and resistance to control.

The Composite Risk-Hazard Assessment combines the findings from a Desktop Risk-Hazard Assessment (a geographic information system [GIS] model of hazard based on fire behavior and fuels modeling technology) and a Community Hazard Assessment (a Core Team-generated assessment of on-the-ground community hazards and VARs).

From these assessments, land use managers, fire officials, planners, and others can begin to prepare strategies and methods for reducing the threat of wildfire, as well as work with community members to educate them about methods for reducing the damaging consequences of fire. The fuels reduction treatments can be implemented on both private and public land, so community members have the opportunity to actively apply the treatments on their properties, as well as recommend treatments on public land that they use or care about.

The Inyo County and City of Bishop Multi-Jurisdictional Hazard Mitigation Plan (Inyo County and City of Bishop 2017) lists wildfire as a top priority hazard.

Disclaimer

The purpose of this risk assessment is to provide a community- and landscape-level overview of wildfire risk and is not recommended for use at smaller scales (such as for a property level analysis). It is also not recommended for use in determining insurance rates or policies. This risk assessment is a model, and as such has inherent biases, missing data, and other shortcomings, though every effort has been made to include the best available data and use the most robust scientific processes. Also note that just because an area is shown as high or low risk does not mean that that area will be burned or not burned in a wildfire—a low risk area can still be affected by wildfire if the conditions are right. This risk assessment is also not intended for use during active wildfire events, but rather only as a tool for pre-fire planning. It is not recommended that this risk assessment be used for any other purpose than what is stated here.

3.2 FIELD-BASED COMMUNITY HAZARD ASSESSMENTS

Community Hazard Assessments were conducted using the NFPA Wildland Fire Risk and Hazard Severity Form 1144 (see Appendix E). This form is based on the NFPA Standard for Reducing Structure Ignition Hazards from Wildland Fire 2013 Edition. The NFPA standard focuses on individual structure hazards and requires a spatial approach to assessing and mitigating wildfire hazards around existing structures. It also includes ignition-resistant requirements for new construction and is used by planners and developers in areas that are threatened by wildfire and is commonly applied in the development of Firewise Communities (for more information, see www.firewise.org).

The purpose of the Community Hazard Assessment and subsequent ratings is to identify fire hazards and risks and prioritize areas requiring mitigation and more detailed planning. These assessments should not be seen as tactical pre-suppression or triage plans. The Community Hazard Assessment helps to drive the recommendations for mitigation of structural ignitability, community preparedness, and public education. The assessment also helps to prioritize areas for fuels treatment based on the hazard rating. Each area was rated based on conditions within the community and immediately surrounding structures, including access, adjacent vegetation (fuels), defensible space, adjacent topography, roof and building characteristics, available fire protection, and placement of utilities. Where a range of conditions was less easily parsed out, a range of values was assigned on a single assessment form. Each score was given a corresponding adjective rating of low, moderate, high, or extreme.

Community Hazard Assessments for the communities within Inyo County were conducted in August 2023. Table 3.1 shows the risk ratings and scores for each community, and the CAR hazard summaries are provided in Table 3.2. This table also includes a summary of the positive and negative attributes of a community as they relate to wildfire risk. Full CAR descriptions are provided in Appendix D. Note that Table 3.3 provides the CAR hazard summaries for 40 Acres and the communities that were surveyed for the 2023 Independence CWPP.

Table 3.1. Community Risk Scores and Ratings

Community	Risk Score	Risk Rating
Whitney Portal	136	Extreme
Bishop Creek - Plant 4	133	Extreme
Darwin	125	Extreme
Glacier Lodge	116	Extreme

Community	Risk Score	Risk Rating
Lone Pine Creek North	116	Extreme
Aspendell	109	High
Charleston View	109	High
Homewood Canyon	109	High
South Fork Bishop Creek	96	High
Cartago/Olancha/Grant	95	High
Keeler	95	High
Olivas Ranch	95	High
Birch Creek	92	High
Chipmunk Canyon	86	High
Rudolph	86	High
Alabama Hills	84	High
Pearsonville	83	High
Bishop Paiute	82	High
Granite View	81	high
Lone Pine Paiute-Shoshone Tribe	79	High
Round Valley/Rovana	79	High
Sage Flats	78	High
Keough Hot Springs	77	High
Old Wilkerson	76	High
Tecopa	76	High
Mustang Mesa	75	High
Big Pine Paiute	74	High
Starlite	74	High
Bishop Unincorporated	71	High
Lone Pine	71	High
Walker Creek	71	High
Shoshone	69	Moderate
Rocking K	63	Moderate
Laws	62	Moderate
Aberdeen	61	Moderate
Deep Springs	60	Moderate
Furnace Creek/	59	Moderate
New Wilkerson	59	Moderate
Lone Pine Creek South	53	Moderate
White Mountain Research Center	53	Moderate
Big Pine	52	Moderate

Table 3.2. CAR Ratings with Community Hazard Assessment Summary

Community	Risk Rating	Fire District	Positives	Negatives
Aberdeen	61 (Moderate)	<ul style="list-style-type: none"> Independence Volunteer Fire Department sphere of Influence (SOI) Big Pine FPD (SOI) 	<ul style="list-style-type: none"> Relatively flat, surfaced roads Wide roads Reflective street signs Defensible space is acceptable 2 or more roads in and out Existing fuel breaks 	<ul style="list-style-type: none"> Water source not present Predominantly combustible deck, fence, siding, and roofing materials A couple of dead-end local access roads within community
Alabama Hills	84 (High)	<ul style="list-style-type: none"> Lone Pine Volunteer Fire Department 	<ul style="list-style-type: none"> 2 or more roads in and out Reflective street signs Good separation of adjacent structures Defensible space is acceptable 	<ul style="list-style-type: none"> Predominantly combustible deck, fence, siding, and roofing materials Medium to high angle slopes around structures Electric and gas utilities aboveground Complex topography Limited water availability A couple of dead-end roads within the community
Aspendell	109 (High)	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Predominantly non-combustible roofs (e.g., metal) Hydrants present Fire station near community Reflective street signs 	<ul style="list-style-type: none"> Tree branches resting on rooftops Combustible house siding, deck, and fencing Medium to high angle slopes around structures Electric and gas utilities aboveground Exposed propane tanks Most structures with limited defensible space

Community	Risk Rating	Fire District	Positives	Negatives
Big Pine	52 (Moderate)	<ul style="list-style-type: none"> Big Pine FPD 	<ul style="list-style-type: none"> Reflective street signs Existing fuel breaks Hydrants present throughout community Fire station within community Generally good defensible space West perimeter is bordered by a wide road and brick wall for most of its length 	<ul style="list-style-type: none"> Combustible deck, siding, and fencing Electric and gas utilities aboveground Some structures have ladder fuels (tree branches resting on rooftops)
Big Pine Paiute	74 (High)	<ul style="list-style-type: none"> Big Pine FPD 	<ul style="list-style-type: none"> Easily accessible to fire response Reflective street signs Low angle slopes around structures Hydrants present Fire station near community Relatively flat, surfaced roads 	<ul style="list-style-type: none"> Only combustible siding, deck, and fencing Electric and gas utilities aboveground Poor defensible space Many properties with excess yard debris and rubbish Community perimeter fuel breaks not maintained
Birch Creek	92 (High)	<ul style="list-style-type: none"> Big Pine FPD (SOI) 	<ul style="list-style-type: none"> Structures have good separation Some structures are hardened A couple of properties with non-combustible fencing 	<ul style="list-style-type: none"> 1 road in and out Street signs not present Hazardous topographic features (e.g., creeks with heavy fuels, limited setback for structures) Limited water resources Heavy fuel loading along narrow roads Severely limited options for turnarounds Dense riparian vegetation intersects community

Community	Risk Rating	Fire District	Positives	Negatives
Bishop Unincorporated (The field survey was focused on areas with heavy vegetation loading, limited access, and large, open spaces (e.g., the perimeter of Bishop proper))	71 (High)	<ul style="list-style-type: none"> Bishop Fire Department 	<ul style="list-style-type: none"> Wide roads greater than 24ft in width Relatively flat, surfaced roads Most areas have turnarounds Reflective street signs Fire station near community Ponds and culverts can be used to draft 	<ul style="list-style-type: none"> Limited defensible space Poor separation between structures Limited water availability in some areas Some areas have dead-end roads with only one access point and no turnarounds Cul-de-sacs present in some areas Problem areas: Reata Road, See Vee Lane, Underwood, Dixon Lane, Shepard Lane, Watterson Road, west of the Manor-Westridge neighborhood, west Bishop, west side of Brockman Lane (north of Line), and LADWP land adjacent to Line Street and Mumy Lane
Bishop Paiute	82 (High)	<ul style="list-style-type: none"> Bishop Fire Department 	<ul style="list-style-type: none"> 2 or more roads in and out Relatively flat, surfaced roads Reflective street signs Low angle slopes around structures Fire station near community 	<ul style="list-style-type: none"> Older properties with unmaintained yards Heavy fuel loading within community Poor defensible space Limited water availability Long driveways with fuels limiting access Some properties with excessive yard debris

Community	Risk Rating	Fire District	Positives	Negatives
Cartago/Olancha/Grant	95 (High)	<ul style="list-style-type: none"> Olancha Cartago Fire Department 	<ul style="list-style-type: none"> Hydrants present in Cartago Good separation between structures Reflective street signage 	<ul style="list-style-type: none"> Medium to high angle slopes around structures Combustible roofing, decks, siding, and fencing Electric and gas utilities aboveground Lack of hydrants in Olancha Most access roads are unpaved Unoccupied buildings FPD with limited equipment and personal protection equipment FPD station in need of repairs and upgrades
Charleston View	109 (High)	<ul style="list-style-type: none"> Southern Inyo FPD 	<ul style="list-style-type: none"> 2 or more roads in and out Wide roads Easily accessible to fire response, allowing for vehicles to turn around Low angle slopes around structures, decks, and fences Structures far from slope Light fuels around the perimeter 	<ul style="list-style-type: none"> Lack of an established and consistent street naming system Street signs not present Open lots with discarded flammable materials (e.g., plywood) Combustible house siding Fire station greater far from community Main access to Charleston from Tecopa is Old Spanish Trail – a paved road, steep in some areas, tight curves
Chipmunk Canyon	86 (High)	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Defensible space is acceptable Good separation of adjacent structures Fuel loading is light around the perimeter 	<ul style="list-style-type: none"> Community is situated on hazardous/complex terrain One narrow access road, unsurfaced, variable slope Street signs not present Lack of water resources Isolated community, very far away from fire response resources Gas and electric utilities aboveground

Community	Risk Rating	Fire District	Positives	Negatives
Darwin	125 (Extreme)	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Reflective street signs present Some structures have metal roofing and siding Light fuel loading around and within community (shrub fuels) 	<ul style="list-style-type: none"> Isolated community, very far away from fire response resources Many properties with large quantities of yard debris and wood piles One road in and out Poor defensible space Community is intersected by many hills Many homes are missing address markers
Deep Springs	60 (Moderate)	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Reflective street signs present Non-combustible deck and fencing Low angle slopes around structures Light perimeter fuels, almost barren to the south Agricultural field to the north and east Defensible space is acceptable 	<ul style="list-style-type: none"> Combustible house siding and roofing materials Lack of water resources Community is in a remote location, very far away from fire response resources Electric and gas utilities aboveground Branches resting on rooftops Narrow access road
Furnace Creek/ Timbisha- Shoshone Reservation	59 (Moderate)	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Fuels are light and sparse; surrounding hills are mostly barren 2 or more roads in and out Flat, surfaced roads Easily accessible to fire response with wide roads for trucks to turn around Hydrants present 	<ul style="list-style-type: none"> Limited defensible space (residences) Limited separation between structures Fire station is far from the community Electric and gas utilities aboveground

Community	Risk Rating	Fire District	Positives	Negatives
Glacier Lodge	116 (Extreme)	<ul style="list-style-type: none"> Big Pine FPD 	<ul style="list-style-type: none"> Good separation of adjacent structures 	<ul style="list-style-type: none"> Narrow and steep roads with tight corners Limited defensible space Most structures are situated in a canyon with heavy riparian vegetation Combustible siding and roofing materials Community is far away from fire response resources Private properties along the creek are difficult to access due to very steep and narrow, unpaved driveways
Granite View	81 (high)	<ul style="list-style-type: none"> Lone Pine Volunteer Fire Department (SOI) 	<ul style="list-style-type: none"> Good separation of adjacent structures Some structures with metal roofs Reflective street signs present Recent fuel breaks around the community and residences Community has established an agreement to allow the FPD to use private water tanks for fire protection Defensible space is acceptable 	<ul style="list-style-type: none"> 1 road in and out Complex topography Combustible house siding Gas utilities aboveground Limited water resources Community is situated at the base of mountains
Homewood Canyon	109 (High)	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Good separation of adjacent structures Non-combustible deck and fencing Reflective street signs present Main access road is wide and paved throughout the majority of its length Some structures are hardened (metal siding) 	<ul style="list-style-type: none"> 1 road in and out Community is situated in a canyon, with properties located on ridges and saddles Long, unmarked driveways with poor vegetation clearance Properties and open lots with copious amounts of debris and rubbish Limited defensible space for most structures Community is far away from fire response resources

Community	Risk Rating	Fire District	Positives	Negatives
Keeler	95 (High)	<ul style="list-style-type: none"> Lone Pine Volunteer Fire Department (SOI) 	<ul style="list-style-type: none"> 2 or more roads in and out Relatively flat, surfaced roads Easily accessible to fire response, allowing for vehicles to turn around Reflective street signs present Low angle slopes around structures, decks, and fences Fire station close to community 	<ul style="list-style-type: none"> Heavy shrub loading close to structures, heavy loading of invasive tamarisk within the community Combustible roof, house siding, deck and fencing materials Poor defensible space for most structures Excess debris and rubbish on some lots Both utilities aboveground
Keough Hot Springs	77 (High)	<ul style="list-style-type: none"> Big Pine FPD 	<ul style="list-style-type: none"> Main access road is relatively wide and surfaced Light fuel loading on the west side Easily accessible to fire response with wide roads for trucks to turn around Reflective street signs Defensible space is acceptable 	<ul style="list-style-type: none"> Exposed to heavy shrub fuels to the east, north, and south One road in and out Complex topography Combustible roofing and siding material Station is far from community Both electric and water utilities are aboveground
Laws (community is mostly industrial and commercial, very little residential)	62 (Moderate)	<ul style="list-style-type: none"> Bishop Fire Department 	<ul style="list-style-type: none"> Reflective street signs Easily accessible to fire response with wide roads for trucks to turn around Relatively flat, surfaced roads Low angle slopes around structures, decks, and fences Good structure setback Water source present (water tank) 	<ul style="list-style-type: none"> Combustible siding materials Most of the community is far from the fire station Gas and electric utilities are aboveground

Community	Risk Rating	Fire District	Positives	Negatives
Lone Pine	71 (High)	<ul style="list-style-type: none"> Lone Pine Volunteer Fire Department 	<ul style="list-style-type: none"> Reflective street signs Wide roads 2 or more roads in and out Low angle slopes around structures, decks, and fences Water source present (1 hydrant) Fire station near community 	<ul style="list-style-type: none"> Branches resting on rooftops Combustible roof, deck/fence and siding materials Poor separation of structures Gas and electric lines are aboveground
Lone Pine Creek North	116 (Extreme)	<ul style="list-style-type: none"> Lone Pine Volunteer Fire Department 	<ul style="list-style-type: none"> Reflective street signs 2 or more roads in and out Fire station near community Good separation of structures 	<ul style="list-style-type: none"> Properties are situated along the creek with dense riparian fuels Narrow roads making vehicle access difficult Combustible roof, deck/fence, and house siding materials Gas and electric lines are aboveground No water source
Lone Pine Creek South	53 (Moderate)	<ul style="list-style-type: none"> Lone Pine Volunteer Fire Department 	<ul style="list-style-type: none"> Water source present (water tank) Light fuel loading (shrub) Newer construction (hardened) Relatively wide, flat, and paved roads Reflective street signs Good defensible space 	<ul style="list-style-type: none"> Electric and gas utilities aboveground

Community	Risk Rating	Fire District	Positives	Negatives
Lone Pine Paiute-Shoshone Tribe	79 (High)	<ul style="list-style-type: none"> Lone Pine Volunteer Fire Department 	<ul style="list-style-type: none"> Easily accessible to fire response with wide roads for trucks to turn around Relatively flat, surfaced roads Fire station near community 	<ul style="list-style-type: none"> Poor defensible space for most structures Complex topography/terrain Some properties with excess rubbish and debris Gas and electric lines are aboveground Combustible roof and siding materials Hydrants in unknown condition Non-reflective street signs Inadequate fire flows Some areas with only 1 way in and out
Mustang Mesa	75 (High)	<ul style="list-style-type: none"> Bishop Fire Department (SOI) 	<ul style="list-style-type: none"> Wide roads Community interest in proactive engagement and planning Reflective street signs New construction with water tanks (not always full; fences limit accessibility) Good separation of adjacent structures 	<ul style="list-style-type: none"> 1 road in and out; road crosses heavy riparian vegetation (Mill Creek Rd) Limited defensible space for most structures Many unmarked dead ends within the community Combustible roof and siding materials Fire station greater than 5 mi from most of community Disperse camping in surrounding area
New Wilkerson	59 (Moderate)	<ul style="list-style-type: none"> Bishop Fire Department 	<ul style="list-style-type: none"> 2 or more roads in and out Relatively flat, surfaced roads Easily accessible to fire response Reflective street signs Maintained yards Hydrants present (3 total; 1 is not working, the other two have low flow rates) 	<ul style="list-style-type: none"> Limited defensible space for most structures Combustible roof, deck/fencing and siding materials Fire station is greater than 5 miles from community Gas and electric lines are aboveground Dispersed camping in the surrounding area

Community	Risk Rating	Fire District	Positives	Negatives
Old Wilkerson	76 (High)	<ul style="list-style-type: none"> Bishop Fire Department 	<ul style="list-style-type: none"> 2 or more roads in and out Reflective street signs Low angle slopes around structures, decks, and fences 	<ul style="list-style-type: none"> Limited defensible space for most structures Long, narrow driveways Combustible roof, deck/fencing and house siding materials Limited setback Fire station is far from the community Many dead-end dirt roads within the community Lack of water source
Olivas Ranch	95 (High)	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Reflective street signs 	<ul style="list-style-type: none"> 1 road in and out, unpaved and narrow Properties are located on stream bed with riparian fuels Combustible roof, deck, fencing, and house siding materials No water sources Community is remote and isolated; far away from a fire station
Pearsonville	83 (High)	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> 2 or more roads in and out Relatively flat, surfaced roads Easily accessible to fire response Reflective street signs Low angle slopes around structures, decks, and fences 	<ul style="list-style-type: none"> No water sources Limited defensible space for most structures Combustible roof and siding materials Abandoned structures Fire station far from community Gas and electric lines are aboveground

Community	Risk Rating	Fire District	Positives	Negatives
Bishop Creek - Plant 4	133 (Extreme)	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Good separation of adjacent structures 	<ul style="list-style-type: none"> One road in and out; road is very steep and narrow Street signs not present Poor defensible space for most structures Combustible deck, fencing and house siding materials No water supplies Properties are situated in a canyon, intersected by a heavy riparian fuel bed
Rocking K	63 (Moderate)	<ul style="list-style-type: none"> Bishop Fire Department 	<ul style="list-style-type: none"> 2 or more roads in and out Reflective street signs Low angle slopes around structures, decks, and fences Good water source (hydrants) Fire station near to community 	<ul style="list-style-type: none"> Limited defensible space for most structures Combustible fencing/deck, roof and siding materials Low separation of adjacent structures Gas and electric lines are aboveground
Round Valley	79 (High)	<ul style="list-style-type: none"> Bishop Fire Department (SOI) 	<ul style="list-style-type: none"> 2 or more roads in and out Reflective street signs Low angle slopes around structures, decks, and fences Good water source (hydrants) Community is relatively close to a fire station 	<ul style="list-style-type: none"> Limited defensible space for most structures Dispersed camping occurs uphill of community in Pine Creek (wind is downcanyon) Community is exposed to uphill and downhill driven fires History of recent fire occurrence Combustible deck/fencing, roof, and siding materials Gas and electric utilities are aboveground

Community	Risk Rating	Fire District	Positives	Negatives
Rudolph	86 (High)	<ul style="list-style-type: none"> Bishop Fire Department (SOI) 	<ul style="list-style-type: none"> Wide roads Relatively flat, surfaced roads Reflective street signs Low angle slopes around structures, decks, and fences Marked driveways 	<ul style="list-style-type: none"> Only 1 road in and out Limited defensible space for most structures Combustible roof and siding materials Gas and electric utilities are aboveground Lack of water source
Sage Flats	78 (High)	<ul style="list-style-type: none"> Olancha Cartago Fire Department 	<ul style="list-style-type: none"> Reflective street signs Relatively wide, paved road for most of the length (Sage Flats Dr) Private water tanks present Good separation of adjacent structures 	<ul style="list-style-type: none"> Only 1 road in and out; road narrows toward the west Limited defensible space for most structures Abandoned buildings Combustible roof and siding materials Fire station far from community Limited water supply Riparian corridor intersects community
Shoshone	69 (Moderate)	<ul style="list-style-type: none"> Southern Inyo FPD 	<ul style="list-style-type: none"> 2 or more roads in and out Flat, surfaced roads Low angle slopes around structures, decks, and fences Good setback Fire station near most of community 	<ul style="list-style-type: none"> Poor defensible space for most structures Excess rubbish and debris on some properties Combustible roof, fence/deck and house siding materials Gas and electric utilities are aboveground
Starlite	74 (High)	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Relatively flat, surfaced roads Good structure setback Low angle slopes around structures Reflective address markers Defensible space is acceptable Hydrants and water tanks present Starlite community water system 	<ul style="list-style-type: none"> Combustible deck/fencing, roof and house siding One road in and out for whole community Fire station far from community Gas and electric utilities aboveground Dispersed camping occurs in Buttermilk recreational area

Community	Risk Rating	Fire District	Positives	Negatives
South Fork Bishop Creek	96 (High)	<ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Reflective street signs Hydrants present Some structures with hardened roofs 	<ul style="list-style-type: none"> Long, unpaved driveways with heavy fuels Deck and fencing close proximity to slopes Combustible roof, deck/fencing, and house siding One road in and out for whole community Gas and electric utilities are aboveground Fire station far from community Community is situated in a canyon, subject to diurnal winds
Tecopa	76 (High)	<ul style="list-style-type: none"> Southern Inyo FPD 	<ul style="list-style-type: none"> 2 or more roads in and out Relatively flat, surfaced roads Easily accessible to fire response, allowing for vehicles to turn around Low angle slopes around structures, decks, and fences Non-combustible deck and fencing Fire station near most of community 	<ul style="list-style-type: none"> FPD lacks a proper fire station to shield equipment and vehicles from the elements Limited coverage of communications system Dead mesquite by Old Spanish Trail Limited defensible space Combustible siding and roofing materials Limited water source Gas and electric utilities are aboveground
Walker Creek	71 (High)	<ul style="list-style-type: none"> Olancha Cartago Fire Department 	<ul style="list-style-type: none"> Good defensible space around structures Low angle slopes around structures, decks, and fences Non-combustible deck and fencing 	<ul style="list-style-type: none"> Street signs not present Combustible roof and house siding materials Community is far from fire station Gas and electric utilities are aboveground Limited turnaround for response vehicles No water sources

Community	Risk Rating	Fire District	Positives	Negatives
White Mountain Research Center	53 (Moderate)	<ul style="list-style-type: none"> Bishop Fire Department (SOI) 	<ul style="list-style-type: none"> 2 or more roads in and out Relatively flat, wide, surfaced roads Reflective street signs Low angle slopes around structures, decks, and fences Non-combustible roof, deck and fencing materials Fire station near community 	<ul style="list-style-type: none"> Combustible structure siding No water sources Gas and electric utilities are aboveground Fuels on the east and west perimeter are dense
Whitney Portal	136 (Extreme)	<ul style="list-style-type: none"> Lone Pine Volunteer Fire Department (SOI) 	<ul style="list-style-type: none"> Reflective street signs Good separation of adjacent structures Water source present (spigots) 	<ul style="list-style-type: none"> One road in and out for whole community; uneven and unsurfaced roads Extremely limited turnarounds for response vehicles Limited defensible space Complex topography/terrain Combustible roofing, deck/fence and house siding materials Community is far from fire station

3.2.1 INDEPENDENCE AND 40 ACRES (ADOPTED)

Table 3.3. Independence and 40 Acres CWPPs CAR Ratings with Community Hazard Assessment Summary

Community	Risk Rating	Fire District	Positives	Negatives
40 Acres	43 (moderate)	<ul style="list-style-type: none"> Bishop Fire Department CAL FIRE Bishop Fire Station 	<ul style="list-style-type: none"> 2 or more roads in and out Relatively flat, surfaced roads Reflective street signs Fire-resistant roofing Ample waters sources Easily accessible to fire response with wide roads for trucks to turn around 	<ul style="list-style-type: none"> Lack of adequate separation between adjacent structures Severe fire weather potential Flammable grass and shrub fuels in northeast section of community Gas and electric lines are aboveground Exposed propane tanks next to woodpiles Fire hydrants not easily visible
East Independence	64 (Moderate)	<ul style="list-style-type: none"> Independence FPD 	<ul style="list-style-type: none"> Reflective street signs Easily accessible to fire response with wide roads for trucks to turn around 2 or more roads in and out Relatively flat, surfaced roads Reflective street signs Some structures with fire-resistant roofing Ample waters sources Most of the community is within 5 minutes or less from the fire station 	<ul style="list-style-type: none"> Flammable grass and shrub fuels in northeast section of community Tree lot not maintained Flammable shrubs surrounding community Dead and down logs in irrigation ditches and Independence Creek Limited defensible space Combustible decks/fencing and siding materials

Community	Risk Rating	Fire District	Positives	Negatives
Fort Independence	95 (High)	<ul style="list-style-type: none"> Independence FPD 	<ul style="list-style-type: none"> 2 or more roads in and out Most roads are relatively flat and surfaced Topography of community is relatively flat Most of the community is within 5-10 minutes from the fire station Fuels treatment projects east of community 	<ul style="list-style-type: none"> Relatively narrow roads Some roads lined with flammable fuels Heavy loading of dead/down fuels in community Many ditches are lined with heavy fuels Poor fire hydrant visibility Exposed propane tanks
Mount Whitney Fish Hatchery	76 (High)	<ul style="list-style-type: none"> Independence FPD 	<ul style="list-style-type: none"> Relatively flat, surfaced roads The Hatchery has fire-resistive roofing Reflective street signs The Hatchery has good defensible space The Hatchery has non-combustible siding material Most of the community is relatively close to the fire station 	<ul style="list-style-type: none"> Only 1 road in and out Relatively narrow roads Limited ability for fire trucks to turn around Combustible decks/fences that are near a slope Limited water sources (requires pumping from a pond) Gas and electric utilities are aboveground
Oak Creek	116 (Extreme)	<ul style="list-style-type: none"> Independence FPD 	<ul style="list-style-type: none"> Roads are flat Existing street signage is reflective Oak Creek runs through community Only 6-8 homes in community Most of the community is relatively close to the fire station 	<ul style="list-style-type: none"> Roads are very narrow within community Flammable vegetation along roads No turnaround potential for fire trucks Heavy debris flows and fuel loading along banks of Oak Creek Limited water supply Propane tanks exposed to dry fuels

Community	Risk Rating	Fire District	Positives	Negatives
Seven Pines	143 (Extreme)	<ul style="list-style-type: none"> Independence FPD 	<ul style="list-style-type: none"> Independence Creek flowing through center of community Recent wildfire west of community has reduced fuel loads Agency coordinated pre-fire planning Paved road leading up to community One large turnaround within community 	<ul style="list-style-type: none"> High fuel loads with needles in community Flammable shrub fuels lining access roads One road in and out for whole community Community is far from nearest fire station Seasonal cabin use, with lack of home maintenance Dispersed camping to the east
West Independence	80 (High)	<ul style="list-style-type: none"> Independence FPD 	<ul style="list-style-type: none"> Accessible to fire response, ample ability to turn around (wide roads) Reflective street signs Onion valley road can function as a fuel break Fuel loading surrounding town consists of light grass-shrub Ample water sources Most of the community is near fire station 	<ul style="list-style-type: none"> Limited defensible space Exposed propane tanks next to woodpiles Fire hydrants are not easily visible Combustible decks, fences, and house siding materials Potential for severe fire weather Gas and electric lines are aboveground

Note: Table is adopted from Independence and 40 Acres CWPPs

3.3 COMPOSITE RISK-HAZARD ASSESSMENT INPUTS

A desktop analysis of risks and hazards uses fuels properties (Map C.1 in Appendix C), topography, and weather to generate fire behavior modeling outputs: flame length (Map C.2), fireline intensity (Map C.3), rate of spread (Map C.4), crown fire activity (Map C.5), and fire occurrence density (Map C.6). These outputs, along with drive time distance from the fire station (Map C.7), the WUI (Figure 2.1 in Chapter 2), and VARS (Map C.8 in Appendix C), were subsequently used as inputs in the Composite Risk-Hazard Assessment.

Detailed information regarding topography, weather, fire regimes, fire history, and fire response can be found in Chapter 2.

3.3.1 FIRE BEHAVIOR MODELING

Overview

The wildland fire environment consists of three factors that influence the spread of wildfire: fuels, topography, and weather. Understanding how these factors interact to produce a range of fire behavior is fundamental to determining treatment strategies and priorities in the WUI. In the wildland environment, vegetation is synonymous with fuels. When sufficient dry fuels for continued combustion are present, the level of risk for those residing in the WUI is heightened.

There are three primary modes of fire spread: surface fire spread, crown fire, and spotting (Figure 3.1). Surface fire spread occurs at ground level, crown fire spreads through the upper forest canopy, and spotting involves the transportation of embers ahead of the main fire.

Treating fuels in the WUI can lessen the risk of intense or extreme fire behavior (Martinson and Omi 2013; Safford et al. 2009). Studies and observations of fires burning in areas where fuel treatments have occurred have shown that the fire either remains on or drops to the surface, thus avoiding destructive crown fire, as long as activity fuels are treated or removed (Graham et al 2004; Pollet and Omi 2002; Prichard et al. 2010; Safford et al. 2012; Waltz et al. 2014). Fuel mitigation efforts should therefore be focused specifically on where these critical conditions could develop in or near CARs.

For this plan, an assessment of fire behavior has been carried out using well-established fire behavior models: FARSITE, FlamMap, BehavePlus, and FireFamily Plus, housed within the Interagency Fuel Treatment Decision Support System (IFTDSS), as well as ArcGIS Desktop Spatial Analyst tools. Data used in the Composite Risk-Hazard Assessment is largely obtained from LANDFIRE (LANDFIRE 2023).



(1) Surface Fire



(2) Crown Fire



(3) Embers (airborne burning debris)

Figure 3.1. Images depicting the three methods by which wildfire can spread: surface fire, crown fire, and spotting.

Image 1 shows fire spread along the surface (e.g., grasses, shrubs), Image 2 shows fire spreading through the tree canopy (e.g., ladder fuels), and Image 3 depicts spotting (embers).

Image 3 source: <https://www.nist.gov/feature-stories/piecing-together-timeline-californias-deadliest-wildfire>

3.3.2 FIRE BEHAVIOR MODELS

LANDFIRE

LANDFIRE is a national remote sensing analysis project that provides managers a data source for inputs needed for FARSITE, FlamMap, and other fire behavior models. The database is managed by the USFS and the U.S. Department of the Interior and is widely used throughout the United States for land management planning. More information can be obtained from <http://www.landfire.gov>.

FARSITE

FARSITE is a computer model based on Rothermel's spread equations (Rothermel 1983) and Huygen's principle of wave propagation (Anderson et al. 1981); the model also incorporates crown fire models. FARSITE uses spatial data on fuels, canopy cover, crown bulk density, canopy base height, canopy height, aspect, slope, elevation, wind, and weather to model fire behavior across a landscape. FARSITE is a spatial and temporal fire behavior model. FARSITE is used to generate fuel moisture and landscape files as inputs for FlamMap. Information on fire behavior models can be obtained from <http://www.fire.org>.

FlamMap

Like FARSITE, FlamMap uses a spatial component for its inputs but provides fire behavior predictions for a single set of weather inputs only. In essence, FlamMap gives fire behavior predictions across a landscape for a snapshot of time; however, FlamMap does not predict fire spread across the landscape. FlamMap has been used for the CWPP to predict fire behavior across the landscape under extreme (97% worst case) weather scenarios. For this CWPP assessment, the model was run within the IFTDSS modeling platform.

3.3.3 FIRE BEHAVIOR MODEL INPUTS

Fuels

The fuels in Inyo County are classified using Scott and Burgan's (2005) Standard Fire Behavior Fuel Model classification system. This classification system is based on the Rothermel surface fire spread equations, and each vegetation and litter type is separated into 40 fuel models.

The general classification of fuels is by fire-carrying fuel type (Scott and Burgan 2005):

- (NB) Non-burnable
- (GR) Grass
- (GS) Grass-Shrub
- (SH) Shrub
- (TU) Timber-Understory
- (TL) Timber Litter
- (SB) Slash-Blowdown

Table 3.4 provides a description of each fuel type.

Map C.1 in Appendix C illustrates the fuels classification throughout Inyo County.

Table 3.4. Fuel Model Classification for Inyo County

1. Nearly pure grass and/or forb type (Grass)	
i.	GR1: Grass is short, patchy, and possibly heavily grazed. Spread rate is moderate (5–20 chains/hour); flame length low (1–4 feet); fine fuel load (0.40 ton/acre).
ii.	GR2: Moderately coarse continuous grass, average depth about 1 foot. Spread rate high (20–50 chains/hour); flame length moderate (4–8 feet); fine fuel load (1.10 tons/acre).
iii.	GR3: Very coarse grass, average depth 2 feet. Spread rate high (20–50 chains/hour); flame length moderate (4–8 feet).
iv.	GR4: Moderately coarse continuous grass, average depth 2 feet. Spread rate very high (50–150 chains/hour); flame length high (8–12 feet).
2. Mixture of grass and shrub, up to about 50% shrub cover (Grass-Shrub)	
i.	GS1: Shrubs are about 1-foot high, low grass load. Spread rate moderate (5–20 chains/hour); flame length low (1–4 feet); fine fuel load (1.35 tons/acre).
ii.	GS2: Shrubs are 1–3 feet high, moderate grass load. Spread rate high (20–50 chains/hour); flame length moderate (4–8 feet); fine fuel load (2.1 tons/acre).
iii.	GS3: Moderate grass and shrub load, average depth less than 2 feet. Spread rate high (20–50 chains/hour); flame length moderate (4–8 feet).
3. Shrubs cover at least 50% of the site; grass sparse to non-existent (Shrub)	
i.	SH1: Low fuel load, depth about 1 foot, some grass fuels present. Spread rate very low (0–2 chains/hour); flame length very low (0–1 feet).
ii.	SH2: Moderate fuel load (higher than SH1), depth about 1 foot, no grass fuels present. Spread rate low (2–5 chains/hour); flame length low (1–4 feet); fine fuel load (5.2 tons/acre).
iii.	SH3: Moderate shrub load. Fuel bed depth 2–3 feet. Spread rate low (2–5 chains/hour), flame length low (1–4 feet).
iv.	SH4: Low to moderate shrub and litter load, possibly with pine overstory. Fuel bed depth about 3 feet. Spread rate high (20–50 chains/hour); flame length moderate (4–8 feet).
v.	SH5: Heavy shrub load. Fuel bed depth 4–6 feet. Spread rate very high (50–150 chains/hour), flame length very high (12–25 feet).
vi.	SH6: Dense shrubs, little to no herb fuels. Fuel bed depth about 2 feet. Spread rate high (20–50 chains/hour); flame length high (8–12 feet).
vii.	SH7: Very heavy shrub load, possibly with pine overstory. Fuel bed depth 4–6 feet. Spread rate high (20–50 chains/hour); flame length very high (12–25 feet).
viii.	SH9: Dense shrubs, significant fine fuel. Fuel bed depth 4–6 feet. Spread rate high (20–50 chains/hour); flame length very high (12–25 feet).
4. Grass or shrubs mixed with litter from forest canopy (Timber-Understory)	
i.	TU1: Fuel bed is low load of grass and/or shrub with litter. Spread rate low (2–5 chains/hour); flame length low (1–4 feet); fine fuel load (1.3 tons/acre).
ii.	TU2: Moderate litter load with shrub component. Spread rate moderate (5–20 chains/hour); flame length low (1–4 feet).
iii.	TU3: Moderate litter load with grass and shrub components. Spread rate high (20–50 chains/hour); flame length moderate (4–8 feet).
iv.	TU5: High load conifer litter with shrub understory. Spread rate moderate (5–20 chains/hour); flame length moderate (4–8 feet).

5. Dead and downed woody fuel (litter) beneath a forest canopy (Timber Litter)

- i. **TL1:** Low to moderate load, fuels 1–2 inches deep. Spread rate very low (0–2 chains/hour); flame length very low (0–1 foot).
- ii. **TL2:** Low load, compact. Spread rate very low (0–2 chains/hour); flame length very low (0–1 foot).
- iii. **TL3:** Moderate load. Spread rate very slow (0–2 chains/hour); flame length low (1–4 feet); fine fuel load (0.5 ton/acre).
- iv. **TL4:** Moderate load. Spread rate very slow (0–2 chains/hour); flame length low (1–4 feet).
- v. **TL5:** High load conifer litter. Spread rate slow (2–5 chains/hour); flame length low (1–4 feet).
- vi. **TL6:** Moderate load. Spread rate moderate (5–20 chains/hour); flame length low (1–4 feet).
- vii. **TL7:** Heavy load, includes larger diameter downed logs. Spread rate low (2–5 chains/hour); flame length low (1–4 feet).
- viii. **TL8:** Long needle litter; long needle fuel. Spread rate moderate (5–20 chains/hour); flame length low (1–4 feet).
- ix. **TL9:** Very high load fluffy dead and downed fuel litter. Spread rate moderate (5–20 chains/hour); flame length moderate (4–8 feet).

6. Insufficient wildland fuel to carry wildland fire under any condition (Non-burnable)

- i. **NB1:** Urban or suburban development; insufficient wildland fuel to carry wildland fire.
- ii. **NB2:** Snow/ice.
- iii. **NB3:** Agricultural field, maintained in non-burnable condition.
- iv. **NB8:** Open water.
- v. **NB9:** Bare ground.

7. Activity fuel (slash) or debris from wind damage (blowdown) (Slash-Blowdown)

- i. **SB1:** Fine fuel load is 10 to 20 tons/acre, weighted toward fuels 1 to 3 inches diameter class, depth is less than 1 foot. Spread rate moderate (5–20 chains/hour); flame length low (1–4 feet).

Notes: Based on Scott and Burgan's (2005) 40 Fuel Model System.

Topography

Topography is important in determining fire behavior. Steepness of slope, aspect (direction the slope faces), elevation, and landscape features can all affect fuels, local weather (by channeling winds and affecting local temperatures), and rate of spread of wildfire.

Weather

Of the three fire behavior components, weather is the most likely to fluctuate, especially on a daily basis. Accurately predicting fire weather remains a challenge for forecasters. As downslope and upslope winds in the Sierra Nevada, along with rising temperatures, dry fuels in the spring and summer, conditions can deteriorate rapidly, creating an environment that is susceptible to wildland fire. It should be noted that the region also experiences a fire season in the winter. Fine fuels (grass and leaf litter) can cure rapidly, making them highly flammable in as little as 1 hour following changes in relative humidity. Low live fuel moistures of shrubs and trees can significantly contribute to fire behavior in the form of crowning and torching. With high wind, grass and shrub fires can spread rapidly, engulfing communities, often with limited warning for evacuation. The creation of defensible space is of vital importance in protecting

communities from this type of fire. For instance, a carefully constructed fuel break placed in an appropriate location could protect homes or possibly an entire community from fire. This type of defensible space can also provide safer conditions for firefighters, improving their ability to suppress fire and protect life and property.

One of the critical inputs for FlamMap is the fuel moisture files. The initial run of the Risk-Hazard Assessment utilized the IFTDSS Auto 97th modeling parameters, integrates historic fire weather data from nearby RAW stations.

3.3.4 FIRE BEHAVIOR MODEL OUTPUTS

The following is a discussion of the fire behavior outputs from IFTDSS.

Flame Length

Map C.2 in Appendix C illustrates the flame length classifications for Inyo County. Flame lengths are determined by modeling in the FlamMap system using the following inputs: fuels, weather, and topography. Flame length is a particularly important component of the Risk-Hazard Assessment because it relates to potential crown fire (particularly important in timber areas) and suppression tactics. Direct attack by hand lines is usually limited to flame lengths less than 4 feet. In excess of 4 feet, indirect suppression is the dominant tactic. Suppression using engines and heavy equipment will move from direct to indirect with flame lengths in excess of 8 feet.

Flame lengths across the county range from 0 to more than 25 feet. The highest flame lengths are associated with the timber and shrub fuels along mountainous landscapes and heavy riparian vegetation found near ditches and creeks.

Fireline Intensity

Map C.3 in Appendix C illustrates the predicted fireline intensity throughout the county. Fireline intensity describes the rate of energy released by the flaming front and is measured in British thermal units per foot per second (Btu/ft/sec). This is a good measure of intensity and is used for planning suppression activities. The expected fireline intensity throughout the county is similar in pattern to predicted flame length, as fireline intensity is a function of flame length.

Fireline intensity across the county ranges from 0 to over 6,175 Btu/ft/sec.

The pattern for fireline intensity is similar to flame length in that intensities range from very low (0 Btu/ft/sec) through moderate (100–500 Btu/ft/sec) to high and extreme (greater than 1,000 Btu/ft/sec), which tend to be associated with areas dominated by tall shrub and timber fuel loads. Fireline intensity impacts the strategies that fire responders can use to suppress the fire, with intensities over 1,000 Btu/ft/sec too severe for direct attack by hand or engine crews.

Rate of Spread

Map C.4 in Appendix C illustrates the rate of spread classifications for the county.

The rate of spread, or the speed at which fire is moving away from the point of origin, is influenced by the slope. Fire moves at a faster rate uphill than downhill, thus the steeper the slope the faster the rate of spread. Additionally, steep slopes bring the fuels above the fire closer to the flames and the head of the

fire, making them more susceptible to ignition. Another issue with steep slopes is the possibility of burning debris rolling down the hill and igniting fuel below the main fire. This is illustrated in Figure 3.2.

The rates of spread in the county range from 0 chains/hour to over 150 chains/hour (one chain is 66 feet and is a common measure in wildland firefighting). Low rates of spread are generally associated with timber-dominated areas, while moderate and high rates of spread are associated with grass and shrub fuels and riparian vegetation.

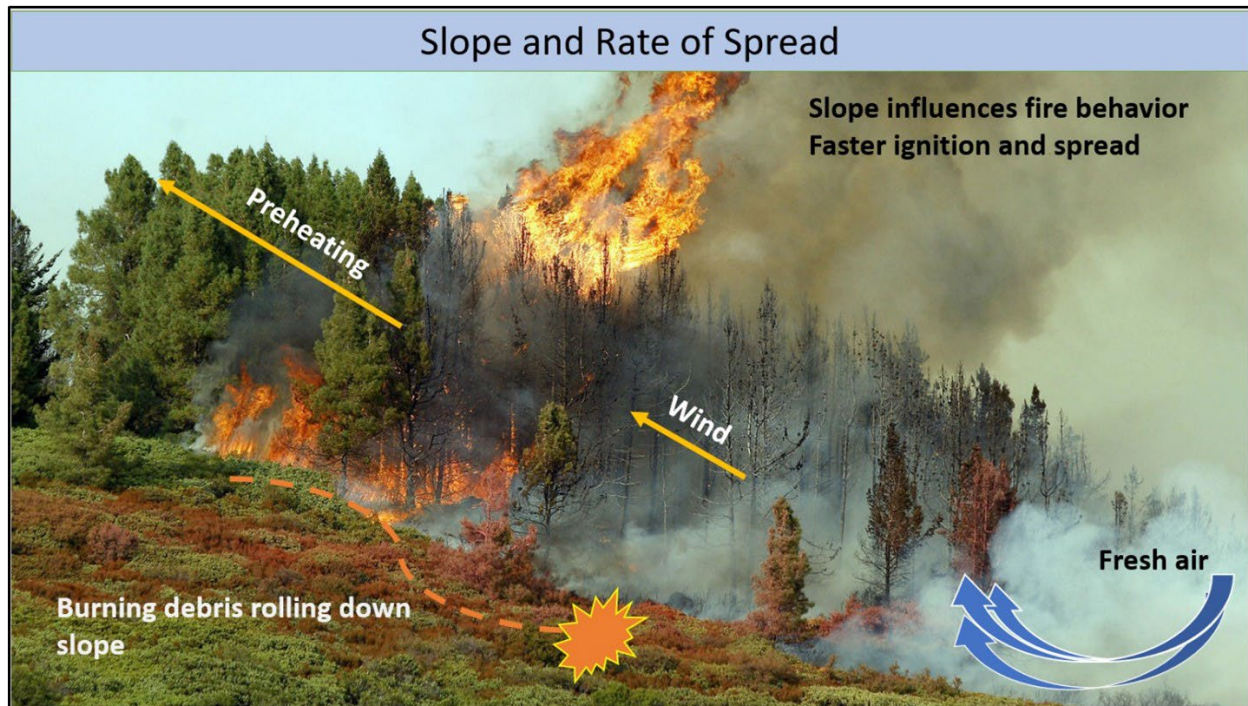


Figure 3.2. Effect of topography on fire behavior.

Crown Fire Potential

Map C.5 in Appendix C illustrates the range of crown fire activity from surface fire (in grass-dominated areas) to passive and active crown fire (in riparian fuel beds and areas with timber fuels).

Fire Occurrence/Density of Starts

Figure 2.8 in Chapter 2 illustrates the fire history for the county. These perimeters have been provided by the USFS and CAL FIRE and show the location of fires within the county from 1960 to 2021. Fire history data were used to determine the location where fires tend to occur more often. Map C.6 shows the density of fire events within the county and reveals a higher incidence of fire events in the western portion of the county, where timber fuels and human activity are abundant. The fire history map (see Figure 2.8 in Chapter 2) and fire occurrence density are used to provide information on areas where fires are prevalent and hence could be more prone to fire in the future.

Composite Risk-Hazard Assessment Model

All data used in the Risk-Hazard Assessment have been processed using ESRI ArcGIS Desktop and the ESRI Spatial Analyst Extension. Information on these programs can be found at <http://www.esri.com>. Data have been gathered from all relevant agencies, and the most current data have been used.

All fire parameter data sets have been converted to a raster format (a common GIS data format comprising a grid of cells or pixels, with each pixel containing a single value). The cell size for the data is 30 × 30 meters (98 × 98 feet). Each of the original cell values have been reclassified with a new value between 1 and 4, based on the significance of the data (1 = lowest, 4 = highest). Prior to running the models on the reclassified data sets, each of the input parameters have been weighted; that is, they are assigned a percentage value reflecting that parameter's importance in the model. We used the weighted sum raster overlay geoprocessing tool to stack each geographically aligned data set and evaluate an output value derived from each cell value of the overlaid data set in combination with the weighted assessment. In a Weighted Sum Model, the weighted values of each cell from each parameter data set are added together so that the resulting data set contains cells with summed values of all the parameters. This method ensures that the model resolution is maintained in the results and thus provides finer detail and range of values for denoting fire risk.

Composite Risk-Hazard Assessment Modeling Process

Our Composite Risk-Hazard Assessment uses various inputs, which can be categorized into hazard, threat, and values. These inputs contribute to a raster data layer that assesses risk through weighting and summation. Hazard data sets consist of historical weather data, topography, vegetation, and fuel regimes. Threat data sets encompass fire perimeters and fire history. Lastly, the values category includes data for the WUI, critical infrastructure, and natural, cultural, and socioeconomic assets.

SWCA utilized the IFTDSS application to generate a landscape file for the county, incorporating various LANDFIRE data sets (fuels, slope, elevation, and aspect) into a single layer (Figure 3.3). Core Team input was used to refine the fuels model, resulting in customized fire behavior outputs. Subsequently, in Esri ArcGIS Pro, SWCA combined the fire history, fire station, WUI, and highly valued resources and assets (HVRAs) data sets. Finally, to assess risk, a weighted sum raster process was conducted in ArcGIS Pro, assigning weights based on significance and Core Team input. All eight inputs were given equal weight (12.5%) due to their potential impact to wildfire risk (Table 3.5).

The distance from the nearest fire station(s) to the community typically determines fire response times. The WUI and HVRAs designate areas that constitute life, property, and critical infrastructure. Lastly, fire occurrence and fire behavior characteristics (crown fire activity, flame length, and rate of spread) determine where a fire is likely to occur and the type, intensity, and speed at which the fire will spread.

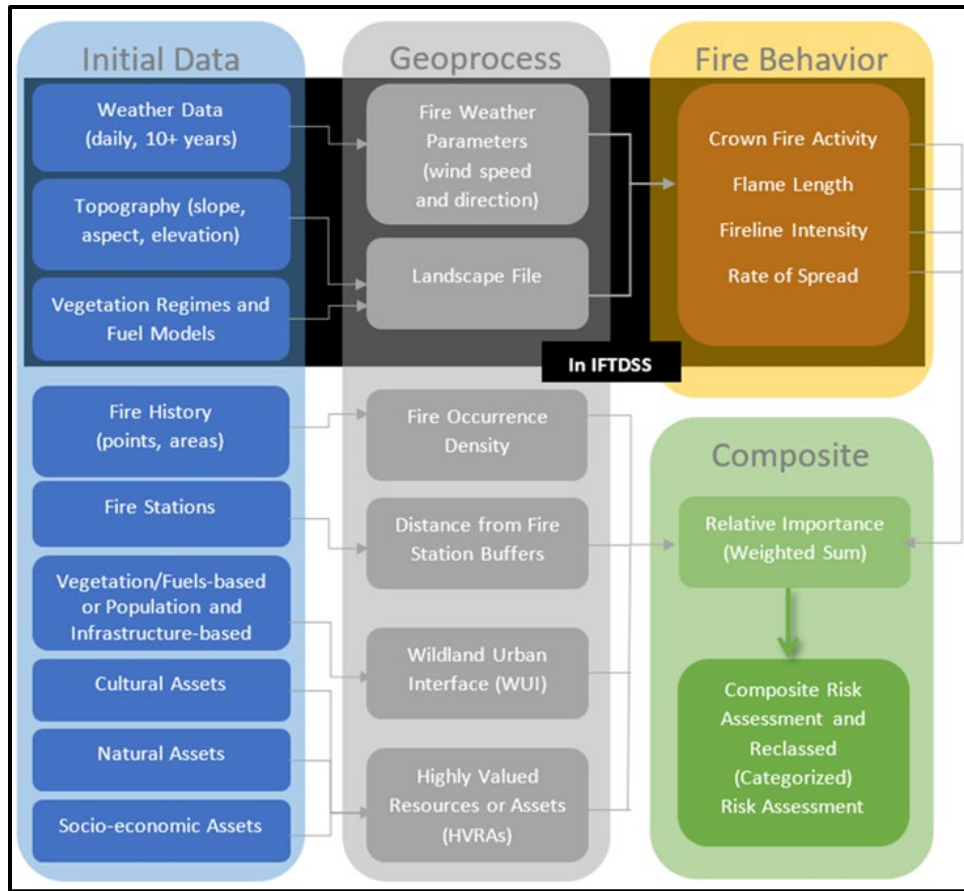


Figure 3.3. Composite Risk-Hazard Assessment breakdown.

3.4 COMPOSITE RISK-HAZARD ASSESSMENT RESULTS

Figure 3.4 and Table 3.5 illustrate the individual data sets and the equal weights assigned within the modeling framework. Table 3.5 also includes the data source that was used in the risk assessment. These include fire behavior parameters, HVRAs, WUI, fire history, and distance from fire stations. Figure 3.5 is the Composite Risk-Hazard Assessment for Inyo County and classifies the county into low, moderate, high, and extreme risk categories.

Overall, the Composite Risk-Hazard Assessment (see Figure 3.5) shows that high and extreme-risk areas are prevalent throughout the County. The highest concentration of extreme risk can be found in the northwestern sector of the county, along the timber dominant foothills of the eastern Sierra Nevada. Extreme risk can also be found along the U.S. 395 corridor, where population centers and other human activity interface with flammable fuels. Other areas of notable risk include the majority of tribal lands within the county, as well as several patches of fuels to the southeast. Table 3.6 lists the community areas by risk category. The high and extreme categories have been aggregated, as well as the low and moderate categories.

Moreover, discussions with local experts revealed that fires in the region are driven by strong west and southwest winds (and occasionally, north) and that the region has a history of fires along riparian corridors.

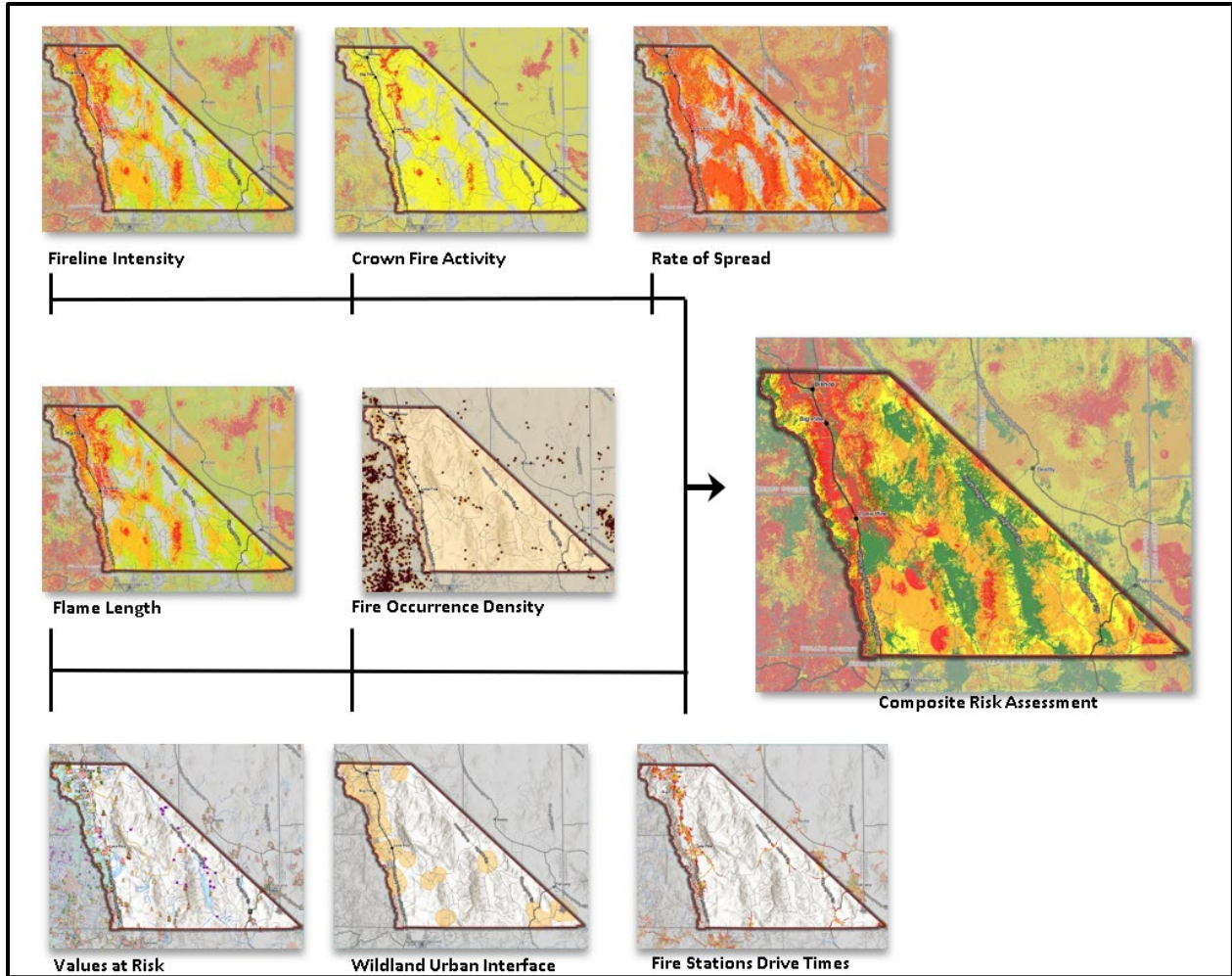


Figure 3.4. Composite Risk-Hazard Assessment overlay process.

Table 3.5. Risk Assessment Inputs, Sources, and Weights

Inputs	Source
Flame length	IFTDSS, LANDFIRE
Rate of spread	IFTDSS, LANDFIRE
Fireline intensity	IFTDSS, LANDFIRE
Crown fire activity	IFTDSS, LANDFIRE
Fire occurrence density	CAL FIRE
HVRAs	Inyo County GIS and IFTDSS
WUI*	Delineated according to fuels and topography
Distance from fire stations [†]	Fire stations from IFTDSS

*We used a 5-mile buffer based on Core Team guidance regarding wind, fuels, and topography in the region.

[†]Distance from fire stations was partitioned in 5-, 10-, and 15-minute drive time intervals; 5-minute (rated 0), 10-minute (rated 1), 15-minute (rated 2), and >15-minute rated a 3. We used the ESRI tool—generate service areas—and configured the analysis for access for emergency vehicles.

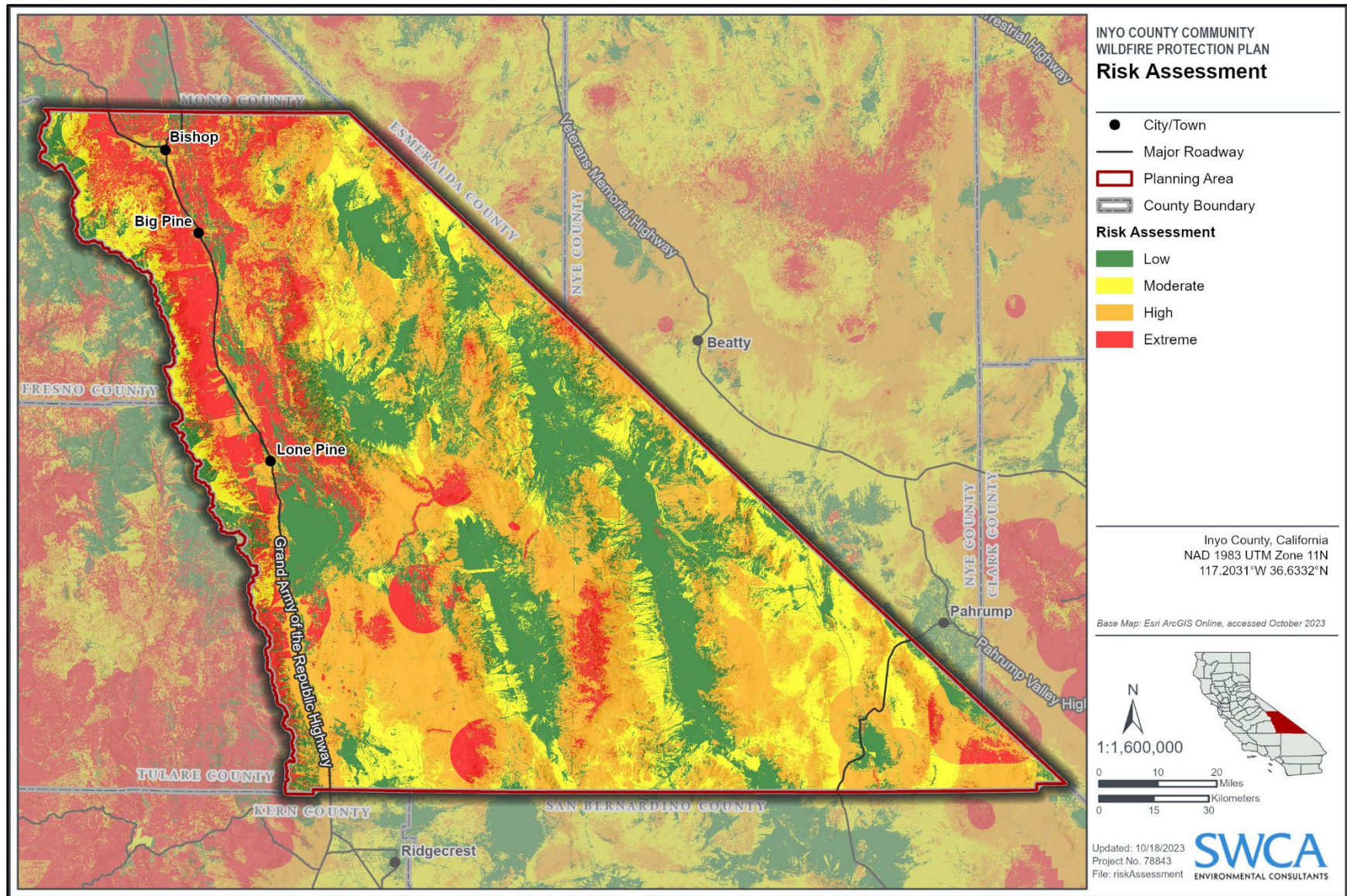


Figure 3.5. Composite Risk-Hazard Assessment.

Table 3.6. Community Area by Risk Category: Modeled Assessment Results

Community	Extreme + High Risk (% of community)	Low + Moderate Risk (% of community)
Birch Creek	96.7	3.3
Starlite	96.5	3.5
Homewood Canyon	95.6	4.4
Aberdeen	94.5	5.5
Glacier Lodge	94.0	6.0
Rovana/Round Valley	94.0	6.0
Keough Hot Springs	93.6	6.4
Seven Pines	93.2	6.8
Bishop Creek - Plant 4	92.7	7.3
Sage Flats	89.8	10.2
Walker Creek	89.0	11.0
Chipmunk Canyon	87.6	12.4
Granite View	87.6	12.4
Alabama Hills	85.0	15.0
Lone Pine Creek South	84.2	15.8
Old Wilkerson	82.1	17.9
Deep Springs	79.9	20.1
Rocking K	79.0	21.0
Pearsonville	78.9	21.1
Lone Pine Creek North	78.1	21.9
New Wilkerson	75.9	24.1
South Fork Bishop Creek	75.9	24.1
Laws	75.6	24.4
Mustang Mesa	74.6	25.4
Bishop Unincorporated	74.2	25.8
Cartago/Olancha/Grant	74.1	25.9
Aspendell	72.5	27.5
Olivas Ranch	68.8	31.2
Mt. Whitney Fish Hatchery	68.7	31.3
Big Pine	68.4	31.6
Lone Pine Paiute-Shoshone Reservation	67.7	32.3
Lone Pine	67.0	33.0
Charleston View	66.4	33.6
Oak Creek	64.0	36.0

Community	Extreme + High Risk (% of community)	Low + Moderate Risk (% of community)
Fort Independence	63.2	36.8
Bishop Paiute Reservation	60.5	39.5
Big Pine Paiute Reservation	59.7	40.3
Whitney Portal	58.5	41.5
Darwin	55.7	44.3
40 Acres	44.4	55.6
West Independence	43.3	56.7
East Independence	43.2	56.8
Tecopa	42.4	57.6
Shoshone	41.9	58.1
White Mountain Research Center	38.7	61.3
Rudolph Rd	37.2	62.8
Keeler	26.8	73.2
Panamint Springs	25.7	74.3
Furnace Creek/Timbisha-Shoshone Reservation	24.1	75.9

3.5 VALUES AT RISK

Earlier compilation of the critical infrastructure in the county, coupled with the community assessments, public outreach, and Core Team input, has helped in the development of a list of values at risk (VARs) from wildland fire. These data are also supplemented with HVRA data, which is a data set that is being gathered nationwide and available through the IFTDSS. The public was encouraged to provide additional VARs during the public outreach period.

In addition to critical infrastructure, VARs can also include natural, social, and cultural resources. It is important to note that although an identification of VARs can inform treatment recommendations, a number of factors must be considered in order to fully prioritize areas for treatment; these factors include appropriateness of treatment, land ownership constraints, locations of ongoing projects, available resources, and other physical, social, or ecological barriers to treatment.

The scope of this CWPP does not allow determination of the absolute natural, socioeconomic, and cultural values that could be impacted by wildfire in the county. In terms of socioeconomic values, the impact due to wildfire would cross many scales and sectors of the economy and call upon resources locally, regionally, and nationally.

3.5.1 NATURAL VALUES AT RISK

The county, with all its public lands, has a variety of natural resources of particular concern to land managers, such as rare habitats and listed plant and wildlife species (Map C.8 in Appendix C). Public outreach throughout the communities in the county has emphasized the importance of protecting natural/ecological values (Figure 3.6). Examples of natural values identified by the public and the Core Team include the following:

- Public land (e.g., Inyo National Forest, BLM land, Death Valley National Park)
- Trail systems (e.g., Baxter Pass, Mount Whitney Trail)
- Agricultural land
- Scenic viewsheds
- Wildlife habitat and sensitive species
- Watersheds and preservation of water quality for the communities
- Wilderness areas (e.g., John Muir Wilderness Area, Owens River Headwaters Wilderness Area, Death Valley Wilderness)
- Bishop Paiute Tribe Conservation Open Space Area (COSA)



Figure 3.6. Example of a natural VAR, North Fork Big Pine Creek.

3.5.2 SOCIOECONOMIC VALUES AT RISK

Social values include population, recreation, infrastructure, and the built environment (Figure 3.7; Map C.8 in Appendix C). Socioeconomic values are of heightened concern when the state of the local economy is partially dependent on said resource. For instance, the closure of designated campgrounds due to wildfires can reduce revenue generated by outdoor recreation. Please see Appendix G for information regarding wildfire smoke, evacuation due to wildfire, and other planning homeowner resources to better protect against wildfire hazards. Socioeconomic values include:

- Communications infrastructure (e.g., cell phone, weather stations, and radio towers)
- Public safety infrastructure
- Highways
- Amargosa Opera House
- Tribal administrative buildings
- Care homes, senior housing, day care, and other group homes
- Water storage tanks
- Water conduits and irrigation ditches
- Critical infrastructure (e.g., powerlines)
- Recreation sites, including:
 - Sage Flat campground
 - Big Pine Creek campground
- Tourism values, including:
 - Cardinal Lodge, restaurants
 - Tribal Travel Plaza and Casino



Figure 3.7. Example of a socioeconomic VAR, SCE hydropower plant.

3.5.3 CULTURAL VALUES AT RISK

Many historical landmarks are scattered throughout the county (Map C.8 in Appendix C). An example of a cultural VAR is displayed in Figure 3.8. Particular cultural VARs that have been identified by the Core Team and the public in Inyo County are the following:

- Historically significant sites
 - Bend City
 - Camp Independence
 - Bishop Creek Battleground
 - Historic Trails
- Cemeteries
- Churches
- Archaeological sites
- Historic and cultural landscapes of tribal significance
- Manzanar National Historic Site
- Alabama Hills National Scenic Area
- Tribal lands



Figure 3.8. Example of a cultural VAR, the Faith Community Church in Tecopa.

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This chapter provides project recommendations and implementation guidance. However, mitigation does not stop there. In addition to the recommendations, recognizing wildfire mitigation, preparedness, and resilience, means being prepared both pre- and post-fire. Post-fire response and rehabilitation information can be found in Appendix K.

This plan has been aligned with the Cohesive Strategy and its Phase III Western Regional Action Plan by adhering to the nationwide goal:

“To safely and effectively extinguish fire, when needed; use fire where allowable; manage our natural resources; and as a Nation, live with wildland fire.” (Forests and Rangelands 2014:3).

Thus, CWPP recommendations have been structured around the three main goals of the Cohesive Strategy: restoring and maintaining landscapes, fire-adapted communities, and wildfire response. Many of the recommendations listed can be implemented at the homeowner or community level. Projects requiring large-scale support can be prioritized based on the Composite Risk-Hazard Assessment.

Recommendation matrixes are used throughout this chapter to serve as an action plan for implementation. Recommendations have been aligned with the strategies in the 2021 California’s Wildfire and Forest Resilience Action Plan (California Forest Management Task Force [CA FMTF] 2021) wherever possible.



4.1 COHESIVE STRATEGY GOAL 1: RESTORE AND MAINTAIN LANDSCAPES

Goal 1 of the Cohesive Strategy and the Western Regional Action Plan is Restore and Maintain Landscapes: Landscapes across all jurisdictions are resilient to fire and other disturbances in accordance with management objectives.

“Sustaining landscape resiliency and the role of wildland fire as a critical ecological process requires a mix of actions that are consistent with management objectives. The West will use all available methods and tools for active management of the landscape to consider and conserve a diversity of ecological, social, and economic values. The West will coordinate with all partners and seek continued stakeholder engagement in developing market-based, flexible and proactive solutions that can take advantage of economies of scale. All aspects of wildland fire will be used to restore and maintain resilient landscapes. Emphasis will be placed on protecting the middle lands near communities.” (Western Regional Strategy Committee [WRSC] 2013:14).

In this CWPP, recommendations to restore and maintain landscapes focus on vegetation management and hazardous fuel reduction.

The federal, state, and LADWP lands surrounding the region have been home to an active fuel treatment program by land managers for many years. Figure 4.1 shows existing fuel treatments that have been completed or are in progress in and around the county. This information is derived from the relevant agencies. The reader is referred to agency websites and the [Federal Register](#) for the latest information on planned or ongoing actions on adjacent public land. The treatment momentum already observed around the county should be built upon to increase fuel treatment effectiveness across the landscape.

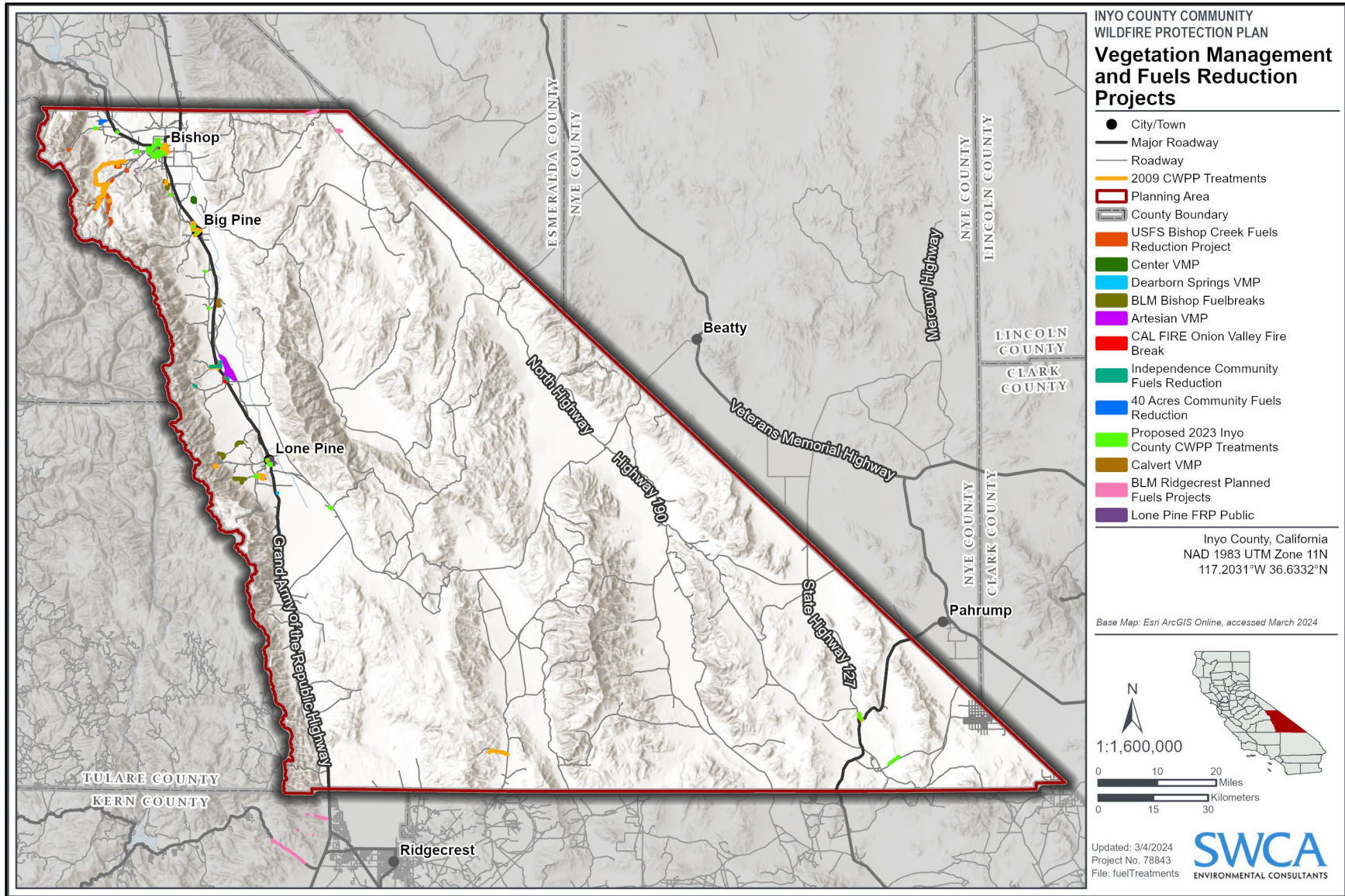


Figure 4.1. Ongoing, planned, and proposed fuels treatments in Inyo County. Detailed maps of fuels projects in the county are shown in Maps C.16 through C.20 in Appendix C.

4.1.1 RECOMMENDATIONS (PROPOSED PROJECTS) FOR HAZARDOUS FUEL REDUCTION

Fuels management of public and private land in the WUI is key to the survival of homes during a wildfire event, as well as the means to meet the criteria of Goal 1. Research has shown how fuel treatments in the WUI can change fire behavior to support suppression activities and protect homes (Evans et al. 2015). The importance of fuels management is reflected in policy at the federal level, with the HFRA requiring that federal land management agencies spend at least 50% of their fuels reduction funds on projects in the WUI.

Fuels should be modified with a strategic approach to reduce the threat that high-intensity wildfires pose to lives, property, and other values. This section provides information on fuel treatment methodologies that can be applied to protect structures (defensible space) as the top priority, then near community boundaries (fuel breaks, cleanup of adjacent open spaces), and finally in the wildlands beyond community boundaries (larger-scale forest health and restoration treatments). The emphasis of each of these treatment types is unique. Proximate to structures, the recommendations focus on reducing fire intensity and fire spread rates consistent with Firewise and International Fire Code standards. Further into open space areas, treatments tend to emphasize forest health and increasing resiliency to catastrophic wildfire and other disturbances.

Table 4.1 summarizes the types of treatments recommended (proposed) throughout the county. The majority of the treatments are focused on higher risk areas, as defined by the Composite Risk-Hazard Assessment and Core Team input. Many of these treatment recommendations are general across the communities because similar conditions occur in those areas. Tables 4.1, 4.2, and 4.3 also address the requirement for an action plan and assessment strategy by providing monitoring guidelines and a timeline for implementation. This timeline is obviously dependent on available funding and resources, as well as National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) protocols for any treatments pursued on public land.

Figures 4.2 and 4.3 show the CEQA process for California Vegetation Treatment Program (CalVTP) implementation and the CalVTP treatable landscape, respectively. It should be noted that the CalVTP process is not necessarily restricted to the treatable landscape. Lands outside of the treatable landscape area may also qualify with proper paperwork and justification. The CalVTP Final Programmatic Environmental Report is also applicable to projects at least partially within the SRA, including projects on private land, if they receive state or local government grants for vegetation treatment. It should also be noted that CalVTP is not the only option available to comply with CEQA requirements; project-specific negative declarations or mitigated negative declarations may also be employed.

When applying fuel treatments, every effort should be made to align treatments with the State Forest Action Plan Assessment and Strategy (CAL FIRE 2018a, 2018b) with consideration of all appropriate best management practices and sound science. In addition, treatments should be strategically located in areas to maximize effectiveness of other existing and ongoing projects (see Figure 4.1). A compilation of detailed descriptions of fuels treatment types and methods, including defensible space practices and larger-scale landscape projects, is housed in Appendix J.

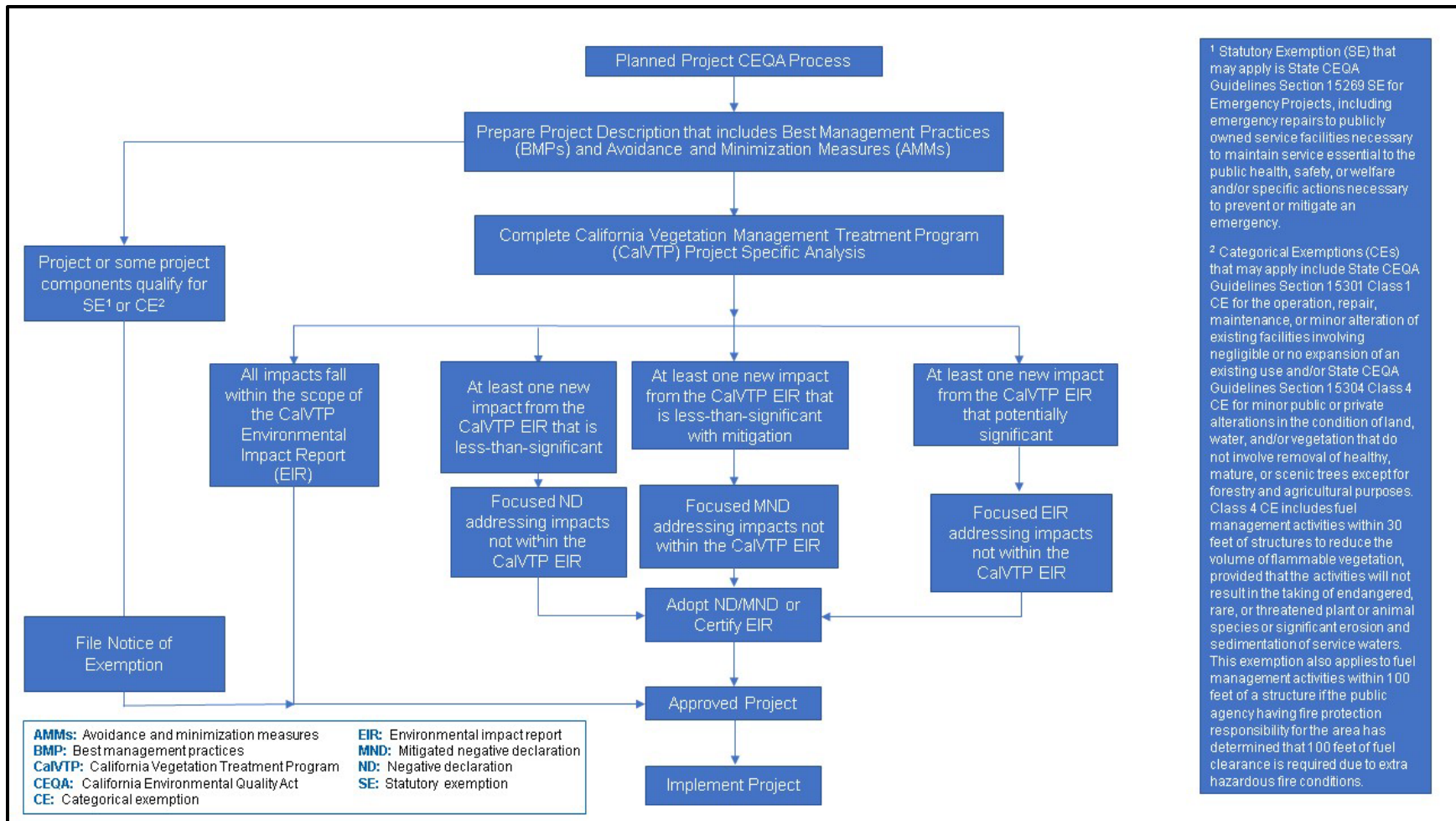


Figure 4.2. CEQA process for CalVTP implementation.

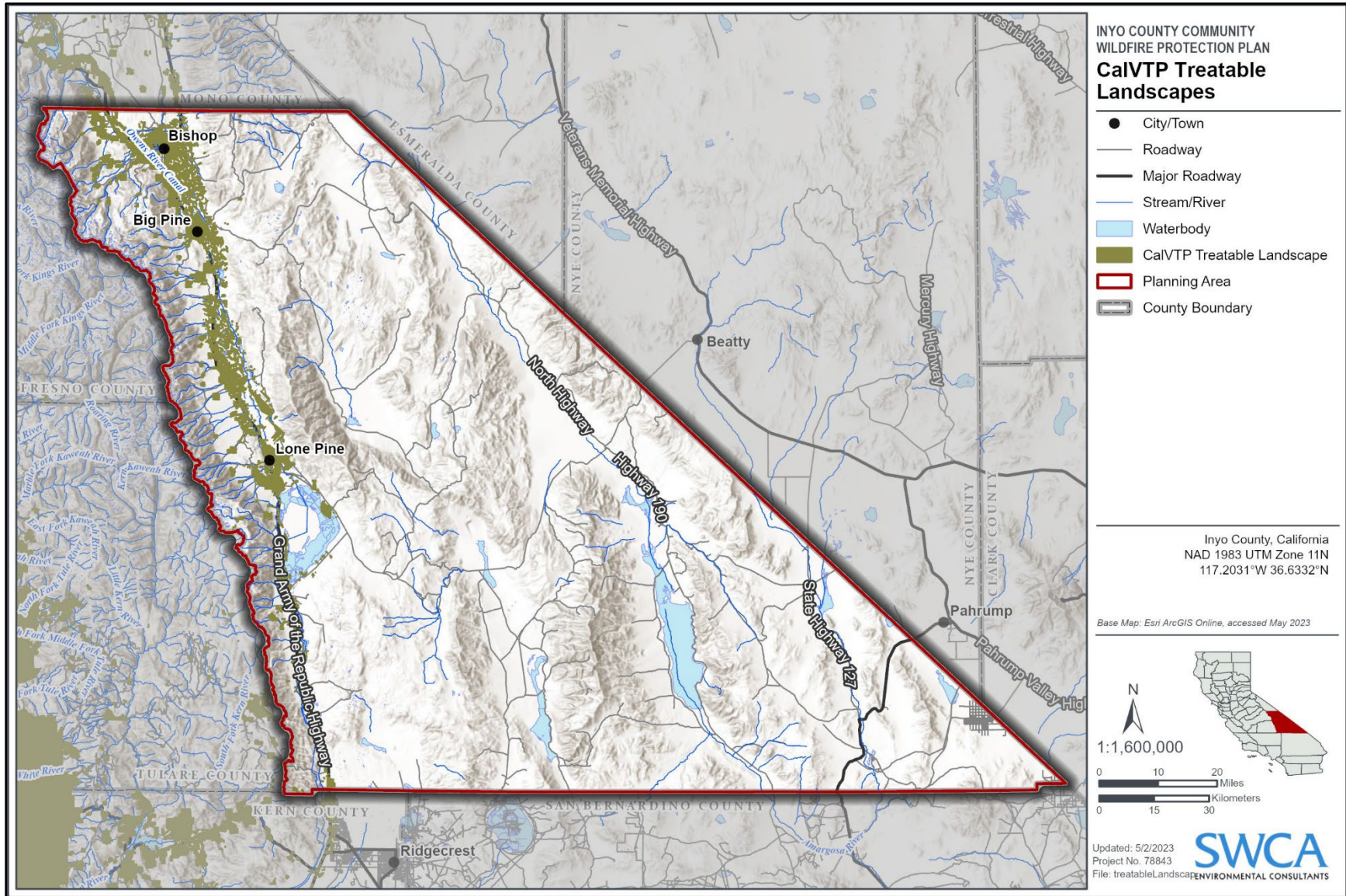


Figure 4.3. CalVTP treatable landscape.

When possible, simultaneously planning for the management of multiple resources while reducing fuels will ensure that the land remains viable for multiple uses in the long term. The effectiveness of any fuel reduction treatment depends on the degree of maintenance and monitoring that is employed. Monitoring will also ensure that objectives are being met in a cost-effective manner.

The treatment list is by no means exhaustive and serves to provide a baseline of required projects for the future management of the county. Many projects may be eligible for grant funds available from federal and/or state sources. For a list of funding sources, please refer to Appendix F.

Integration and Alignment with Existing Land Management Objectives

In order to maximize the effectiveness and efficiency of fuels reduction projects proposed within this CWPP, it is essential to ensure alignment and integration, whenever possible, with existing land management objectives, strategies, and projects from the various land-owning agencies involved. Project planning should consider the diverse goals and strategies of these agencies, which encompass a wide range of initiatives such as rangeland improvement, water quality protection, ecosystem restoration, and invasive species management. To assist in strategic and broad-scale planning, watershed and USFS's Potential Operational Delineations maps are provided in Appendix C and USFS's Fire Management Zones are provided in Appendix A.

Various agencies employ distinct land management strategies to address wildfire risks and promote ecosystem resilience. The California state government and the federal government, through a shared stewardship agreement, have committed to treating a million acres of land annually, fostering cooperative forest management, and emphasizing sustainable practices like prescribed fire. CAL FIRE categorizes FHSZs and seeks to protect communities in high-risk areas. Inyo National Forest is using a strategic approach to manage fire across four zones, focusing on community protection, wildfire prevention, ecological restoration, and controlled burns. Death Valley National Park employs a suppression-based strategy. The BLM oversees lands in the region through various field offices, each with its unique resource management plans, which emphasize multiple-use, ecological preservation, and wildfire prevention. The BLM also collaborates with other agencies and considers a range of tools, including mechanical, biological, chemical, and prescribed fire treatments to reduce wildfire risks and protect communities.

LADWP is open to developing agreements that permit communities, fire safe councils, and private landowners to create and maintain fuels management projects on LADWP property; key information must be submitted for consideration. This includes a project description with a timeline, a location map, and the name of the responsible entity, person, or group, particularly concerning liability insurance if required.

In addition, the Potential Operational Delineations (PODs), developed by the Rocky Mountain Research Station's Wildfire Risk Management Science Team, are spatial units that provide local land managers with a structured framework for proactively planning for wildfires on a landscape scale. PODs facilitate the alignment of local fire expertise with advanced spatial analytics, enabling fire managers to collectively understand risks, identify management opportunities, and define their fire management objectives.

To learn more about PODs and their application within the county, please see Appendix A.

Ongoing and Proposed Fuels Treatments in the Planning Area

As previously stated, fuel treatments are an effective means of reducing fire risk to communities in the WUI. Fuel treatments such as mastication, thinning, targeted grazing, prescribed burning and removal of dead woody material serve to reduce fuel loading and will diminish potential fire behavior. For example,

reducing ladder fuels minimizes transmission of fire from the surface into the crowns, and tree thinning increases the distance between tree crowns, which will help reduce the potential for crown fires and extreme fire behavior. In addition, fuels treatments enhance firefighter safety and increase the efficiency of fire suppression actions.

CAL FIRE, BLM, and USFS have been proactive in planning and implementing fuel breaks within the county. LADWP has also developed agreements that permit communities, fire safe councils, and private landowners to create and maintain fuels management projects on LADWP property. Community perimeter fuel breaks have been strategically placed to protect structures and other valuable resources. Figure 4.1 above shows the ongoing and proposed fuels reductions projects in the county. Figures 4.5 and 4.6 show recent fuel breaks in the communities of Aberdeen and Big Pine.

The cleared area (fuel break) around Aberdeen (Figure 4.4), established in the late 1990s, is a component of the Aberdeen business lease with LADWP. Additionally, the cleared area around along the northern edge of Big Pine (Figure 4.5), in place since the 1980s, coincides with the initial construction of the Knight Manor community. These types of fuel breaks, commonly found around communities in the Owens Valley, often result from CAL FIRE operations during wildfire responses. Bulldozed firelines are created to protect life and property, and rehabilitation efforts are undertaken after the fire is suppressed. In some cases, these areas may be slow to naturally revegetate or are maintained by adjoining property owners as defensible space.

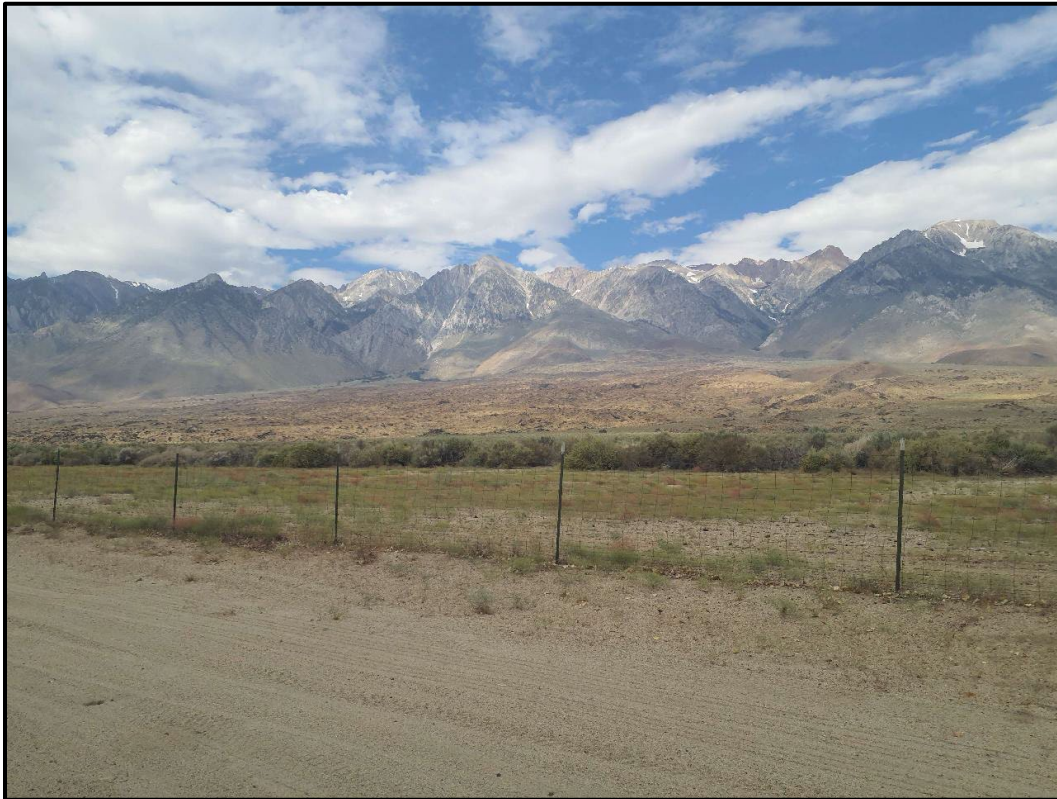


Figure 4.4. Perimeter fuel break along the western edge the Aberdeen community.



Figure 4.5. Perimeter fuel break on the north end of Big Pine.

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Table 4.1. Recommendations (Proposed Projects) to Create Resilient Landscapes (Fuel Treatments)

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #1		H	Ongoing	Sustain maintenance of existing fuel breaks and progress with execution of planned fuel breaks	Inyo County	BLM, CAL FIRE, USFS, NPS, CDFW, LADWP, Edison, tribes	<ul style="list-style-type: none"> Implement a routine maintenance schedule and inspection schedule for existing fuel breaks to ensure their effectiveness <ul style="list-style-type: none"> Maintain existing fuel breaks according to vegetation conditions Investigate prescribed grazing through pilot projects Execute planned fuel break projects according to established timelines and priorities Collaborate with relevant agencies, organizations, and communities to ensure project success Integrate the mitigation of hazards, such as dead or diseased trees, into fuel break maintenance plans Assess if existing fuel breaks on national forest and BLM lands are sufficiently wide to be effective; expand fuel breaks where needed 	Provide continued effectiveness of previously installed fuel breaks	Regular evaluations and maintenance needed to keep fuel break effectiveness	<ul style="list-style-type: none"> USFS CWDG Grants CAL FIRE Grant Programs FEMA BRIC Grants California Fire Safe Council Grants Landscape Scale Restoration Competitive Grant Program Inyo County general fund
RL #2		H	Spring 2025	Strategically install fuel breaks countywide in accordance with risk assessment findings	Inyo County	BLM, CAL FIRE, USFS, NPS, CDFW, LADWP, private landowners, tribes	<ul style="list-style-type: none"> Install fuel breaks in high-risk areas and prioritize underserved, remote, and isolated areas. Potential fuel break locations include: <ul style="list-style-type: none"> Along community perimeters Perpendicular to average wind direction in vulnerable areas Along rights-of-way, including evacuation corridors Along riparian corridors that lead into communities, strategically reducing ladder fuels and breaking up fuel continuity Areas that support protection of the WUI Areas that increase fire responder safety Communities surrounded by steep topography and heavy fuels Around critical infrastructure and facilities Along strategic ridge tops Look for opportunities to expand or tie into existing fuel breaks for improved effectiveness Assess opportunities to implement fuels reduction projects to align with Potential Operational Delineations (PODs) and/or USFS's Strategic Fire Management Zones 	Provide access to fire personnel Establish fuel breaks and fire containment lines Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI Protect communities and critical infrastructure and facilities	Regular evaluations and maintenance needed to keep fuel break effectiveness	<ul style="list-style-type: none"> USFS CWDG Grants CAL FIRE Grant Programs FEMA BRIC Grants California Fire Safe Council Grants Landscape Scale Restoration Competitive Grant Program
RL #3		H	Spring 2025	Collaborate with LADWP to manage fuel loads on unmaintained properties	Inyo County	Inyo County, LADWP, CAL FIRE, NRCS, Inyo-Mono Resource Conservation District (IMRCD)	<ul style="list-style-type: none"> Inyo County to continue working with LADWP and act as a link between property owners and LADWP to manage fuel loads on LADWP owned and/or leased lands Inyo County and LADWP to ensure that vegetation management requirements in the LADWP lease agreements are being met In cases where properties violate county ordinance and the property lessee is absent, Inyo County shall contact LADWP to inform them about the situation Continue to partner with CAL FIRE to implement prescribed burns to improve health of rangelands 	Protect life and property by mitigating fuels. Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI.	Follow up with post-treatment stabilization practices. Arrange a standing multi-agency meeting each year to review accomplishments and address future needs Annual updates and maintenance, including site visits	<ul style="list-style-type: none"> Firewise Grants BRIC Fire Prevention and Safety (FP&S) Grants (FEMA) Community Wildfire Defense Grants (CWDG)

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #4		M	Winter 2024	Establish and maintain a centralized database of organizations, including nonprofit organizations, fire mitigation groups, and land managers for collaborative fuels reduction initiatives to act as project sponsor	Inyo County	Inyo County, Whitebark Institute (the Institute can assist since they already have much of this information)	<ul style="list-style-type: none"> Identify the specific areas and aspects of fuels work where organizations can potentially collaborate <ul style="list-style-type: none"> Categorize organizations based on their expertise and resources Establish relationships with existing organizations who work on such projects Connect with other nonprofits in the region to explore opportunities Facilitate resource sharing between organizations and relevant county agencies, including personnel and funding opportunities Make the centralized list easily accessible to relevant county agencies, fire departments, and community stakeholders Host networking events or workshops that bring together organizations and county stakeholders to foster engagement and collaboration Encourage community members to participate in or support organization-led projects Work on standardizing indemnification or "hold harmless" language to facilitate on the ground efforts Collaborate and share information and resources with Mono County Kern County needs to be added on the south end of Inyo; they are our closest resources. Sage Flats area needs to be monitored. Create a QR code system for incoming fire resources to access maps of water sources on all lands and other relevant information. Consider including roads, town boundaries, and relevant infrastructure. 	Enhance wildfire preparedness and community wildfire resilience Reduce fuel continuity within communities and create resilient landscapes	Regular maintenance and review of effectiveness	<ul style="list-style-type: none"> USFS CWDG Grants CAL Fire Grant Programs FEMA BRIC Grants California Fire Safe Council Grants NFPA Firewise Grants
RL #5		M	Fall 2024	Identify and execute watershed-scale ecosystem projects cross jurisdictions (i.e., private, federal, tribal, state) to enhance wildfire resilience, wildlife habitat, and water quality		Inyo County, LADWP, USFS, BLM, CDFW, CAL FIRE, NPS, tribes, NRCS, IMRCD, ESCOG, SCE, Whitebark Institute	<ul style="list-style-type: none"> Collaborate with agencies, environmental organizations, and community stakeholders to design and implement integrated riparian fuel reduction projects Develop comprehensive project plans that outline specific mitigation strategies and ecological restoration goals Utilize a combination of fuel reduction methods tailored to riparian areas, including prescribed burns, mechanical thinning, debris removal, chipping, and targeted vegetation management <ul style="list-style-type: none"> Ensure that mitigation efforts comply with environmental regulations and best practices to minimize ecological impacts Build on the riparian maintenance documentation to streamline environmental review and permitting. Integrate restoration practices that promote water quality, soil health, and native vegetation recovery Assess and prioritize watersheds based on: <ul style="list-style-type: none"> Wildfire risk Presence of sensitive species Watershed health Develop and implement a monitoring program to track the effectiveness of fuel reduction and restoration projects Partner with Mono County for regional watershed projects 	Reduce hazardous fuels throughout the county. Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI. Ensure the protection of vulnerable ecosystems and values at risk	Maintenance and updates as needed	<ul style="list-style-type: none"> CAL FIRE Forest Health Grants CalEPA Loans and Grants USFS CWDG California Climate Investments Fire Prevention Grant Program (CAL FIRE) Landscape Scale Restoration Competitive Grant Program

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #6		M	Spring 2025	Conduct a community assessment to gauge interest in establishing a prescribed burn association	Inyo County	Inyo County, Mono County, local fire safe councils, Great Basin Unified Air Pollution Control District, CAL FIRE, BLM, USFS, local fire departments	<ul style="list-style-type: none"> Conduct an initial study to gauge interest in prescribed burning Collaborate with regional resource conservation districts Raise awareness of benefits for prescribed fire and cultural burning as ecological practices that can control invasive species and increase wildfire resilience <ul style="list-style-type: none"> Partner with local experts, universities, environmental organization, fire departments, and other agencies to create a framework for the use of prescribed fire for invasive species management Develop educational materials and demonstrations Increase awareness of fire as a means to promote traditional foods and medicines Establish a partnership with Mono County to form a regional prescribed burn association 	Enhance regional landscape resiliency Streamline prescribed burn projects Reduce hazardous fuel loading Potentially restore landscapes Improve understanding of CAL FIRE policy that guides prescribed fire on private lands	Ensure open communication with public Maintenance and updates as needed	<ul style="list-style-type: none"> CAL FIRE Grant Programs USFS CWDG Grants California Fire Safe Council Grants
RL #7		H	Spring 2025	Collaborate with tribal governments and organizations to identify and implement wildfire resilience and ecosystem restoration projects aligned with tribal land management objectives and stewardship	Inyo County	Inyo County, tribal governments and organizations, CAL FIRE, BLM, LADWP, USFS, NPS, Whitebark Institute	<ul style="list-style-type: none"> Develop projects collaboratively with tribal leaders to ensure that efforts are in alignment with tribal land management goals and objectives Develop formal agreements and partnerships between the county, land management agencies, and tribal governments and organizations to outline shared objectives and responsibilities Conduct assessments of tribal lands and adjacent areas to identify vulnerable areas and ecosystems in need of restoration Share resources, knowledge and expertise between county agencies, land management agencies, and tribal groups to enhance effectiveness of projects Provide training and education programs that enhance the capacity of tribal governments and organizations and local communities in wildfire mitigation, ecosystem restoration, and cultural preservation Develop monitoring programs to track the progress and outcomes of restoration projects Foster community engagement and participation in wildfire resilience and ecosystem restoration by involving tribal and non-tribal land community members Promote public awareness and inclusivity in wildfire resilience and restoration projects by highlighting the cultural and ecological significance of tribal lands Collaborate with Mono County for regional projects 	Establish cohesive planning with tribal management approaches and tribal values	Continued communication and collaboration with tribal governments, organizations and members Regular evaluations and maintenance	<ul style="list-style-type: none"> CAL FIRE Forest Health Grants CalEPA Loans and Grants USFS CWDG California Climate Investments Fire Prevention Grant Program (CAL FIRE) Landscape Scale Restoration Competitive Grant Program Regional Forest and Fire Capacity Grant Program

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #8		M	Fall 2025	Expedite completion of post-fire recovery projects for community safety and environmental resilience		USFS, BLM, NPS, Bureau of Indian Affairs	<ul style="list-style-type: none"> Conduct an inventory of USFS post-wildfire recovery projects that remain incomplete Prioritize the identified projects based on their significance for ecosystem objectives, community safety, environmental restoration, and long-term resilience Collaborate with local and regional partners, including nonprofits and volunteer organizations to supplement staffing and resources Coordinate with relevant agencies, such as state and county authorities, to streamline approval and execution of high-priority projects Address immediate safety concerns by prioritizing hazard tree mitigation and road maintenance projects to minimize potential post-fire hazards Focus on ecological restoration, including post-fire planting in non-forested areas, to aid in habitat recovery and environmental resilience Work with Mono County where applicable 	<p>Aid in restoration and rehabilitation of landscape impacted by wildfire</p>	<p>Regular monitoring of post-fire environment.</p> <p>Committed long term effort to tracking post-wildfire recovery and assessing post-wildfire risks.</p> <p>Assessment of WUI and watersheds at risk in the post-fire environment</p>	<ul style="list-style-type: none"> Environmental Quality Incentives Program (EQIP) Red Cross: Disaster Relief and Recovery Services Red Cross Before, During & After Wildfire CAL FIRE Forest Health Grants CalEPA Loans and Grants Landscape Scale Restoration Competitive Grant Program Department of Interior funding for post-wildfire burn area rehabilitation and restoration
RL #9		M	Fall 2025	Integrate and enhance the countywide invasive species management program with other relevant fire, land, and vegetation management plans and programs	Inyo County	Inyo County, BLM, NPS, USFS, CAL FIRE, CDFW, LADWP	<ul style="list-style-type: none"> Synchronize planning objectives between the invasive species management program with other fire, land, and vegetation management plans Conduct a study to identify the extent and impact of invasive species, and identify and prioritize projects throughout the county Prioritize invasive species based on their threat to ecosystems, wildfire risk, and water resources Implement control measures tailored to each invasive species, which may include herbicide application, controlled burns, mechanical removal, and biological control Engage local communities in invasive species management efforts, encouraging residents to participate in removal and reporting Support research and monitoring programs to better understand invasive species' behavior and develop more effective control strategies Collaborate with state and federal agencies to access resources, expertise, and grant opportunities for invasive species management Conduct public education campaigns to inform the residents about the negative impacts of invasive species and the importance of their control <ul style="list-style-type: none"> Increase awareness that the spreading of water in wet years by LADWP increases invasive species growth. In the areas that are dry most times of the year. Collaborate with Mono County for cross county efforts 	<p>Ensure the protection of vulnerable ecosystems</p> <p>Create and restore resilient landscapes</p>	<p>Revise and review strategy on an annual basis</p> <p>Track yearly progress</p>	<ul style="list-style-type: none"> USFS CWDG Grants FEMA BRIC Grants CalEPA Loans and Grants CAL FIRE Forest Health Grants Landscape Scale Restoration Competitive Grant Program

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #10		H	Winter 2024	Enhance green waste disposal capacity: acquire additional chipping equipment and explore curtain burners to efficiently manage green waste disposal	Inyo County	Inyo County, USFS, BLM, CAL FIRE	<ul style="list-style-type: none"> Conduct an assessment of the volume and types of green waste generated through fuels reduction in the county to determine disposal needs Procure additional chippers to enhance green waste disposal capacity Conduct a feasibility study for the use of curtain burners to manage green waste, evaluating safety, environmental impact, and cost-effectiveness Explore options for expanding waste disposal sites, ensuring accessibility where it's most needed Engage the community in discussions about green waste disposal, gathering input on preferences and addressing concerns Allocate necessary resources and funding to support the acquisition of equipment Initiate pilot programs to test the effectiveness of different green waste disposal methods and collect data for decision-making Establish a partnership with Mono County for enhanced resource sharing and allocation Use green waste as part of garden mulch process to enhance poor soil conditions 	<p>Reduce fuel loading and continuity within and around communities</p> <p>Enhance regional landscape resiliency</p>	<p>Revise and review strategy on an annual basis</p> <p>Track yearly progress</p>	<ul style="list-style-type: none"> USFS CWDG Grants FEMA BRIC Grants CalEPA Loans and Grants CAL FIRE Forest Health Grants CAL FIRE Grant Programs
RL #11		M	Fall 2025	Manage vegetation around and within communities throughout the county	Inyo County	LADWP, Inyo County, CAL FIRE, CDFW, USFS, BLM, Tribes	<ul style="list-style-type: none"> Continue and expand upon successful vegetation management efforts, particularly mowing around community perimeters to maintain defensible space <ul style="list-style-type: none"> Expand and improve efforts and engagement in tribal lands Collaborate with tribes and communities to prioritize areas for vegetation management, ensuring alignment with tribal and community needs Conduct public outreach to keep residents informed about ongoing projects and their benefits Allocate necessary resources and funding to support the continuation and expansion of these projects Explore innovative methods, such as BurnBox, to minimize risk and costs of controlled burns and to increase workforce capacity Look for opportunities to use goats and burn piles in the rain and snow. 	<p>Protect life and property by mitigating fuels.</p> <p>Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI.</p>	<p>Follow up with post-treatment stabilization practices.</p> <p>Arrange a standing multi-agency meeting each year to review accomplishments and address future needs</p> <p>Annual updates and maintenance</p>	<ul style="list-style-type: none"> Firewise Grants BRIC Fire Prevention and Safety (FP&S) Grants (FEMA) Community Wildfire Defense Grants (CWDG) Landscape Scale Restoration Competitive Grant Program

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #12		H	Fall 2025	Hazard Tree and Vegetation Survey and Mitigation: Survey and inventory of hazard trees, and areas of overstocked dense vegetation, focusing on high-risk areas, to guide targeted efforts for tree removal, maintenance, and risk reduction, enhancing community and firefighter safety and wildfire resilience	Inyo County	USFS, BLM, NPS, LADWP, SCE, CAL FIRE	<ul style="list-style-type: none"> Initiate a comprehensive survey and inventory of hazard trees (dead and dying trees) throughout the county throughout all jurisdictions (i.e., private, state, and federal land) Compile, centralize and share existing information on hazard trees <ul style="list-style-type: none"> Create a data hub to facilitate information and data sharing between agencies Prioritize the assessment of high-risk areas (e.g., communities, roadways, and recreational sites) and where hazard trees are known to pose an immediate threat Gather data on the location, species, conditions, and proximity to infrastructure and buildings of identified hazard trees Create a detailed map and database to record and store information on hazard trees, ensuring accessibility across agencies Classify hazard trees into different risk categories to guide mitigation efforts, focusing on the most urgent cases Develop a hazard tree mitigation plan that outlines strategies for tree removal, maintenance, or treatment <ul style="list-style-type: none"> Outline responsibilities between collaborating agencies Develop and implement a monitoring system to track the progress of hazard tree mitigation projects and share results to stakeholders and the public 	Create resilient landscapes and address potential trees and stands that may contribute to extreme wildfire behavior	Regular reassessment and post-treatment monitoring	<ul style="list-style-type: none"> USFS CWDG Grants CAL FIRE Grant Programs FEMA BRIC Grants California Fire Safe Council Grants NFPA Firewise Grants Regional Forest and Fire Capacity Grant Program
RL #13		H	Ongoing	Continue to support implementation of projects identified in the Independence and 40 Acres CWPPs	Independence and 40 Acres	Refer to the Independence and 40 Acres CWPPs	<ul style="list-style-type: none"> Refer to the Independence and 40 Acres CWPPs 	Protect life and property through effective wildfire management. Establish cohesive planning approach with regard to wildfire management.	Annual maintenance and updates to materials	<ul style="list-style-type: none"> Community Planning Assistance for Wildfire (CPAW) BRIC FP&S Firewise grants California Fire Safe Council Grants Regional Forest and Fire Capacity Grant Program Landscape Scale Restoration Competitive Grant Program
RL #14		M	Ongoing / as needed	Post-rainfall fuel loading assessment: evaluate fuel loading in high-risk areas, including main access points and community perimeters, after heavy rainfall events	High-risk areas in Inyo County	Inyo County, USFS, CAL FIRE, BLM, LADWP	<ul style="list-style-type: none"> Gather data on the type, quantity, density, and conditions of annual fuels present in these areas to determine potential wildfire risks Classify fuel loading based on risk levels, prioritizing areas that pose the greatest threat to communities Revisit existing fuel breaks to determine if maintenance is needed 	Enhance public safety, improve wildfire response, and limit size of wildfires Evaluate capacity to address vegetative growth and increased fire risk	Updates and enforcements to codes as necessary Perform regular inspections	<ul style="list-style-type: none"> Community Wildfire Defense Grants (CWDG) National Fire Plan (NFP) Grants Building Resilient Infrastructure and Communities (BRIC) California Fire Safe Council Grants Regional Forest and Fire Capacity Grant Program

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #15		L	Fall 2027	Re-run the wildfire risk assessment with calibrated fuel types and at a higher resolution	Highest risk communities	Inyo County OES, USFS, BLM, CAL FIRE	<ul style="list-style-type: none"> Execute the risk assessment at the community scale, focusing on high-risk communities Investigate companies or organizations specializing in high-resolution imagery and fuel mapping to perform the updated assessment Ensure that fuel types used in the new assessment are calibrated to local conditions and accurately represent the fuel loads Analyze the updated risk assessment to identify areas of high wildfire risk to prioritize mitigation efforts 	Increase overall community resiliency	Revise risk assessment as needed (e.g., after major fires)	<ul style="list-style-type: none"> USFS CWDG Grants CAL FIRE Grant Programs California Fire Safe Council Grants NFPA Firewise Grants
RL #16		H	Fall 2024	Evaluate and implement the fuels treatments identified in the fuels treatment map (Figure 4.1)	As identified on the map	CAL FIRE, USFS, BLM, Inyo County OES	<ul style="list-style-type: none"> Review the identified fuels reduction treatments in the fuels treatments layer of the map Conduct on-site assessments of the locations identified for fuels treatments to determine their current conditions and suitability for treatment Consult with local experts to ensure feasibility and functionality (i.e., degree of protection a treatment would provide) Select appropriate fuels reduction treatments based on the site assessments and the specific vegetation and wildfire risk factors present Develop a detailed treatment plan for each location, outlining the specific treatments to be implemented, the methods to be used, and the expected outcomes Monitor the treated areas regularly to assess the effectiveness of the treatments that may arise Modify the treatment plans and strategies as needed based the monitoring results and changing conditions Engage with local communities and stakeholders to ensure that they are aware of the treatments and to solicit feedback and support Prepare regular reports on the progress of the treatments and their effectiveness in reducing wildfire risk 	Provide access to fire personnel Establish fuel breaks and fire containment lines Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI Protect communities and critical infrastructure and facilities	Conduct regular evaluations and maintenance to maintain fuel break effectiveness	<ul style="list-style-type: none"> USFS CWDG Grants CAL FIRE Grant Programs FEMA BRIC Grants California Fire Safe Council Grants Landscape Scale Restoration Competitive Grant Program

Note: See Appendix A to consult relevant regulations and past planning efforts.

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4.2 COHESIVE STRATEGY GOAL 2: FIRE-ADAPTED COMMUNITIES

Goal 2 of the Cohesive Strategy/Western Regional Action Plan is: Fire-Adapted Communities: Human populations and infrastructure can withstand a wildfire without loss of life and property. The basic premise of this goal is:

“Preventing or minimizing the loss of life and property due to wildfire requires a combination of thorough pre-fire planning and action, followed by prudent and immediate response during a wildfire event. Post-fire activities can also speed community recovery efforts and help limit the long-term effects and costs of wildfire. CWPPs should identify high-risk areas and actions residents can take to reduce their risk. Fuels treatments in and near communities can provide buffer zones to protect structures, important community values and evacuation routes. Collaboration, self-sufficiency, acceptance of the risks and consequences of actions (or non-action), assisting those who need assistance (such as the elderly), and encouraging cultural and behavioral changes regarding fire and fire protection are important concepts. Attention will be paid to values to be protected in the middle ground (lands between the community and the forest) including watersheds, viewsheds, utility and transportation corridors, cultural and historic values, etc.” (WRSC 2013:15).

In this CWPP, recommendations for fire-adapted communities include public education and outreach actions and actions to reduce structural ignitability.

4.2.1 RECOMMENDATIONS (PROPOSED PROJECTS) FOR PUBLIC EDUCATION AND OUTREACH

Just as environmental hazards need to be mitigated to reduce the risk of fire loss, so do human hazards. Lack of knowledge, lack of positive actions (e.g., failing to create adequate defensible space), and negative actions (e.g., keeping leaf litter and exposed propane tanks close to structures) all contribute to increased risk of loss in the WUI.

Most residents in the WUI understand the risk that wildfire poses to their communities. However, it is important to continually engage the community as a partner in order to expand wildfire mitigation options across land ownership (McCaffrey 2004, 2020; McCaffrey and Olsen 2012; Winter and Fried 2000).

Methods to improve public education could include increasing awareness about fire department response and resource needs; providing workshops at demonstration sites showing Firewise landscaping techniques or fuels treatment projects; organizing community cleanups to remove green waste; publicizing availability of government funds for treatments on private land; and, most importantly, improving communication between homeowners and local land management agencies to improve and build trust, particularly since the implementation of fuel treatments and better maintenance of existing treatments needs to occur in the interface between public and private land.

Residents should also consider weather alerts and updates as valuable tools for developing protocols for an effective emergency response. By observing fire weather factors up to seven days in advance, residents can update their evacuation plans before heat, smoke, flames, downed trees, and blocked roads are imminent. If the National Weather Service issues a Red Flag Warning, it means warm temperatures, very low humidity, and stronger winds are expected to combine to produce an increased

risk of fire danger. the following fire weather products are available in a user-friendly, no-cost, format, allowing residents, homeowners, and land managers to easily prepare for increased fire danger:

- Interactive iNWS Mobile Alerting System: <https://inws.ncep.noaa.gov/>
- NWS Fire Weather Outlook: https://www.spc.noaa.gov/products/fire_wx/fwdy1.html
- NWS Zone Forecast for Owens Valley: <https://forecast.weather.gov/MapClick.php?zoneid=CAZ520>
- 7-Day Fire Wildfire Potential (California)
 - Map: <https://fsapps.nwcg.gov/psp/npsg/forecast#/outlooks?state=map&qacclid=8>
 - PDF: https://gacc.nifc.gov/oscc/predictive/outlooks/Scal_Fire_Potential.pdf

Please see Appendix B for a list of educational resources.

Table 4.2 lists public education recommendations to be implemented in the county.

4.2.2 RECOMMENDATIONS (PROPOSED PROJECTS) FOR REDUCING STRUCTURAL IGNITABILITY

Table 4.2 provides a list of community-based recommendations to reduce structural ignitability that should be implemented throughout the county. Reduction of structural ignitability depends largely on public education which provides homeowners the information they need to take responsibility for protecting their own properties. A list of action items that individual homeowners can follow can be found below. Carrying out fuels reduction treatments on public land may only be effective in reducing fire risk to some communities; if homeowners have failed to provide mitigation efforts on their own land, the risk of home ignition remains high, and firefighter lives are put at risk when they carry out structural defense.

Preparing for wildland fire by creating defensible space around the home is an effective strategy for reducing structural ignitability as discussed under Cohesive Strategy Goal 1: Resilient Landscapes. Studies have shown that burning vegetation beyond 120 feet of a structure is unlikely to ignite that property through radiant heat (Butler and Cohen 1996), but fire bands that travel independently of the flaming front have been known to destroy or damage houses that had not been impacted by direct flame impingement. Hardening the home to ignition from embers, including maintaining vent coverings and other openings, is also strongly advised to protect a home from structural ignitability. Managing the landscape around a structure by removing weeds, leaves, pine needles, woody materials and combustible debris within a 30-foot radius and keeping the roof and gutters of a home clean are two maintenance measures proven to limit combustible materials that could provide an ember bed and ignite the structure. Combustible materials can include stacks of firewood and lawn furniture. In essence, reducing structural ignitability and creating defensible space are key for protecting from the potential loss and damage due to intense wildfires. Detailed information regarding defensible space practices as well as a list of actions for reducing structural ignitability can be found in Appendix J.

The paragraphs below contain pertinent information regarding recent legislation related to Goal 2 of the Cohesive Strategy.

Assembly Bill 38: Assembly Bill 38 (2019) amended sections of the Civil, Government, and Public Resources Codes to set forth a comprehensive wildfire mitigation financial support program, which facilitates cost-effective home/structure hardening and retrofitting to create fire-resistant homes, businesses, and public structures. The amendments require the State Fire Marshal, in consultation with

the Director of Forestry and Fire Protection and the Director of Housing and Community Development to identify building retrofits and hardening measures eligible for financial assistance under the program. Additionally, the amendments require that CAL FIRE identify defensible space, vegetation management, and fuel treatment procedures eligible for financial assistance. Wildfire hazard areas eligible for financial assistance under the program include LRAs situated within very high FHSZs and SRAs within any FHSZ (CA GOPR 2022).

California Fire Code Chapter 49: This chapter of the California Fire Code is designed to reduce ember intrusion and minimize total losses to conflagrations. The chapter provides minimum standards for buildings with the aim of decreasing overall structural ignitability. Also discussed within the chapter are requirements regarding defensible space and vegetation management.

California Building Code Chapter 7A: This chapter of the California Building Code establishes requirements for structures located within the WUI. Among these minimum standards are vegetation management practices, defensible space guidelines, use of ignition resistant construction material, fire-resistant exterior windows, and attic vent coverings.

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Table 4.2. Recommendations (Proposed Projects) for Creating Fire-Adapted Communities (Public Education and Reducing Structural Ignitability)

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FAC #1		H	Ongoing	Continue to enhance visitor outreach and education while addressing issues related to dispersed camping and recreational activities	Inyo County	Nonprofit organizations, Inyo County, BLM, USFS, NPS, LADWP	<ul style="list-style-type: none"> • Include safety and educational materials to campground reservation websites • Investigate opportunities to add fire safety flyers to wood bundles in popular camping stores (Independence Fire Safe Council model) • Increase awareness and promote the "Camp Like a Pro" program • Utilize consistent branding that is being developed through Visitor Experience/Connection Program • Increase fire safety signage year-round throughout popular dispersed camping areas • Enforce camping rules and regulations on all agency lands (e.g., USFS, LADWP, BLM, NPS, etc.) as well as tribal campgrounds • Upgrade campgrounds to improve emergency response vehicle access • Investigate the feasibility of increasing agency patrols and enforcement 	Reduce loss of life and structures through increased resident and visitor understanding and participation fire safety on recreational lands	Annual program evaluation and updates as necessary. Track and record community participation, identify effective outreach strategies	<ul style="list-style-type: none"> • FEMA Building Resilient Infrastructure and Communities (BRIC) Grants • The Fire Prevention and Safety Grants (FP&S) • USFS CWDG • EPA Environmental Education Grants • CAL FIRE Grant Programs • California Fire Safe Council Grants
FAC #2		H	Fall 2024	Resolve limited access issues (e.g., one way in and out of the community), and incorporate solutions into the General Plan's Safety Element (circulation) element for improved safety and accessibility	Inyo County	Inyo County, private landowners, BLM, USFS	<ul style="list-style-type: none"> • Conduct and initial assessment of ingress and egress issues to identify high-risk roads • Prioritize road maintenance and clearance efforts to ensure safe passage for emergency vehicles and residents <ul style="list-style-type: none"> ○ Maintain fire access roads ○ Promote resident involvement in ROW vegetation clearance efforts ○ Establish regular maintenance schedules to address encroaching vegetation, debris, and road surface conditions ○ Maintain turn around locations, where appropriate, for first responders, and determine the need for improving or construction of new ones • Consider using backroads on public and private lands as alternatives ingress and egress points <ul style="list-style-type: none"> ○ Work with relevant entities to assess feasibility • Develop and communicate plans for communities with limited access. Ensure that residents are aware of all potential evacuation routes • Establish vegetation management programs and/or centralize existing plans from agencies that are responsible for ROW management • Conduct assessments of bridges with unknown capacities to determine their load-bearing capacities <ul style="list-style-type: none"> ○ Upgrade or replace bridges that do not meet safety standards ○ Document load bearing-capabilities of bridges, and ensure proper signage is posted at key bridges, to promote safety of first responders 	Provides safe and effective means of evacuation in case of emergencies	Regular monitoring and maintenance to ensure roads are drivable for emergency response vehicles	<ul style="list-style-type: none"> • FEMA BRIC Grants • FEMA Fire Management Assistance Grant (FMAG) • USFS CWDG • Assistance to Firefighters Grants (AFG)

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Implement fire breaks and fuel reduction measures along key access roads to mitigate fire risks and increase fire responder safety Collaborate with transportation authorities and agencies to address road safety concerns and explore funding opportunities for road improvements Install clear and informative directional signage in communities with dead ends, cul-de-sacs, and complex layouts to aid navigation for emergency responders Collaborate with County planners and community stakeholders to ensure that future development accounts for improved access and safety considerations Create and maintain a map with emergency access roads 			
FAC #3		H	Ongoing	Continue to develop a comprehensive public education and community engagement program	Inyo County	Inyo County, Mono County, Eastern Sierra Council of Governments, local Fire Safe Councils, CAL FIRE, local fire jurisdictions, USFS, BLM, NRCS, IMRCD, local nonprofit organizations, Tribes	<ul style="list-style-type: none"> Develop a comprehensive outreach strategy that considers the County's unique challenges <ul style="list-style-type: none"> Utilize both online and offline communication methods (e.g., bulk mailing, radio, local newspapers) to ensure that all residents and visitors are reached Continue to organize community engagement events, such as defensible space workshops or wildfire simulation and evacuation exercises to engage residents directly and promote involvement Provide an initial announcement to residents, including short-term and absentee residents, living in the WUI that contains copy of Inyo County's WUI ordinance, CAL FIRE's defensible space standards, and fire district information for help and questions <ul style="list-style-type: none"> Utilize the county assessor records to identify changes in property ownership to send the announcements to new residents Develop and distribute educational materials to inform landowners about proper riparian area treatment <ul style="list-style-type: none"> Create and distribute maps with riparian corridors Notify landowners about Fish and Game Section 1602 Work to further the programmatic documentation to streamline work on riparian fuels. Increase awareness and knowledge through community workshops and training classes on buffer strips, defensible space, fire safe landscaping, structural hardening, and the benefits of prescribed burning and mechanical fuels treatments Increase awareness about common human ignition sources and associated dangers (e.g., fireworks, vehicles, and BBQ fires that are not extinguished properly) <ul style="list-style-type: none"> Identify areas with high frequencies of human ignitions to focus educational efforts 	Reduce risk of human-caused wildfire ignitions. Educate citizens about wildfire hazards.	Conduct regular review of outreach materials as needed. Track local engagement.	<ul style="list-style-type: none"> FEMA Building Resilient Infrastructure and Communities (BRIC) Grants USFS CWDG The Fire Prevention and Safety Grants (FP&S) EPA Environmental Education Grants CAL FIRE Grant Programs California Fire Safe Council Grants

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Establish a program to have Fire Safe Council volunteers or community leaders along with fire agency personnel (e.g., USFS, CAL FIRE, etc.) perform a walkthrough with residents in high-risk areas and provide a writeup of potential mitigation actions Increase awareness of the wildfire-related issues of invasive plants Increase awareness and knowledge about the practices and benefits of cultural burning Provide information to the public on forest health, fire ecology, and environmental issues <ul style="list-style-type: none"> Ensure inclusivity and support for vulnerable populations (e.g., disabled residents, low-income individuals, tribal members, non-English-speakers, etc.) in wildfire planning, preparedness, and response efforts Seek partnerships and projects with the UC Extension Continue to expand collaborations with local organizations such as Master Gardeners and UC Extension. <ul style="list-style-type: none"> Partner with federal agencies, special districts, community associations, Fire Safe Councils, schools, and nonprofits to facilitate outreach efforts. Identify and empower community leaders or champions who can advocate for wildfire preparedness and education within their communities Develop a system for periodic updates and feedback collection from the community to ensure that outreach efforts remain effective and responsive to community needs Tailor outreach materials and messages to address the specific concerns of each remote community, including issues related to fire protection, water resources, road access, and evacuation planning Continue to provide resources and guidance to remote communities for fuels reduction efforts <ul style="list-style-type: none"> Maintain a user-friendly website dedicated that centralizes wildfire safety information and resources Establish programs in schools to distribute wildfire safety information to students Establish a partnership with Mono County to create consistent messaging and reach broader audiences Include education and outreach efforts regarding public safety power shutoff events Consider offering the Last Chance Survival Simulation Workshop with field tours to learn about Temporary Refuge Areas and practice evacuation skills 			

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Consider working with the Eastern Sierra GIS Collaborative to improve community engagement and project planning/tracking/implementation, and plan updates in a manner that utilizes innovative GIS technology 			
FAC #4		M	Spring 2026	Explore the feasibility of creating a countywide ordinance for defensible space standards and regulations and synchronize with Policy 1.2 of the General Plan Housing Element Update	Inyo County	Inyo County, CAL FIRE, FPDs, Tribes	<ul style="list-style-type: none"> Investigate the feasibility of enacting a countywide defensible space ordinance. Ordinance should address: <ul style="list-style-type: none"> Regular vegetation management on entire property in accordance with CAL FIRE's defensible space standards Enforcement of the County's WUI code Flammable materials and debris accumulation Unmanaged properties with absentee landowners Clear definitions of fire hazards The El Dorado County Vegetation Management and Defensible Space can serve as a conceptual example: https://library.municode.com/ca/el_dorado_county/codes/code_of_ordinances?nodeId=PTAGEC_OOR_TIT8PUHESA_CH8.09VEMADESP 	Reduce wildfire risk and loss of structures through effective regulation.	Annual ordinance evaluation and updates as necessary.	<ul style="list-style-type: none"> FEMA BRIC Grants USFS CWDG Firewise Grants California Fire Safe Council Grants CAL FIRE Wildfire Prevention Grants
FAC #5		H	Fall 2024	Implement a countywide program to support property owners in defensible space and home hardening measures, green waste disposal, home assessments, and addressing and signage improvements	Inyo County	Inyo County, CAL FIRE, BLM, USFS, NPS, Tribes	<ul style="list-style-type: none"> Establish a mobile tool library with training sessions, serving Inyo and Mono counties and reaching remote areas. Include equipment such as chainsaws, skid steers, chippers, air curtain burners, drills, and impact drivers Synchronize efforts with Policy 1.1 of the General Plan Housing Element Update Conduct an initial assessment to identify service gaps and deficiencies Integrate this program with educational programs and proposed ordinances (see FAC #3 and #5) Procure or share chippers to support fire mitigation efforts (USFS, BLM, CAL FIRE) Establish a defensible space and home hardening assistance program that covers funding and education Establish a wildfire mitigation assistance program for disabled, elderly, and low-income residents Establish a green waste disposal program to support residents in defensible space efforts Prioritize efforts in areas that are high-risk, remote, and that lack adequate water supply Establish an assistance and outreach program for installation of reflective address markers Consider: <ul style="list-style-type: none"> Financial incentives such as tax credits for structure improvements Subsidies to offset mitigation costs (e.g., retrofits and new builds) for economically disadvantaged residents, for example, grants and cost-sharing opportunities 	Reduce wildfire risk and loss of structures through effective regulation. Facilitate sustainable and cohesive urban development.	Annual program evaluation and updates as necessary Regular assessments in heavily vegetated areas	<ul style="list-style-type: none"> FEMA BRIC Grants USFS CWDG Firewise Grants California Fire Safe Council Grants Good Neighbor Citizenship Grant CAL FIRE Wildfire Prevention Grants

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Expanding technical assistance programs for communities at greatest risk with limited capacity Increasing financial support and technical resources to jurisdictions to hire staff and enhance capacity to adopt, enforce, and maintain building codes and standards that govern construction, design, and development in wildfire-prone areas For defensible space inspections, send notices to all residents prior to inspections Explore and research opportunities for hardening for mobile home parks 			
FAC #6		M	Spring 2026	Form a regional fire adapted communities program serving both Inyo and Mono Counties to enhance wildfire preparedness and safety in the region	Inyo and Mono Counties	Inyo County, Mono County, Eastern Sierra Council of Governments, local Fire Safe Councils, IMRCD	<p>Investigate the viability of creating a regional fire adapted communities program to serve both Inyo and Mono counties</p> <ul style="list-style-type: none"> Tie in initiative with existing efforts from relevant organizations (Resource Conservation District, ESWA, Eastern Sierra Council of Governments) Individual community-based fire safe councils could be nested under the regional umbrella Continue to, and broaden, collaborations with neighboring counties for mutually beneficial projects and initiatives Inyo County OES to continue to develop existing relationships with Resource Conservation Districts, Fire Safe Councils, and Eastern Sierra Council of Governments (ESCOG), and county departments of adjacent counties 	<p>Improve the regions self-reliance addressing wildfire concerns</p> <p>Educate citizens about wildfire hazards.</p> <p>Empower local communities.</p>	Annual program evaluation and updates as necessary.	<ul style="list-style-type: none"> Firewise grants National Urban and Community Forest Program FP&S (FEMA) EPA Grants California Fire Safe Council Grants USFS CWDG
FAC #7		H	Ongoing	Maintain efforts to raise awareness of the emergency notification system	Inyo County	Inyo County	<ul style="list-style-type: none"> Link efforts with educational initiatives (e.g., FAC #5) Conduct outreach campaigns to inform residents that the County is switching to Zonehaven and GEM <ul style="list-style-type: none"> Encourage community members to register for the new programs Conduct trainings for the new platforms Inform residents in areas with poor coverage about receiving alerts and using alternative methods to receive messages Increase subscriptions to Code RED 	Enhance effectiveness of public messaging and safety	Periodic testing to ensure the system is working correctly	<ul style="list-style-type: none"> The Fire Prevention and Safety Grants (FP&S) Assistance to Firefighters Grants (AFG) USFS CWDG CAL FIRE Wildfire Prevention Grants
FAC #8		H	Fall 2025	Develop comprehensive evacuation strategies for remote communities, encompassing the identification of evacuation routes, establishment of potential TRAs, and the implementation of tailored evacuation plans and drills. Additionally, focus on educating residents in these isolated communities with limited access on effective evacuation procedures.	Inyo County	Inyo County, local Fire Safe Councils, Cabin Owners Associations, CAL FIRE, USFS, BLM, Bishop Police Dept.	<ul style="list-style-type: none"> Collaborate with land management agencies and fire protection agencies to discuss and develop evacuation procedures Identify potential TRAs on a map and distribute to all residents Increase awareness of evacuation issues through community events, workshops, and practice drills Develop detailed maps that show all roads with potential ingress and egress points into and out of the particular community and distribute to the respective community members Focus efforts in communities with limited ingress and egress Connect refuge locations with backup batteries and generators. 	Protect public and first responder life and safety	Assess effectiveness and update following evacuations and disaster events.	<ul style="list-style-type: none"> FEMA BRIC Grants FEMA Fire Management Assistance Grant (FMAG) The Fire Prevention and Safety Grants (FP&S) USFS CWDG Assistance to Firefighters Grants (AFG)

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Collaborate with Mono County for roads and areas that intersect county boundaries Develop tailored evacuation plans for isolated and remote communities with only one road for access, addressing their unique challenges and needs Engage community members and local fire safe councils in the planning process to incorporate their local knowledge and preferences Utilize the risk assessment (Chapter 3) and the community summaries (Appendix D) to identify high-risk communities with limited access Plan and conduct evacuation drills in these communities, involving residents in practicing evacuation procedures under different scenarios Develop and test effective communication strategies to notify residents of evacuation orders and provide real-time updates during emergencies Conduct an assessment of locked gates to identify properties inaccessible to fire agencies Allocate resources, including signage, emergency equipment, and personnel, to support implementation of evacuation plans Periodically review and update the community evacuation plans to ensure they remain relevant and effective Collaborate with Mono County for communities and areas that intersect county boundaries Consider partnering with mass transit (Eastern Sierra Transit Authority) and the Sheriff's Office for evacuations and evacuation planning 			
FAC #9		M	Summer 2026	Explore and identify wildfire mitigation applications (e.g., the Fire Aside Program for Enhanced Wildfire Preparedness or FireBreak) for potential implementation	Inyo County	Inyo County, Mono County, Fire districts, IMRCD	<ul style="list-style-type: none"> Conduct a comprehensive community assessment to gauge community interest in implementing wildfire mitigation applications <ul style="list-style-type: none"> Gather input from residents, local organizations, and fire protection stakeholders to determine needs and concerns regarding wildfire preparedness Initiate a cost-benefit analysis to evaluate the advantages and disadvantages of implementing the applications <ul style="list-style-type: none"> Consider factors such as the potential reduction in wildfire risk, resource allocation, level of adoption within communities, and long-term savings in fire response costs Explore customization of the applications to cater to the specific needs and features of the county, ensuring that the applications address local challenges and conditions Assess the viability of implementing the applications in the county, considering factors such as internet coverage, technological capabilities, and potential challenges in community adoption (e.g., individuals who are non-tech-savvy) 	Educate citizens about wildfire hazards. Empower local communities.	Annual program evaluation and updates as necessary.	<ul style="list-style-type: none"> Firewise grants National Urban and Community Forest Program FP&S (FEMA) EPA Grants

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Develop an education and outreach plan to inform the community about the benefits of the application and evaluate interest Consider initiating a pilot program in a representative area or areas of the county to assess the application's functionality, user-friendliness, and effectiveness in a real-world setting Collaborate with local fire agencies, fire safe councils, nonprofits, and relevant organizations to gain their insights and support Evaluate the technical infrastructure and data capabilities of the county to ensure compatibility with the application's requirements Establish a feedback mechanism to continuously gather input from the communities, users, and stakeholders Utilize feedback to refine and enhance the application 			
FAC #10		H	Spring 2024	Promote and support the formation of local Firewise communities for enhanced community wildfire preparedness	Inyo County	Inyo County, Mono County, Inyo-Mono Firewise Coordinator, CAL FIRE	<ul style="list-style-type: none"> Conduct a comprehensive needs assessment to identify areas within the county that would benefit from the establishment of local Firewise communities Engage with communities to raise awareness of the benefits of Firewise communities Collaborate with existing Firewise communities and organizations to provide training and guidance on establishing and managing Firewise communities Define leadership roles and governance structures for Firewise communities, including selection of leaders and/or coordinators Allocate resources, which may include grants and funding, to support the establishment and initial activities of Firewise communities Utilize the Inyo County risk assessment (Chapter 3) and the community summaries (Appendix D) to identify vulnerable areas and develop localized action plans for each Firewise communities Set up a meeting schedule for regular Firewise communities meetings and reporting to track progress and outcomes Encourage community participation in Firewise communities activities, including community education, fuel reduction projects, home hardening, and evacuation planning Have individual community based Firewise communities attend the regional Firewise community meeting to disseminate consistent information. <ul style="list-style-type: none"> Work with existing entities such as Master Gardeners, RCD, ESCOG 	Educate citizens about wildfire hazards. Empower local communities.	Annual program evaluation and updates as necessary.	<ul style="list-style-type: none"> Community Planning Assistance for Wildfire (CPAW) BRIC FP&S Firewise grants California Fire Safe Council Grants Community Economic Resilience Fund

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FAC #11		M	Ongoing	Continue to align objectives between the CWPP, Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), Emergency Operations Plan, and General Plan Safety Element and Housing Element updates and revisions to enhance consistency and leverage funding opportunities for accessibility and circulation issues, evacuation planning, communications systems, water supply infrastructure, and hazardous fuel treatments, fostering an integrated and effective approach to wildfire risk reduction.	Inyo County	Inyo County	<ul style="list-style-type: none"> Facilitate coordination among relevant agencies and stakeholders responsible for updating and revising the CWPP, MJHMP, and the General Plan Safety Element Conduct a thorough review of existing documents to identify areas of inconsistency, overlap, or gaps in addressing wildfire risk reduction Establish a set of common goals and objectives that can be shared across all three planning documents to ensure synergy Identify opportunities for leveraging funding and resources by aligning grant applications, projects, and initiatives across the three planning documents Implement a schedule for regular updates and collaborative work sessions to keep all plans current and synchronized Involve the community in the alignment process by seeking input and feedback Enhance data sharing and integration among agencies, ensuring that all planning documents benefit from the latest information Review policies and regulations across the planning documents to ensure consistency and to prevent conflicts Develop mechanisms for monitoring progress, tracking implementation, and reporting results Explore innovative and collaborative approaches to planning, implementation, and monitoring, including technology and work force development 	<p>Protect life and property through effective wildfire management.</p> <p>Establish cohesive planning approach with regard to wildfire management.</p>	Updates to planning goals as needed	<ul style="list-style-type: none"> USFS CWDG CAL FIRE Wildfire Prevention Grants The Fire Prevention and Safety Grants (FP&S) California Fire Safe Council Grants Community Planning Assistance for Wildfire (CPAW) Community Planning Assistance for Wildfire (CPAW)
FAC #12		H	Ongoing	Continue to support tribal communities with wildfire preparedness and capacity building	Inyo County	Inyo County, tribal partners, USFS, CAL FIRE, BLM, NPS, LADWP, NRCS, IMRCD, Bureau of Indian Affairs tribal governments and organizations	<ul style="list-style-type: none"> Focus efforts on community education, fuels reduction, debris and rubbish removal and disposal, grant applications, and capacity building Develop tailored community education programs to address the unique requirements and cultural considerations of tribal communities Provide support and resources for fuels reduction efforts, including defensible space assistance Offer guidance and support for home hardening measures Organize debris and rubbish removal initiatives in tribal communities, addressing fire hazards and environmental concerns Engage with tribal leaders and community representatives to ensure that assistance programs align with tribal priorities and cultural values Seek partnerships with state, federal, and tribal agencies to support these initiatives Maintain ongoing outreach and communication with tribal communities to ensure their needs are being met and their concerns addressed 	<p>Improve local ability and self-reliance of tribal communities to address its wildfire concerns</p> <p>Reduce risk of loss of life and property from wildfire</p>	Annual assessment of personnel and equipment capacity.	<ul style="list-style-type: none"> FEMA BRIC Grants FEMA Fire Management Assistance Grant (FMAG) Firewise Grants 2022 Infrastructure Investments and Jobs Act Assistance to Firefighters Grants (AFG)

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FAC #13		H	Ongoing	Continue to support implementation of projects identified in the Independence and 40 Acres CWPPs	Independence and 40 Acres	Refer to the Independence and 40 Acres CWPPs	Refer to the Independence and 40 Acres CWPPs	Protect life and property through effective wildfire management. Establish cohesive planning approach with regard to wildfire management.	Annual review and updates to materials	<ul style="list-style-type: none"> Community Planning Assistance for Wildfire (CPAW) BRIC FP&S Firewise grants National Urban and Community Forest Program California Fire Safe Council Grants Regional Forest and Fire Capacity Grant Program Landscape Scale Restoration Competitive Grant Program
FAC #14		M	Summer 2025	Collaborative fire mitigation toolkit: develop an accessible and informative toolkit for private property owners to navigate the process of collaborating with land managers		Inyo County, LADWP, BLM, USFS, CAL FIRE, CDFW, NPS	<ul style="list-style-type: none"> Develop a comprehensive toolkit for private property owners, outlining the process and requirements for collaborating with land managers (e.g., LADWP, BLM, USFS, etc.) on fire mitigation projects Ensure that the toolkit is easily accessible and transparent, with clear instructions and contact information for relevant land management agencies <ul style="list-style-type: none"> Include a detailed map that clearly shows jurisdictional boundaries Provide information on the legal and regulatory consideration for conducting fire mitigation work on land managed by governmental agencies (e.g., creeks and streams, areas with sensitive species, etc.) <ul style="list-style-type: none"> Include guidance on the permitting process, documentation requirements, and any associated fees or costs Offer resources and contact details for agency representatives who can assist private property owners in project planning and implementation Conduct outreach to inform homeowners about the toolkit's availability and importance Establish a feedback mechanism to gather input and suggestions from property owners for toolkit improvement 	Increase collaboration Enhance community resilience	As needed	<ul style="list-style-type: none"> FEMA Building Resilient Infrastructure and Communities (BRIC) Grants USFS CWDG CAL FIRE Grant Programs California Fire Safe Council Grants
FAC #15		H	Spring 2026	Manage hazardous rubbish and debris on private property and unoccupied lots for improved safety	Inyo County	Inyo County, LADWP, private landowners	<ul style="list-style-type: none"> Assess the viability of establishing a County ordinance to require the removal of rubbish and debris Promote and establish reporting mechanisms for residents to report illegal dumping activities Establish programs and resources to assist elderly property owners in clearing rubbish and debris from their properties Launch public awareness campaigns to inform residents about the importance of maintaining their properties to reduce fire hazards <ul style="list-style-type: none"> Provide information on affordable disposal options, recycling, and responsible waste management 	Protect life and structures in proximity to overgrown lots by mitigating fuels Enhance safety for firefighters	Follow up with post-treatment stabilization practices. Frequent communication, collaboration, and cooperation with landowners. Regular maintenance to ensure area remains clear of vegetation. Monitor and treat invasive species.	<ul style="list-style-type: none"> Community Wildfire Defense Grants (CWDG) National Fire Plan (NFP) Grants Building Resilient Infrastructure and Communities (BRIC) California Fire Safe Council Grants Regional Forest and Fire Capacity Grant Program

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Engage with property owners who resist to maintain their properties through respectful communication and education about the benefits of hazard reduction Encourage community members to be proactive in identifying and reporting hazardous properties Establish community cleanup events <ul style="list-style-type: none"> Organize community events in collaboration with community residents, nonprofits, and other community organizations to address excess rubbish Seek funding sources to offer incentives, such as free disposal vouchers or waived landfill fees, to encourage participation in cleanup efforts Develop and maintain a map of areas that experience the highest proportion of properties with excess rubbish 			
FAC #16		M	Ongoing	Ensure adequate clearance between power lines and trees for enhanced safety and wildfire prevention	Inyo County	Inyo County, LADWP, SCE, community residents, local fire safe councils	<ul style="list-style-type: none"> Hazard trees, or trees with improper powerline/power pole clearance may be reported to the appropriate service provider through the hotlines listed below <ul style="list-style-type: none"> LADWP: (760) 873-0251 SCE: (800) 655-4555 Increase awareness of the LADWP and SCE programs (hazard tree and vegetations management) by disseminating relevant information during public outreach campaigns (see FAC #2) 	Reduce ignitability and wildfire risk Enhance safety for firefighters	Follow up with post-treatment stabilization practices. Frequent communication, collaboration, and cooperation with landowners. Regular maintenance to utilities remains clear of vegetation.	<ul style="list-style-type: none"> Community Wildfire Defense Grants (CWDG) National Fire Plan (NFP) Grants Building Resilient Infrastructure and Communities (BRIC) California Fire Safe Council Grants Regional Forest and Fire Capacity Grant Program
FAC #17		M	Fall 2027	Execute a road/evacuation risk analysis to identify high-risk roads (e.g., communities with one way in and out, narrow roads, roads with blind corners, roads with heavy vegetation, steep roads, unpaved roads, etc.)	Inyo County (communities with access and evacuation issues)	Inyo County OES, local fire jurisdictions	<ul style="list-style-type: none"> Develop an inventory of all the communities with access and evacuation issues. If possible, document road names and characteristics such as width, surface type, visibility, grade, and surrounding vegetation Prioritize analysis on the communities with the highest risk (based both on local knowledge and this CWPP's risk ratings) Consider field assessments or GIS-based analysis or a combination of both to perform the risk analysis Seek input from stakeholders, fire personnel, and community members to validate the identified high-risk roads Once the highest risk roads are identified, develop an inventory with high-priority roads Collaborate with relevant stakeholders to develop mitigation strategies for high-risk roads 	Enhance community and firefighter safety	Annual review	<ul style="list-style-type: none"> USFS CWDG California Fire Safe Council Grants California Fire Foundation Grant Program Building Resilient Infrastructure and Communities (BRIC)
FAC #18		M	Spring 2026	Transition the existing Access and Functional Needs (AFN) sign up system to a digital version	Inyo County	Inyo County OES	<ul style="list-style-type: none"> Evaluate the existing AFN sign-up system to understand its workflow, requirements, and limitations Chose a digital platform or software that meets the needs of the AFN sign-up system Develop the digital AFN sign-up system, including user-friendly interfaces, accessibility features, and data security measures Provide training to county personnel and users on how to use the new system 	Streamline AFN sign-ups	As needed	<ul style="list-style-type: none"> USFS CWDG California Fire Safe Council Grants California Fire Foundation Grant Program County general fund

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Launch and promote the new system among the target audience through various channels Gather feedback from users and stakeholders to identify areas for improvement and make necessary adjustments 			
FAC #19		M	Spring 2029	Develop a countywide Climate Action Plan that includes climate effects on wildfires	Inyo County	Inyo County	<ul style="list-style-type: none"> Form a task force including local government officials, environmental experts, community leaders, and representatives from vulnerable and tribal populations Host public meetings and workshops to gather input from residents on their priorities and suggestions for climate and wildfire resiliency strategies Evaluate the current CWPP to identify areas where climate action initiatives could enhance or align with wildfire prevention and mitigation efforts Ensure that the climate action plan objectives support and enhance the wildfire resilience measures outlined in the CWPP Develop educational materials and programs that inform the public about climate change impacts, mitigation strategies, and how these relate to wildfire risks Create opportunities for young people to engage with and contribute to the Climate Action Plan Ensure that all data and outcomes are openly available to the public to maintain transparency and trust 	Enhance community resiliency to climate impacts and wildfires	Regular updates	<ul style="list-style-type: none"> USFS CWDG California Fire Safe Council Grants California Fire Foundation Grant Program Building Resilient infrastructure and Communities (BRIC)
FAC 20		M	FALL 2027	Determine whether community-scale CWPPs are needed for relatively large and complex communities in Inyo County (e.g., City of Bishop)	Inyo County	Inyo County OES	<ul style="list-style-type: none"> Conduct a comprehensive assessment of the communities in Inyo County to identify those that would necessitate a detailed, community-level CWPP Engage with residents, stakeholders, community organizations, and community leaders to understand the need for community-scale CWPPs Conduct a feasibility study to evaluate the practicality and potential benefits of implementing community-scale CWPPs in identified communities Determine the resources required, including personnel, funding, and technical support, to develop and implement community-scale CWPPs 	Provide specific and targeted action plans at the community level	Regular updates	<ul style="list-style-type: none"> USFS CWDG California Fire Safe Council Grants California Fire Foundation Grant Program Building Resilient infrastructure and Communities (BRIC)

Note: See Appendix A to consult relevant regulations and past planning efforts.

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4.3 COHESIVE STRATEGY GOAL 3: WILDFIRE RESPONSE

Goal 3 of the Cohesive Strategy/Western Regional Action Plan is Wildfire Response: All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions:

“A balanced wildfire response requires integrated pre-fire planning with effective, efficient, and coordinated emergency response. Pre-fire planning helps tailor responses to wildfires across jurisdictions and landscape units that have different uses and management objectives. Improved prediction and understanding of weather, burning conditions, and various contingencies during wildfire events can improve firefighting effectiveness, thereby reducing losses and minimizing risks to firefighter and public health and safety. Wildfire response capability will consider the responsibilities identified in the Federal Response Framework. Local fire districts and municipalities with statutory responsibility for wildland fire response are not fully represented throughout the existing wildland fire governance structure, particularly at the NWCG, NMAC, and GACC levels.” (WRSC 2013:15).

This section provides recommended actions that jurisdictions could undertake to improve wildfire response.

4.3.1 RECOMMENDATIONS (PROPOSED PROJECTS) FOR IMPROVING FIRE RESPONSE CAPABILITIES

Educating members of the public so they can reduce dependence on fire departments is essential because these resources are often stretched thin due to limited personnel and equipment. Education to enhance community preparedness is a key factor in supporting local fire departments in fire response, particularly educating residents about emergency notifications and evacuation protocols so that residents can safely evacuate an area while emergency responders prepare to protect life and property.

Table 4.3 provides recommendations for improving firefighting capabilities. Many of these recommendations are general in nature to be tailored for response agencies across the county.

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Table 4.3. Recommendations (Proposed Projects) for Safe and Effective Wildfire Response

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FR #1		H	Fall 2024	Identify, assess, and map existing water resources for fire suppression, ensuring comprehensive coverage	Inyo County	Inyo County, local fire jurisdictions, community service districts, water system owners, State Water Board	<ul style="list-style-type: none"> Assess existing water resources throughout the county and create a map and/or web map showing all water sources (e.g., tanks, hydrants, ponds, ditches, etc.) <ul style="list-style-type: none"> Record flow rates, pressure, and overall condition for fire hydrants Record water availability, proper fittings, and landowner willingness to collaborate for maintaining water tanks For ditches, identify areas where drafting water is accessible (e.g., where there is little to no vegetation) Record areas where drafting water is feasible (e.g., ditches and ponds) Work with fire personnel to explore the best method to host, utilize, and maintain the information 	Improve efficiency and speed of wildfire response and suppression Reduce wildfire threats to life and property	Annual assessment/review of water resources	<ul style="list-style-type: none"> Emergency Management Performance Grant (EMPG) (FEMA) RCP BRIC Firewise grants CAL FIRE Grant Programs CalEPA Loans and Grants
FR #2		H	Spring 2025	Investigate and explore approaches to enhancing water sources for firefighting purposes	Inyo County (prioritize high-risk areas that have poor or no water resources)	Inyo County, LADWP, private landowners, CAL FIRE, local fire jurisdictions	<ul style="list-style-type: none"> Establish relationships with private property owners and assess their interest in collaborating with fire departments (i.e., making their tanks, ponds, wells, or ditches accessible to firefighters during emergencies) <ul style="list-style-type: none"> Work with willing private owners to install universal fittings to water tanks Conduct community outreach to community residents to increase awareness of firefighting water supply issues and provide a list of actions they can take to support firefighting efforts (e.g., coming together as a community to map water resources in the community; installing universal fittings to water tanks; and keeping water tanks full) Maintain water resources accessible (e.g., reduce heavy vegetation near tanks, hydrants, and ditches) Collaborate with the tribes for water infrastructure improvements Conduct outreach to agricultural or industrial operators with ample water sources (e.g., large water tanks) to assess interest in collaborating with fire departments Consider painting fire hydrants according to their flow rates (NFPA standards) Implement a regular testing and maintenance program for fire hydrants to ensure they are in good working condition Consider amending the County's WUI code to require that water tanks for new development in the WUI should be kept full at all times Assess the feasibility of adding water tanks, cisterns, or dry hydrants in areas with scarce water resources 	Protect life and property through improved firefighting response Improve firefighter safety	Annual assessment/review of water resources	<ul style="list-style-type: none"> Emergency Management Performance Grant (EMPG) (FEMA) RCP BRIC Firewise grants CAL FIRE Grant Programs CalEPA Loans and Grants

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FR #3		H	Winter 2024	Establish a unified naming and signage system for street signs (naming and directional) and home addressing for improved consistency	Inyo County (focused on Charleston View, Darwin, and Homewood Canyon)	Inyo County	<ul style="list-style-type: none"> Conduct outreach to residents about the dangers of inconsistent street names and home addressing <ul style="list-style-type: none"> Seek input and feedback from local communities, residents, and relevant stakeholders to ensure that the new system aligns with community needs Inyo County Planning Department to assess potential solutions Install directional signage in communities with complex road layouts (e.g., many dead ends and cul-de-sacs) Utilize mapping and GIS technology to map and record the standardized addressing system and street names Develop a phased implementation schedule to transition to the new system while minimizing disruption to residents and services Coordinate with emergency service providers, such as fire departments and law enforcement, to ensure that the new addressing system aligns with their emergency response protocols Integrate the standardized addressing system into emergency response databases and communications systems to facilitate rapid location identification Conduct regular audits of the addressing and signage system to identify and rectify any inconsistencies or issues 	Protect life and property through improved firefighting response	Assess current situation and determine where signage can be improved (e.g., increasingly popular recreation areas).	<ul style="list-style-type: none"> Community Planning Assistance for Wildfire (CPAW) BRIC FP&S Firewise grants National Urban and Community Forest Program Challenge Cost Share Grant Program CDWDG California Fire Foundation Grant Program California Fire Safe Council Grants

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FR #4		H	Ongoing	Explore opportunities to strengthen countywide fire department capacity building	Inyo County (focusing on high-risk areas with understaffed and underequipped fire departments)	Inyo County, local fire jurisdictions	<ul style="list-style-type: none"> Establish fire protection services contracts with communities that don't contribute to the tax base but receive services <ul style="list-style-type: none"> Encourage FDs to establish service contracts with communities that don't fall under a specific jurisdiction Centralize and provide fire protection protocols between agencies (e.g., federal response is only for vegetation fires, not structure fires) Continue to assist fire departments with grant applications and to find new sources of funding Continue to assist fire departments with the acquisition of firefighting equipment and vehicles as well as with fire station upgrades Create online resources to facilitate sharing of information between fire chiefs in Inyo County Consider establish a monthly or quarterly roundtable for regular status updates Establish and/or expand relationships with high schools, colleges, and nonprofits to encourage volunteer recruitment Inform communities about the challenges faced by FDs to emphasize the significance of supporting these organizations through volunteering, fundraising, and personal actions Explore innovative methods, such as BurnBot, to minimize risk and costs of controlled burns and to increase workforce capacity Assess the Forestry and Fire Recruitment Program for potential opportunities: https://www.forestryfire.org/what-we-do Consider establishing internships with the Cerro Coso Community College Wildland Fire and Forestry Outdoor Recreation Program 	Protect life and property through improved firefighting response	Assess capacity on an annual basis	<ul style="list-style-type: none"> FEMA Assistance to Firefighters Grants FEMA Staffing for Adequate Fire and Emergency Response Firewise grants National Urban and Community Forest Program GSA-Federal Excess Personal Property (GSA) California Fire Foundation Grant Program
FR #5		H	Ongoing	Create dedicated countywide positions for a wildfire preparedness coordinator and fire marshal to enhance wildfire readiness	Inyo County	Inyo County	<ul style="list-style-type: none"> Assess feasibility of creating a permanent countywide wildfire preparedness coordinator (Fire Prevention Officer position is vacant) and fire marshal positions. The Wildfire Preparedness Coordinator will serve to support: <ul style="list-style-type: none"> Development of annual operating plans Coordination and cooperation between agencies, organizations, and communities Implementation of projects identified in this CWPP Efforts regarding public outreach, awareness, and knowledge Volunteer fire departments and fire safe councils with building capacity Acquisition of grant funding Fostering of local forestry and mitigation businesses through strategic partnerships and workforce development initiatives The Fire Marshal would serve to support code enforcement and oversight of regulatory compliance, among other responsibilities 	<p>Improve local ability and self-reliance of Inyo County to address its wildfire concerns</p> <p>Enhance wildfire response capabilities</p>	<p>Annual review of outreach materials</p> <p>Schedule frequent check-in to monitor progress and effectiveness</p>	<ul style="list-style-type: none"> Staffing for Adequate Fire and Emergency Response (SAFER) USFS CWDG California Fire Safe Council Grants California Fire Foundation Grant Program Community Economic Resilience Fund Action, Implementation, & Mitigation Inyo County general fund

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FR #6		H	Spring 2025	Resolve communications systems issues in remote communities for enhanced connectivity and emergency response			<ul style="list-style-type: none"> Assess feasibility of upgrading existing communication systems to improve intra- and interdepartmental communications <ul style="list-style-type: none"> Explore the Inmarsat satellite communication system or related technologies Ensure that communications systems are interoperable and compatible with neighboring jurisdictions and agencies Develop a routine maintenance schedule for communications systems, including regular testing and power supply assessments <ul style="list-style-type: none"> Conduct drills and exercises to test the functionality of communications systems during simulated emergency scenarios Create coverage maps that identify areas with communication aps or weak signals <ul style="list-style-type: none"> Prioritize those areas for infrastructure improvements or satellite based-technology deployment 	Improve efficiency and speed of wildfire response and suppression Enhance emergency response communications and capabilities	Assess annual effectiveness Establish a feedback mechanism to gather input from department members	<ul style="list-style-type: none"> FEMA Building Resilient Infrastructure and Communities Grants (BRIC) California Fire Foundation Grant Program Action, Implementation, & Mitigation
FR #7		M	Ongoing	Plan and implement activities required to address SB552, particularly related to fire flows and water supply	Inyo County	Inyo County Drought Task Force	<ul style="list-style-type: none"> Conduct an assessment of water supply systems and infrastructure throughout the county to identify gaps or areas of improvement Ensure that the county complies with the provisions of SB552 Develop and distribute emergency water supply plans that outline procedures for accessing water during wildfire incidents Coordinate closely with fire departments to align fire flow needs with emergency response strategies 	Protect life and property through improved firefighting response Improve firefighter safety	Annual review of water supply	<ul style="list-style-type: none"> USFS CWDG Grants Wildfire Resilience Program CAL FIRE Grant Programs CalEPA Loans and Grants
FR #8		M	Summer 2025	Enhance wildfire alertness and response by expanding the coverage of Alert California live cameras	Inyo County	Alert California Core University Partners	<ul style="list-style-type: none"> Reach out and coordinate with Alert California Core University Partners to assess interest of expanding camera coverage where there are gaps and/or limited coverage Conduct an assessment of areas to determine high-risk areas with coverage gaps <ul style="list-style-type: none"> Evaluate locations that would be of strategic importance for early detection and situational awareness Consider areas that are known hotspots for fire starts Integrate effort with public outreach campaigns to encourage community members to monitor camera feeds for potential fire starts and early reporting 	Improve efficiency and speed of wildfire response and suppression Reduce wildfire threats to life and property	Annual review of effectiveness and assessment of camera locations	<ul style="list-style-type: none"> FEMA Assistance to Firefighters Grants FEMA Staffing for Adequate Fire and Emergency Response California Fire Foundation Grant Program

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FR #9		M	Spring 2026	Establish a Fuels management crew: create a dedicated crew trained in fuels management, defensible space inspections, and community engagement. The crew will conduct fuels reduction projects, collaborate with fire departments, and contribute to increased local capacity for wildfire prevention and firefighting	Inyo County	Inyo County, CAL FIRE, USFS, BLM, IMRCD, Cerro Coso	<ul style="list-style-type: none"> Investigate opportunities to create employment and expand the fire and fuels management workforce through the Community Economic Resilience Fund <ul style="list-style-type: none"> A fuels management crew could be utilized as a cross county (Inyo-Mono) resource to provide support during wildfire incident response, while simultaneously achieving significant progress in fuels management and defensible space inspections in the region Research providing job training through community college, CAL FIRE Fire Academy, internships, etc. Provide crew members with extensive training in fuels management, wildland fire, defensible space assessments, and wildfire prevention, ensuring they meet all relevant qualifications <ul style="list-style-type: none"> The crew may also be trained in post-fire projects (e.g., vegetation restoration and monitoring protocols for completed fuels reduction projects) Allocate the necessary resources, equipment, and funding to support the crew and their activities Collaborate with local fire departments to assist in firefighting efforts when necessary, adding to local firefighting capacity Seek a partnership with Mono County to tackle the initiative jointly Coordinate wildland fire training and qualification requirements with state and federal agencies 	Enhance public and firefighter safety and mitigate wildfire risk within the county	<p>Convene annually to assess and document the status of firefighting capabilities.</p> <p>Maintain list of trained personnel and volunteers that can be utilized across all field and incident command positions.</p>	<ul style="list-style-type: none"> Building Resilient Infrastructure and Communities (BRIC) Staffing for Adequate Fire and Emergency Response (SAFER) California Fire Safe Council Grants California Fire Foundation Grant Program Community Economic Resilience Fund Action, Implementation, & Mitigation
FR #10		H	Ongoing	Continue to support implementation of projects identified in the Independence and 40 Acres CWPPs	Independence and 40 Acres	Refer to the Independence and 40 Acres CWPPs	<ul style="list-style-type: none"> Refer to the Independence and 40 Acres CWPPs 	<p>Protect life and property through effective wildfire management.</p> <p>Establish cohesive planning approach regarding wildfire management.</p>	Annual maintenance and updates to materials	<ul style="list-style-type: none"> Community Planning Assistance for Wildfire (CPAW) BRIC FP&S Firewise grants National Urban and Community Forest Program California Fire Safe Council Grants Regional Forest and Fire Capacity Grant Program Landscape Scale Restoration Competitive Grant Program

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FR #11		M	Fall 2026	Centralize projects, priorities, and timelines from all relevant agencies into one comprehensive document	Inyo County	Inyo County OES, BLM, CAL FIRE, USFS, NPS, local fire jurisdictions	<ul style="list-style-type: none"> Identify all relevant projects related to wildfire protection and community safety from various agencies Engage and collaborate with relevant stakeholders to gather information on their projects, priorities, and timelines Compile all relevant projects into a single, comprehensive document, ensuring it is organized and easy to navigate Review the compiled document with stakeholders to ensure accuracy and completeness Establish a process for regular updates to the document to reflect changes or new projects 	Increase interagency collaboration and transparency Create opportunities for project synchronization	Regular updates	<ul style="list-style-type: none"> USFS CWDG California Fire Safe Council Grants California Fire Foundation Grant Program Inyo County general fund

Note: See Appendix A to consult relevant regulations and past planning efforts.



Developing an action plan and an assessment strategy that identifies roles and responsibilities, funding needs, and timetables for completing highest-priority projects is an important step in organizing the implementation of the Inyo County CWPP. The previous chapter identifies tentative timelines and monitoring protocols for project recommendations, the details of which are outlined below.

All stakeholders and signatories to this CWPP desire worthwhile outcomes. It is also known that risk reduction work on the ground, for the most part, is often not attainable in a few months—or even years—and typically requires scheduled maintenance (e.g., annual, semi-annual, etc.). The amount of money and effort invested in implementing a plan such as this requires that there be a means to describe, quantitatively and/or qualitatively, if the goals and objectives expressed in this plan are being accomplished according to expectations.

Monitoring and reporting contribute to the long-term evaluation of changes in ecosystems, as well as the knowledge base about how natural resource management decisions affect both the environment and the people who live in it. Furthermore, as the CWPP evolves over time, there may be a need to track changes in policy, requirements, stakeholder changes, and levels of preparedness. These can be significant for any future revisions and/or addendums to the CWPP.

It is recommended that project monitoring be a collaborative effort. There are many resources for designing and implementing community based, multi-party monitoring that could support and further inform a basic monitoring program for the CWPP (Egan 2013). Multi-party monitoring involves a diverse group consisting of community members, community-based groups, regional and national interest groups, Tribal governments and public agencies. Using this multi-party approach increases community understanding of the effects of restoration efforts and trust among restoration partners. Multi-party monitoring may be more time consuming due to the collaborative nature of the work; therefore, a clear and concise monitoring plan must be developed.

Table 5.1 Identifies monitoring strategies for various aspects of all categories of CWPP recommendations and the effects of their implementation, both quantifiable and non-quantifiable, for assessing the progress of the CWPP and increase sustainability of projects. It must be emphasized that these strategies are 1) not exhaustive and 2) dependent on available funds and personnel to implement them.

Table 5.1. Recommended Monitoring Strategies

Monitoring Approach	Method	Lead	Remarks
Project tracking system	Online web app to track hazardous fuels projects spatially, integrating wildfire risk layer to show progress toward wildfire hazard and risk reduction. The web app would include attribute tables that outline project details	County	Interactive tool will be easily updated and identify areas that require additional efforts
Photographic record (documents pre- and post-fuels reduction work, evacuation routes, workshops, classes, field trips, changes in open space, treatment type, etc.)	Establish field GPS location; photo points of cardinal directions; keep photos protected in archival location	Core Team member	Relatively low cost; repeatable over time; used for programs and tracking objectives
Keep a record the number of acres treated (by fuel type, treatment method)	GPS/GIS/fire behavior prediction system; online database	Core Team member	Evaluating costs, potential fire behavior
Keep a record of the number of home ignition zones/defensible space treated to reduce structural ignitability	GPS/Web map	Homeowner	Structure protection
Keep a record of the number of residents/citizens participating in any Plan projects and events	Track attendance at relevant events/public hearings	Core Team member	Evaluate culture change objective
Keep a record of the number of homeowners who have been contacted during public outreach campaigns	Keep and updated online database with the number of homeowners that have been contacted through phone, home visits, or public events	Agency representative	Evaluate effectiveness of public outreach efforts
Keep a record of the number of jobs created through contracts and grants	Online database	Core Team member	Evaluate local job growth
Education outreach: track the number of events and kinds of involvement	Keep an updated online database	Core Team member	Evaluate objectives
Emergency management: assess changes in agency response capacity	Track staffing and equipment changes	Agency representative	Evaluate mutual aid
Track codes and policy changes affecting the Plan	Track relevant policy and evaluate impact	Core Team	Plan changes
Keep a record of the number of stakeholders	Assess the number of stakeholders added or dropped	Core Team	Plan changes
Keep a record of wildfire acres burned, human injuries/fatalities, infrastructure loss, environmental damage, suppression, and rehabilitation costs	Keep an updated comprehensive online database	Core Team	Compare with 5- or 10-year average

5.1 FUELS TREATMENT MONITORING

It is important to evaluate whether fuel treatments have accomplished their defined objectives and whether any unexpected outcomes have occurred.

The strategies outlined in this section consider several variables:

- Do the priorities identified for treatment reflect the goals stated in the plan? Monitoring protocols can help address this question.
- Can there be ecological consequences associated with fuels work? Items to consider include soil movement and/or invasive species encroachment post-treatment. Relatively cost-effective monitoring may help reduce long-term costs and consequences.
- Vegetation will grow back. Thus, fuel break maintenance and fuels modification in both the home ignition zone and at the landscape scale require periodic assessment. Monitoring these changes can help decision-makers identify appropriate treatment intervals.
- Monitoring for all types of fuels treatment is recommended. For example, in addition to monitoring mechanical treatments, it is important to carry out comprehensive monitoring of burned areas to establish the success of pre-fire fuels reduction treatments on fire behavior, as well as monitoring for ecological impacts, repercussions of burning on wildlife, and effects on soil chemistry and physics. Adaptive management is a term that refers to adjusting future management based on the effects of past management. Monitoring is required to gather the information necessary to inform future management decisions. Economic and legal questions may also be addressed through monitoring. In addition, monitoring activities can provide valuable educational opportunities for students.

The monitoring of each fuels reduction project would be site-specific, and decisions regarding the timeline for monitoring and the type of monitoring to be used would be determined by project. The most important part of choosing a fuels project monitoring program is selecting a method appropriate to the people, place, and type of project. Several levels of monitoring activities meet different objectives, have different levels of time intensity, and are appropriate for different groups of people. They include the following:

Minimum—Level 1: Pre- and Post-project Photographs

Appropriate for many individual homeowners who conduct fuels reduction projects on their properties.

Moderate—Level 2: Multiple Permanent Photo Points

Permanent photo locations are established using rebar or wood posts, global positioning system (GPS)-recorded locations, and photographs are taken on a regular basis. Ideally, this process would continue over several years. This approach might be appropriate for more enthusiastic homeowners or for agencies conducting small-scale, general treatments.

High—Level 3: Basic Vegetation Plots

A series of plots can allow monitors to evaluate vegetation characteristics such as species composition, percentage of cover, and frequency. Monitors then can record site characteristics such as slope, aspect, and elevation. Parameters would be assessed pre- and post-treatment.

The monitoring agency should establish plot protocols based on the types of vegetation present and the level of detail needed to analyze the management objectives. This method is appropriate for foresters or other personnel monitoring fuel treatments on forested lands.

Intense—Level 4: Basic Vegetation Plus Dead and Downed Fuels Inventory

The protocol for this level would include the vegetation plots described above but would add more details regarding fuel loading. Crown height or canopy closure might be included for live fuels. Dead and downed fuels could be assessed using other methods, such as Brown's transects (Brown 1974), an appropriate photo series (Ottmar et al. 2000), or fire monitoring (Fire Effects Monitoring and Inventory System [FIREMON]) plots. This method is ideal for foresters or university researchers tracking vegetation changes in forested land.

5.2 IMPLEMENTATION

The Inyo County CWPP makes recommendations for prioritized fuels reduction projects, measures to reduce structural ignitability, and methods for public education and outreach. Implementation projects need to be tailored to the specific project and will be unique to the location depending on available resources and regulations. As aforementioned, on-the-ground implementation of the recommendations in the Inyo County CWPP will require the use of the action plan (recommendation matrices in Chapter 4) as well as an assessment strategy for completing each project. This step will identify the roles and responsibilities of the people and agencies involved, as well as funding needs and timetables for completing the highest-priority projects (SAF 2004). Information pertaining to funding is provided in Appendix F.

5.3 CWPP EVALUATION

CWPPs are intended to reduce the risk from wildfire for a community and surrounding environment. However, over time, communities change and expand, vegetation grows back, and forests and wildlands evolve. As such, the risk of wildfire to communities is constantly changing. The plans and methods to reduce risk must be dynamic to keep pace with the changing environment. An evaluation of the CWPP will gather information and identify whether the plans and strategies are on course to meet the desired outcomes or if modifications are needed to meet expectations. It is recommended that the CWPP be evaluated on an annual basis, which should be completed by convening the existing Core Team so that all entities contribute to the evaluation. The CWPP document and planning goals and objective should be updated annually, based on findings from the evaluation.

Four general steps can be used to evaluate the CWPP:

1. Identify objectives: What are the goals identified in the plan? How are they reached? Is the plan performing as intended?
 - a. Structural ignitability
 - b. Fuel treatments
 - c. Public education and outreach
 - d. Multi-agency collaboration
 - e. Emergency response

2. Assess the changing environment: How have population characteristics and the wildfire environment changed?
 - a. Population change
 - i. Increase or decrease
 - ii. Demographics
 - b. Population settlement patterns
 - i. Distribution
 - ii. Expansion into the WUI
 - c. Vegetation
 - i. Fuel quantity and type
 - ii. Drought and disease impacts
3. Review action items: Are actions consistent with the plan's objectives?
 - a. Check for status, i.e., completed/started/not started
 - b. Identify completed work and accomplishments
 - c. Identify challenges and limitations
 - d. Identify next steps
4. Assess results: What are the outcomes of the action items?
 - a. Multi-agency collaboration
 - i. Who was involved in the development of the CWPP?
 - ii. Have partners involved in the development process remained involved in the implementation?
 - iii. How has the planning process promoted implementation of the CWPP?
 - iv. Have CWPP partnerships and collaboration had a beneficial impact on the community?
 - b. Risk assessment
 - i. How is the risk assessment utilized to make decisions about fuel treatment priorities?
 - ii. Have there been new wildfire-related regulations?
 - iii. Are at-risk communities involved in mitigating wildfire risk?
 - c. Hazardous fuels
 - i. How many acres have been treated (types of treatments?)?
 - ii. How many projects are cross-boundary?
 - iii. How many residents have participated in creating defensible space?
 - d. Structural ignitability
 - i. Have there been updates to fire codes and ordinances?
 - ii. How many structures have been lost to wildfire?

- iii. Has the CWPP increased public awareness of structural ignitability and reduction strategies?
- e. Public education and outreach
 - i. Has public awareness of wildfire and mitigation strategies increased?
 - ii. Have residents been involved in wildfire mitigation activities?
 - iii. Has there been public involvement?
 - iv. Have vulnerable populations been involved?
- f. Emergency response
 - i. Has the CWPP been integrated into relevant plans (e.g., hazard mitigation or emergency operations)?
 - ii. Is the CWPP congruent with other hazard mitigation planning efforts?
 - iii. Has availability and capacity of local fire departments changed since the CWPP was developed?

5.4 TIMELINE FOR UPDATING THE CWPP

The HFRA allows for maximum flexibility in the CWPP planning process, permitting the Core Team to determine the time frame for updating the CWPP. The Core Team members are encouraged to meet on an annual basis to review the project list, discuss project successes, and strategize regarding project implementation funding. It is suggested that the evaluation framework above be used annually to make plan updates, and a more formal revision be made on the fifth anniversary of signing and every 5 years following.

ABBREVIATIONS AND ACRONYMS

°F	degrees Fahrenheit
ACEC	area of critical environmental concern
AFN	Access and Functional Needs
AMMs	avoidance and minimization measures
ATV	all-terrain vehicle
BAER	Burned Area Emergency Rehabilitation
BDU	San Bernardino Unit
BLM	Bureau of Land Management
BMP	best management practice
Btu/ft/sec	British thermal units per foot per second
CA FMTF	California Forest Management Task Force
CA GOPR	California Governor's Office of Planning and Research
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CaVTP	California Vegetation Treatment Program
CAR	community at risk
CCIP	California Climate Investments Program
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CDI	California Department of Insurance
CEQA	California Environmental Quality Act
CFPC	California Forest Pest Council
ch/hr	chains per hour
CIG	Conservation Innovation Grants
Cohesive Strategy	National Cohesive Wildland Fire Management Strategy
CRS	Congressional Research Service
CWA	Clean Water Act
CWPP	community wildfire protection plan
DEM	digital elevation model
DHS	Department of Homeland Security
EAS	Emergency Alert System
EIR	Environmental Impact Report
EMS	Emergency Management System
EPA	U.S. Environmental Protection Agency

EQIP	Environmental Quality Incentives Program
ESCI	Emergency Services Consulting International
ESRI	Environmental Systems Research Institute
ESWA	Eastern Sierra Wildfire Alliance
FAC	fire-adapted community
FEMA	Federal Emergency Management Agency
FLAME	Federal Land Assistance, Management and Enhancement Act
FP&S	Fire Prevention and Safety
FRA	Federal Responsibility Area
FRAP	Fire and Resource Assessment Program
FRI	fire return interval
GAID	Geographic Area Interagency Division
GIS	geographic information system
GPS	global positioning system
HFRA	Healthy Forests Restoration Act of 2003
HIZ	home ignition zone
HMP	hazard mitigation plan
HVRA	highly valued resource or asset
ICARP	Integrated Climate Adaptation and Resiliency Program
ICC	International Code Council
IFTDSS	Interagency Fuel Treatment Decision Support System
ISO	Insurance Services Office
JPA	Joint Powers Agreement
LADWP	Los Angeles Department of Water and Power
LRA	Local Responsibility Area
MFI	mean fire interval
MND	mitigated negative declaration
NEMO	Northern and Eastern Mojave
NEPA	National Environmental Policy Act
ND	negative declaration
NFP	National Fire Plan
NFPA	National Fire Protection Association
NIFC	National Interagency Fire Center
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service

NRCS	Natural Resources Conservation Service
NWCG	National Wildfire Coordinating Group
OEHHA	California Office of Environmental Health Hazard Assessment
OES	Office of Emergency Services
OSCC	Southern California Geographic Coordination Center
PERI	Public Entity Risk Institute
PPE	personal protective equipment
PRC	Public Resources Code
RAWS	remote automated weather station
RFA	Rural Fire Assistance
SAF	Society of American Foresters
SAFER	Staffing for Adequate Fire and Emergency Response
SCE	Southern California Edison
SE	statutory exemption
SHPO	State Historic Preservation Office
SOI	sphere of influence
SRA	State Responsibility Area
SWCA	SWCA Environmental Consultants
Task Force	California Forest Management Task Force
TRA	temporary refuge area
UCANR	University of California, Agriculture and Natural Resources
ULI	Urban Land Institute
USDA	U.S. Department of Agriculture
USDOJ	U.S. Department of the Interior
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VAR	value at risk
VegCAMP	Vegetation Classification and Mapping Program
WFDSS	Wildland Fire Decision Support System
WRSC	Western Regional Strategy Committee
WUI	wildland-urban interface

GLOSSARY

Aspect: Cardinal direction toward which a slope faces in relation to the sun (NWCG 2021b).

Active Crown Fire: A crown fire in which the entire fuel complex is involved in flame, but the crowning phase remains dependent on heat released from surface fuel for continued spread. An active crown fire presents a solid wall of flame from the surface through the canopy fuel layers. Flames appear to emanate from the canopy as a whole rather than from individual trees within the canopy. Active crown fire is one of several types of crown fire and is contrasted with **passive crown fires**, which are less vigorous types of crown fire that do not emit continuous, solid flames from the canopy (SWCA).

Available Canopy Fuel: The mass of canopy fuel per unit area consumed in a crown fire. There is no post-frontal combustion in canopy fuels, so only fine canopy fuels are consumed. It is assumed that only the foliage and a small fraction of the branchwood is available (Wooten 2021).

Available Fuel: The total mass of ground, surface and canopy fuel per unit area available to be consumed by a fire, including fuels consumed in postfrontal combustion of duff, organic soils, and large woody fuels (Wooten 2021).

Backfiring: Intentionally setting fire to fuels inside a control line to contain a fire (Wooten 2021).

Biomass: Organic material. Also refers to the weight of organic material (e. g. biomass roots, branches, needles, and leaves) within a given ecosystem (Wooten 2021).

Burn Severity: A qualitative assessment of the heat pulse directed toward the ground during a fire. Burn severity relates to soil heating, large fuel and duff consumption, consumption of the litter and organic layer beneath trees and isolated shrubs, and mortality of buried plant parts (SWCA).

Canopy: The more or less continuous cover of branches and foliage formed collectively by adjacent trees and other woody species in a forest stand. Where significant height differences occur between trees within a stand, formation of a multiple canopy (multi-layered) condition can result (SWCA).

Chain: Unit of measure in land survey, equal to 66 feet (20 m) (80 chains equal 1 mile). Commonly used to report fire perimeters and other fireline distances. Popular in fire management because of its convenience in calculating acreage (example: 10 square chains equal 1 acre) (New Mexico Future Farmers of America 2021).

Climate adaptation: Adaptation is an adjustment in natural or human systems to a new or changing environment. Adaptation to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities (CA GOPR 2022).

Climate Change: A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods (CA GOPR 2022).

Community Assessment: An analysis designed to identify factors that increase the potential and/or severity of undesirable fire outcomes in WUI communities (SWCA).

Communities at Risk (CAR): Defined by the HFRA as “Wildland-Urban Interface Communities within the vicinity of federal lands that are at high risk from wildfire.”

- CAL FIRE expanded on this definition for California including all communities (regardless of distance from federal lands) for which a significant threat to human life or property exists as a result of a wildland fire event. California uses the following three factors to determine at risk communities: 1) high fuel hazard, 2) probability of a fire, and 3) proximity of intermingled wildland fuels and urban environments that are near fire threats (CA GOPR 2022).

Community Emergency Response Team (CERT): The CERT program educates volunteers about disaster preparedness for the hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. CERT offers a consistent, nationwide approach to volunteer training and organization that professional responders can rely on during disaster situations, allowing them to focus on more complex tasks (Ready 2021).

Community Wildfire Protection Plan (CWPP): A planning document that seeks to reduce the threat to life and property from wildfire by identifying and mitigating wildfire hazards to communities and infrastructure located in the WUI. Developed from the HFRA. Addresses issues such as wildfire response, hazard mitigation, community preparedness, or structure protection (SWCA).

Conditional Surface Fire: A potential type of fire in which conditions for sustained active crown fire spread are met but conditions for crown fire initiation are not. If the fire begins as a surface fire, then it is expected to remain so. If it begins as an active crown fire in an adjacent stand, then it may continue to spread as an active crown fire (Wooten 2021).

Contain: A tactical point at which a fire's spread is stopped by and within specific contain features, constructed or natural; also, the result of stopping a fire's spread so that no further spread is expected under foreseeable conditions. For reporting purposes, the time and date of containment. This term no longer has a strategic meaning in Federal wildland fire policy (Wooten 2021).

Control: To construct fireline or use natural features to surround a fire and any control spot fires therefrom and reduce its burning potential to a point that it no longer threatens further spread or resource damage under foreseeable conditions. For reporting purposes, the time and date of control. This term no longer has a strategic meaning in Federal wildland fire policy (Wooten 2021).

Cover type: The type of vegetation (or lack of it) growing on an area, based on cover type minimum and maximum percent cover of the dominant species, species group or non-living land cover (such as water, rock, etc.). The cover type defines both a qualitative aspect (the dominant cover type) as well as a quantitative aspect (the abundance of the predominant features of that cover type) (Wooten 2021).

Creeping Fire: A low intensity fire with a negligible rate of spread (Wooten 2021).

Crown Fire: A fire that advances at great speed from crown to crown in tree canopies, often well in advance of the fire on the ground (National Geographic 2021).

Defensible Space: An area around a structure where fuels and vegetation are modified, cleared, or reduced to slow the spread of wildfire toward or from a structure. The design and distance of the defensible space is based on fuels, topography, and the design/materials used in the construction of the structure (SWCA).

- In California, PRC Section 4291, “defensible space” refers to a 100-foot perimeter around a structure in which vegetation (fuels) must be maintained in order to reduce the likelihood of

ignition. This space may extend beyond property lines, or 100 feet as required by State law as well as local ordinances, rules, and regulations (CA GOPR 2022).

Duff: The layer of decomposing organic materials lying below the litter layer of freshly fallen twigs, needles, and leaves and immediately above the mineral soil (SWCA).

Ecosystem: An interacting natural system including all the component organisms together with the abiotic environment and processes affecting them (SWCA).

Environmental Conditions: That part of the fire environment that undergoes short-term changes: weather, which is most commonly manifest as windspeed, and dead fuel moisture content (Wooten 2021).

Escape Route: A preplanned and understood route firefighters take to move to a safety zone or other low-risk area. When escape routes deviate from a defined physical path, they should be clearly marked (flagged) (SWCA).

Evacuation: The temporary movement of people and their possessions from locations threatened by wildfire (SWCA).

Federal Responsibility Area (FRA): A term specific to California, designating areas where the federal government is responsible for fire response efforts. These areas include lands under federal ownership (CA GOPR 2022).

Fire Adapted Communities: A fire-adapted community collaborates to identify its wildfire risk and works collectively on actionable steps to reduce its risk of loss. This work protects property and increases the safety of firefighters and residents (USFA 2021b).

Fire Behavior: The manner in which fuel ignites, flame develops, and the fire spreads and exhibits other related phenomena as determined by the interaction of fuels, weather, and topography (Fire Research and Management Exchange System 2021).

Fire Break: A natural or constructed barrier used to stop or check fires that may occur, or to provide a control line from which to work.

Fire Environment: The characteristics of a site that influence fire behavior. In fire modeling the fire environment is described by surface and canopy fuel characteristics, windspeed and direction, relative humidity, and slope steepness (Wooten 2021).

Fire Frequency: A broad measure of the rate of fire occurrence in a particular area. For historical analyses, fire frequency is often expressed using the FRI calculation. For modern-era analyses, where data on timing and size of fires are recorded, fire frequency is often best expressed using fire rotation (SWCA).

Fire Hazard: Fire hazard is the potential fire behavior or fire intensity in an area, given the type(s) of fuel present – including both the natural and built environment – and their combustibility (CA GOPR 2022).

Fire Hazard Severity Zone (FHSZ): FHSZs are defined based on vegetation, topography, and weather (temperature, humidity and wind), and represents the likelihood of an area burning over a 30- to 50-year time period without considering modifications such as fuel reduction efforts. In California, CAL FIRE maintains FHSZ data for the entire state. There are three classes of fire hazard severity ratings within FHSZs: moderate, high, and very high (CA GOPR 2022).

Fire History: The chronological record of the occurrence of fire in an ecosystem or at a specific site. The fire history of an area may inform planners and residents about the level of wildfire hazard in that area (SWCA).

Fire Intensity: A general term relating to the heat energy released in a fire (SWCA).

Fireline Intensity: Amount of heat release per unit time per unit length of fire front. Numerically, the product of the heat of combustion, quantity of fuel consumed per unit area in the fire front, and the rate of spread of a fire, expressed in kilowatts per minute (SWCA). This expression is commonly used to describe the power of wildland fires, but it does not necessarily follow that the severity, defined as the vegetation mortality, will be correspondingly high (Wooten 2021).

Fire Prevention: Activities such as public education, community outreach, planning, building code enforcement, engineering (construction standards), and reduction of fuel hazards that is intended to reduce the incidence of unwanted human-caused wildfires and the risks they pose to life, property or resources (CA GOPR 2022).

Fire Regime: A measure of the general pattern of fire frequency and severity typical to a particular area or type of landscape: The regime can include other metrics of the fire, including seasonality and typical fire size, as well as a measure of the pattern of variability in characteristics (SWCA).

Fire Regime Condition Class: Condition classes are a function of the degree of fire regime condition class departure from historical fire regimes resulting in alterations of key ecosystem components such as composition structural stage, stand age, and canopy closure (Wooten 2021).

Fire Return Interval (FRI): Number of years (interval) between two successive fires in a designated area (SWCA).

Fire Severity: A qualitative measure of the immediate effects of fire on the fire severity ecosystem. It relates to the extent of mortality and survival of plant and animal life both aboveground and belowground and to loss of organic matter. It is determined by heat released aboveground and belowground. Fire Severity is dependent on intensity and residence dependent of the burn. For trees, severity is often measured as percentage of basal area removed. An intense fire may not necessarily be severe (Wooten 2021).

Fire Risk: “Risk” takes into account the intensity and likelihood of a fire event to occur as well as the chance, whether high or low, that a hazard such as a wildfire will cause harm. Fire risk can be determined by identifying the susceptibility of a value or asset to the potential direct or indirect impacts of wildfire hazard events (CA GOPR 2022).

Flammability: The relative ease with which fuels ignite and burn regardless of the quantity of the fuels (SWCA).

Flame Length: The length of flames in the propagating fire front measured along the slant of the flame from the midpoint of its base to its tip. It is mathematically related to fireline intensity and tree crown scorch height (Wooten 2021).

Foliar Moisture content: Moisture content (dry weight basis) of live foliage, foliar moisture content expressed as a percent. Effective foliar moisture content incorporates the moisture content of other canopy fuels such as lichen, dead foliage, and live and dead branchwood (Wooten 2021).

Forest Fire: uncontrolled burning of a woodland area (National Geographic 2021).

Fuel Break: A natural or manmade change in fuel characteristics which affects fire behavior so that fires burning into them can be more readily controlled (NWCG 2021c).

Fuel Complex: The combination of ground, surface, and canopy fuel strata (Wooten 2021).

Fuel Condition: Relative flammability of fuel as determined by fuel type and environmental conditions (SWCA).

Fuel Continuity: A qualitative description of the distribution of fuel both horizontally and vertically. Continuous fuels readily support fire spread. The larger the fuel discontinuity, the greater the fire intensity required for fire spread (Wooten 2021).

Fuel Loading: The volume of fuel in a given area generally expressed in tons per acre (SWCA). Dead woody fuel loadings are commonly described for small material in diameter classes of 0 to 0.25, 0.25 to 1, and 1 to 3 inches and for large material greater than 3 inches (Wooten 2021).

Fuel Management/Fuel Reduction: Manipulation or removal of fuels to reduce the potential fire behavior and the likelihood of ignition. Fuel reduction measures can reduce potential damage to natural ecosystems and values at risk in case of a wildfire. Fuel reduction methods include prescribed fire, mechanical treatments (mowing, chopping), herbicides, biomass removal (thinning or harvesting of trees, harvesting of pine straw), and grazing. Fuel management techniques may sometimes be combined for greater effect (SWCA).

Fuel Model: A set of surface fuel bed characteristics (load and surface-area-to-fuel model volume-ratio by size class, heat content, and depth) organized for input to a fire model (Wooten 2021).

Fuel Modification: The manipulation or removal of fuels (i.e., combustible biomass such as wood, leaves, grass, or other vegetation) to reduce the likelihood of igniting and to reduce fire intensity. Fuel modification activities may include lopping, chipping, crushing, piling and burning, including prescribed burning. These activities may be performed using mechanical treatments or by hand crews. Herbicides and prescribed herbivory (grazing) may also be used in some cases. Fuel modification may also sometimes be referred to as “vegetation treatment” (CA GOPR 2022).

Fuel Moisture Content: This is expressed as a percent or fraction of fuel moisture content weight (dry) of fuel. It is the most important fuel property controlling flammability. In living plants, it is physiologically bound. Its daily fluctuations vary considerably by species but are usually above 80 to 100 percent. As plants mature, moisture content decreases. When herbaceous plants cure, their moisture content responds as dead fuel moisture content, which fluctuates according to changes in temperature, humidity, and precipitation (Wooten 2021).

Fuel Treatment: The manipulation or removal of fuels to minimize the probability of ignition and/or to reduce potential damage and resistance to fire suppression activities (NWCG 2021d). Synonymous with fuel modification.

Grazing: There are two types of grazing: traditional grazing and targeted grazing. Traditional grazing refers to cattle that are managed in extensive pastures to produce meat. Targeted grazing involves having livestock graze at a specific density for a given period of time for the purpose of managing vegetation. Even though both kinds of grazing manage fuel loading in range- and forested lands, targeted grazing is different in that its sole purpose is to manage fuels. Targeted grazing is done by a variety of livestock species such as sheep, goats, or cows (UCANR 2019b).

Ground Fire: Fire that burns organic matter in the soil, or duff/humus, usually does not appear at the surface (National Geographic 2021).

Ground Fuels: Fuels that lie beneath surface fuels, such as organic soils, duff, decomposing litter, buried logs, roots, and the below-surface portion of stumps (Wooten 2021).

Hazard: A “hazard” can be defined generally as an event that could cause harm or damage to human health, safety, or property (CA GOPR 2022).

Hazardous Areas: Those wildland areas where the combination of vegetation, topography, weather, and the threat of fire to life and property create difficult and dangerous problems (SWCA).

Hazardous Fuels: A fuel complex defined by type, arrangement, volume, condition, and location that poses a threat of ignition and resistance to fire suppression (NWCG 2021e).

Hazardous Fuels Reduction: Any strategy that reduces the amount of flammable material in a fire-prone ecosystem. Two common strategies are mechanical thinning and controlled burning (Wooten 2021).

Hazard Reduction: Any treatment that reduces the threat of ignition and spread of fire (SWCA).

Highly Valued Resources and Assets (HVRAs): Landscape features that are influenced positively and/or negatively by fire. Resources are naturally occurring, while assets are human-made (IFTDSS 2023).

Ignition: The action of setting something on fire or starting to burn (SWCA).

Incident: An occurrence or event, either natural or person-caused, which requires an emergency response to prevent loss of life or damage to property or natural resources (Wooten 2021).

Influence Zone: An area that, with respect to wildland and urban fire, has a set of conditions that facilitate the opportunity for fire to burn from wildland fuels to the home and or structure ignition zone (NWCG 2021f).

Initial Attack: The actions taken by the first resources to arrive at a wildfire to protect lives and property and to prevent further extension of the fire (SWCA).

Invasive Species: An introduced, nonnative organism (disease, parasite, plant, or animal) that begins to spread or expand its range from the site of its original introduction and that has the potential to cause harm to the environment, the economy, or to human health (USGS 2021).

Ladder Fuels: Fuels that provide vertical continuity allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease (SWCA).

Litter: Recently fallen plant material that is only partially decomposed and is still discernible (SWCA).

Local Responsibility Area (LRA): A term specific to California, designating areas where the local government is responsible for wildfire protection. The Local Responsibility Area (LRA) includes incorporated cities, cultivated agricultural lands, and portions of the desert. Local responsibility area fire protection is typically provided by city fire departments, FPDs, counties, and by CAL FIRE under contract to local government (CA GOPR 2022).

Manual Treatments: Felling and piling of fuels done by hand. The volume of material generated from a manual fuel treatment is typically too small to warrant a biomass sale therefore collected material is disposed of by burning or chipping. The work can be performed by either a single individual or a large, organized crew with powered equipment (UCANR 2021a).

Mechanized Treatments: Mechanical treatments pulverize large continuous patches of fuel to reduce the volume and continuity of material. Mechanical treatments can be applied as either mastication or chipping treatments. Both treatments shred woody material, but mastication leaves residue on-site while chipping collects the particles for transportation off site. Similar to hand treatments, mechanical treatments can target specific areas and vegetation while excluding areas of concern. In addition, mechanical treatment is easily scalable to large areas (>30 acres) with little added cost (UCANR 2021b).

Mitigation: Action that moderates the severity of a fire hazard or risk (SWCA).

Mutual Aid: Assistance in firefighting or investigation by fire agencies, irrespective of jurisdictional boundaries (NWCG 2021g).

Native Revegetation: The process of replanting and rebuilding the soil of disturbed land (e.g., burned) with native plant species (USDA 2005).

Native Species: A species that evolved naturally in the habitat, ecosystem, or region as determined by climate, soil, and biotic factors (USDA 2005).

National Cohesive Strategy: The National Cohesive Wildland Fire Management Strategy is a strategic push to work collaboratively among all stakeholders and across all landscapes, using best science, to make meaningful progress toward the three goals:

- Resilient Landscapes
- Fire Adapted Communities
- Safe and Effective Wildfire Response

Vision: To safely and effectively extinguish fire when needed; use fire where allowable; manage our natural resources; and as a nation, to live with wildland fire (Forests and Rangelands 2021).

Overstory: That portion of the trees in a forest which forms the upper or uppermost layer (SWCA).

Passive Crown Fire: A type of crown fire in which the crowns of individual trees or small groups of trees burn, but solid flaming in the canopy cannot be maintained except for short periods. Passive crown fire encompasses a wide range of crown fire behavior, from occasional torching of isolated trees to nearly active crown fire. Passive crown fire is also called torching or candling. A fire in the crowns of the trees in which trees or groups of trees torch, ignited by the passing front of the fire. The torching trees reinforce the spread rate, but these fires may not significantly differ from surface fires (SWCA).

Prescribed Burning: Any fire ignited by management actions under specific, predetermined conditions to meet specific objectives related to hazardous fuels or habitat improvement. Usually, a written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition (USFS 2021a).

Rate of Spread: The relative activity of a fire in extending its horizontal dimensions. It is expressed as rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area, depending on the intended use of the information. Usually, it is expressed in chains or acres per hour for a specific period in the fire's history (NWCG 2021h).

Resilience: Resilience is the capacity of any entity – an individual, a community, an organization, or a natural system – to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience (CA GOPR 2022).

Response: Movement of an individual firefighting resource from its assigned standby location to another location or to an incident in reaction to dispatch orders or to a reported alarm (SWCA).

Safety Element: One of the seven mandatory elements of a local general plan (a jurisdictional plan that forms the foundation for future development), the safety element must identify hazards and hazard abatement provisions to guide local decisions related to zoning, subdivisions, and entitlement permits. The element should contain general hazard and risk reduction strategies and policies supporting hazard mitigation measures (CA GOPR 2022).

Slash: Debris left after logging, pruning, thinning, or brush cutting. Slash includes logs, chips, bark, branches, stumps, leaves/needles, and broken trees or brush that may be fuel for a wildfire (SWCA).

Slope Percent: The ratio between the amount of vertical rise of a slope and horizontal distance as expressed in a percent. One hundred feet of rise to 100 feet of horizontal distance equals 100 percent (NWCG 2021i).

State Responsibility Area (SRA): A term specific to California, designating areas where the state has financial responsibility for wildland fire protection. Incorporated cities and lands under federal ownership are not included in the SRA. Lands under federal ownership are in the federal responsibility area (CA GOPR 2022).

Suppression: The most aggressive fire protection strategy, it leads to the total extinguishment of a fire (SWCA).

Surface Fire: A fire that burns in surface fuels such as litter, downed woody debris, grass, and other low-level living plants (NWCG 2012)

Surface Fuel: Fuels lying on or near the surface of the ground, consisting of leaf and needle litter, dead branch material, downed logs, bark, tree cones, grass, and low-stature living plants (SWCA).

Structural Ignitability: The ability of structures (such as homes or fences) to catch fire (SWCA).

Topography: The arrangement of the natural and artificial physical features of an area (SWCA).

Total Fuel Load: The mass of fuel per unit area that could possibly be consumed in a hypothetical fire of the highest intensity in the driest fuels (Wooten 2021).

Tree Crown: The primary and secondary branches growing out from the main stem, together with twigs and foliage (SWCA).

Understory: Low-growing vegetation (herbaceous, brush or reproduction) growing under a stand of trees. Also, that portion of trees in a forest stand below the overstory (SWCA).

Understory Fire: A fire burning in the understory, more intense than a surface fire with flame lengths of 1 to 3 m (Wooten 2021).

Values and Assets at Risk: The elements of a community or natural area considered valuable by an individual or community that could be negatively impacted by a wildfire or wildfire operations. These values can vary by community and can include public and private assets (natural and manmade) -- such as homes, specific structures, water supply, power grids, natural and cultural resources, community infrastructure-- as well as other economic, environmental, and social values (CA GOPR 2022).

Vulnerable Community: Vulnerable communities experience heightened risk and increased sensitivity to natural hazard and climate change impacts and have less capacity and fewer resources to cope with, adapt to, or recover from the impacts of natural hazards and increasingly severe hazard events because of climate change. These disproportionate effects are caused by physical (built and environmental), social, political, and/ or economic factor(s), which are exacerbated by climate impacts. These factors

include, but are not limited to, race, class, sexual orientation and identification, national origin, and income inequality (CA GOPR 2022).

Wildfire: A “wildfire” can be generally defined as any unplanned fire in a “wildland” area or in the WUI (CA GOPR 2022).

Wildfire Exposure: During fire suppression activities, an exposure is any area/property that is threatened by the initial fire, but in National Fire Incident Reporting System (NFIRS) a reportable exposure is any fire that is caused by another fire, i.e., a fire resulting from another fire outside that building, structure, or vehicle, or a fire that extends to an outside property from a building, structure, or vehicle (USFA 2020).

Wildfire Influence Zone: A wildland area with susceptible vegetation up to 1.5 miles from the interface or intermix WUI (CA GOPR 2022).

Wildland: Those unincorporated areas covered wholly or in part by trees, brush, grass, or other flammable vegetation (CA GOPR 2022).

Wildland Fire: Fire that occurs in the wildland as the result of an unplanned ignition (CA GOPR 2022).

Wildland Fuels (aka fuels): Fuel is the material that is burning. It can be any kind of combustible material, especially petroleum-based products, and wildland fuels. For wildland fire, it is usually live, or dead plant material, but can also include artificial materials such as houses, sheds, fences, pipelines, and trash piles. In terms of vegetation, there are six wildland fuel types (Fuel Type: An identifiable association of fuel elements of distinctive species, form, size, arrangement, or other characteristics that will cause a predictable rate of spread or resistance to control under specified weather conditions.) The six wildland fuel types are (NWCG 2021j):

1. Grass
2. Shrub
3. Grass-Shrub
4. Timber Litter
5. Timber-Understory
6. Slash-Blowdown

Wildland-Urban Interface (WUI): The WUI is the zone of transition between unoccupied land and human development. It is the line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels (USFA 2021a). In the absence of a CWPP, Section 101 (16) of the HFRA defines the WUI as “ (I) an area extending ½ mile from the boundary of an at-risk community; (II) an area within 1 ½ miles of the boundary of an at-risk community, including any land that (1) has a sustained steep slope that creates the potential for wildfire behavior endangering the at-risk community; (2) has a geographic feature that aids in creating an effective fire break, such as a road or ridge top; or (3) is in condition class 3, as documented by the Secretary in the project-specific environmental analysis; (III) an area that is adjacent to an evacuation route for an at-risk community that the Secretary determines, in cooperation with the at-risk community, requires hazardous fuels reduction to provide safer evacuation from the at-risk community.” A CWPP offers the opportunity to establish a localized definition and boundary for the WUI (USFS 2021b).

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SWCA

APPENDIX A: CWPP Planning Process and Background

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PLANNING PROCESS

The SAF, in collaboration with the National Association of Counties and the National Association of State Foresters, developed a guide entitled *Preparing a Community Wildfire Protection Plan: A Handbook for Wildland-Urban Interface Communities* (SAF 2004) to provide communities with a clear process in developing a CWPP. The guide outlines eight steps for developing a CWPP and has been followed in preparing the Inyo County CWPP:

Step One: Convene Decision-makers. Form a Core Team made up of representatives from the appropriate local governments, local fire authorities, and state agencies responsible for forest management.

Step Two: Involve Federal Agencies. Identify and engage local federal representatives and contact and involve other land management agencies as appropriate.

Step Three: Engage Interested Parties. Contact and encourage active involvement in plan development from a broad range of interested organizations and stakeholders.

Step Four: Establish a Community Base Map. Work with partners to establish a base map(s) defining the community's WUI and showing inhabited areas at risk, wildland areas that contain critical human infrastructure, and wildland areas at risk for large-scale fire disturbance.

Step Five: Develop a Community Risk-Hazard Assessment. Work with partners to develop a Community Risk-Hazard Assessment that considers fuel hazards; risk of wildfire occurrence; homes, businesses, and essential infrastructure at risk; other values at risk (VARs); and local preparedness capability. Rate the level of risk for each factor and incorporate this information into the base map as appropriate.

Step Six: Establish Community Priorities and Recommendations. Use the base map and Community Risk-Hazard Assessment to facilitate a collaborative community discussion that leads to the identification of local priorities for treating fuels, reducing structural ignitability and other issues of interest, such as improving fire response capability. Clearly indicate whether priority projects are directly related to the protection of communities and essential infrastructure or to reducing wildfire risks to other community values.

Step Seven: Develop an Action Plan and Assessment Strategy. Consider developing a detailed implementation strategy to accompany the CWPP as well as a monitoring plan that will ensure its long-term success.

Step Eight: Finalize Community Wildfire Protection Plan. Finalize the CWPP and communicate the results to community and key partners.

FIRE MANAGEMENT POLICY

The primary responsibility for WUI fire prevention and protection lies with property owners and state and local governments. Property owners must comply with existing state statutes and local regulations. These primary responsibilities should be carried out in partnership with the federal government and the private sector where applicable. The current Federal Fire Policy states that protection priorities are 1) life, 2) property, and 3) natural resources. These priorities often limit flexibility in the decision-making process, especially when a wildland fire occurs within the WUI.

LEGISLATIVE DIRECTION

Municipal Direction

Codes and Ordinances

Inyo County operates under the Inyo County Code. Inyo County has a *Defensible space and fire hazard reduction* section under *Title 14 Building and Safety*, which designates all of the unincorporated areas as WUI and requires that properties in the WUI to be “maintained in accordance with the defensible space requirements set forth in Government Code Section 51182 and Public Resources Code Section 4291.” You can find more information about this requirement here: <https://ecode360.com/44463646#44463646>.

Additionally, Inyo County has two ordinances regarding “combustible waste materials” and their removal under Title 7: *7.36.040 Fire hazard—Removal—Required* and *7.36.050 Fire hazard—Removal—By city*. These ordinances require the full or partial removal of combustible materials that may pose a fire hazard. In the event of noncompliance, the County may enter the noncompliant premises and remove the combustible material and the owner shall be liable for expenses. You can find more information about these ordinances here: <https://ecode360.com/44462273>.

State Direction

The 2021 California Wildfire and Forest Resilience Action Plan recognizes that California faces continued and urgent threats from catastrophic wildfire. The purpose of this plan is to provide a foundation for supporting healthy, resilient, fire adapted forests. The plan is organized into four overarching goals with sub-goals and their correlated action items. Some of the goals/strategies specific to wildfire include:

1. **Increase Fuel Breaks:** Reduce the risk of wildfire and slow fire spread within the WUI.
2. **Protect Wildfire-Prone homes and Neighborhoods:** Expand and extend defensible space programs.
3. **Improve Utility related wildfire risk:** Ensure electrical corporations are compliant with wildfire regulations.
4. **Create Fire-Safe Roadways:** Ensuring emergency evacuation routes that can function as a fuel break.

Like the 2014 National Strategy, California’s 2019 Strategic Plan, California’s Wildfire and Forest Resilience Action Plan, and FEMA Disaster Mitigation Act of 2000 all mandate community-based planning efforts with full stakeholder participation, coordination, project identification, prioritization, funding review, and multiagency cooperation. In compliance with Title 1 of the HFRA, a CWPP must be mutually agreed upon by the local government, local fire departments, and the state agency responsible for forest management. As outlined in the HFRA, this CWPP is developed in consultation with interested parties and the federal agencies managing land surrounding the at-risk communities. See Figure A.1 for an overview of California’s wildfire regulatory environment.

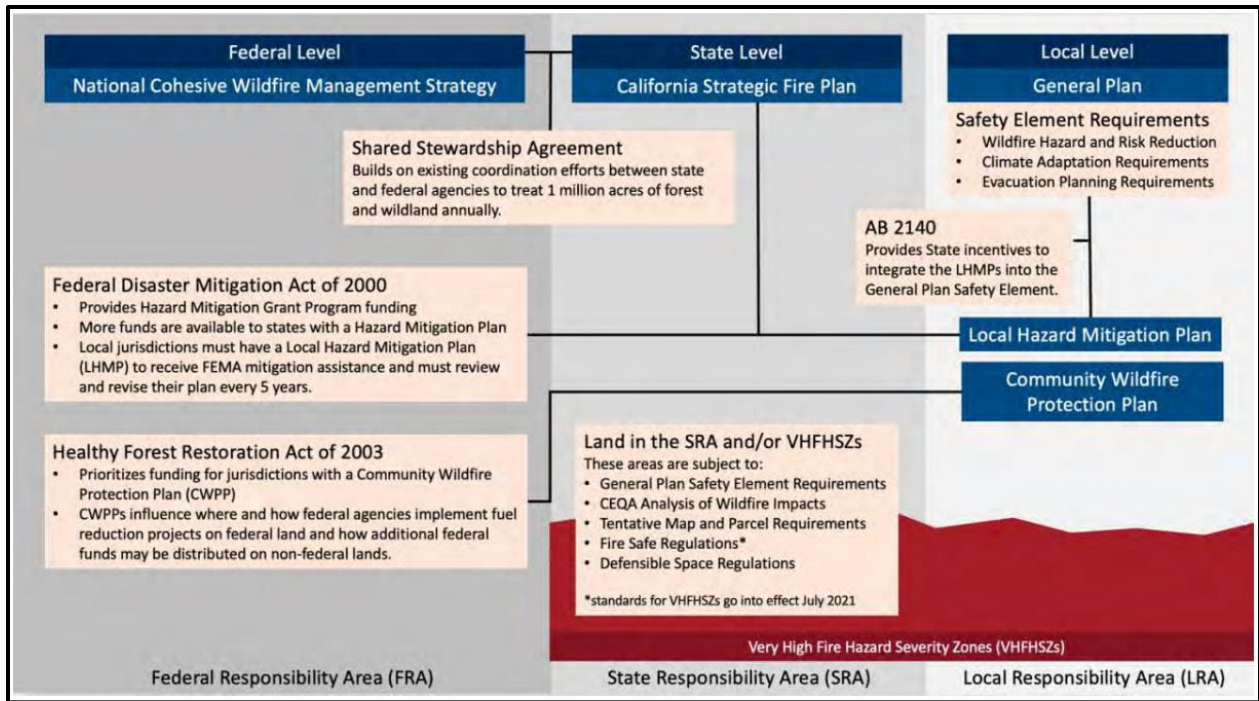


Figure A.1. California’s wildfire regulatory framework. Source: CA GOPR (2022)

California Bills and Regulations

Assembly Bill 179 (2022): In September 2022, Governor Newsom signed Assembly Bill 179 authorizing \$1.3 billion over the next 2 years to build wildfire resilience and bolster forest health throughout the state. The bill allocates \$472 million toward forest health and fire prevention planning, \$130 million toward state-owned land stewardship, \$50 million for post-fire reforestation, \$170 million for state conservancy forest health projects, \$70 million for fire crews and prescribed burning activities, \$40 million for the Regional Forest and Fire Capacity Program, \$30 million for workforce development, and \$25 million to assist small landowners (California Wildfire & Forest Resilience Task Force 2022). This allotment is in alignment with the governor’s Wildfire and Forest Resilience Action Plan, which aims to increase and expedite forest health projects to sustain and protect communities and meet economic and environmental goals.

Assembly Bill 1823 (2019): The bill requires that on or before July 1, 2022, the State Board of Forestry and Fire Protection develop criteria for and maintain a “Fire Risk Reduction Community” list of local agencies located in a State Responsibility Area (SRA) or a very high FHSZ that meet best practices for planning. The existing law requires the State Board to consider specific factors when developing the criteria for the list, including recently developed or updated CWPPs (CA GOPR 2022). This CWPP is in alignment with the requirement stipulated by Assembly Bill 1823 (2019).

Senate Bill 1241: Senate Bill 1241 (2012) revised the safety element stipulations in state law to instruct all cities and counties whose planning area is within the SRA or a very high FHSZ to address and include specific information concerning wildfire hazards and risk, and strategies and policies to address and minimize unreasonable risks associated with wildfire. The specific requirements are codified in Chapter 311 of the bill. As a result, CAL FIRE maintains FHSZ maps and data for the entire state. Three classes of FHSZ classifications exist: moderate, high, and very high. Fire hazard severity considers the amount of vegetation, temperature, wind, humidity, and topography, and represents the likelihood of an area burning over a 30- to 50-year interval (CA GOPR 2022).

Senate Bill 379: Senate Bill 379 (2015) amended Government Code Section 65302(g)(4) to require that all general plans in California address climate change adaptation and resilience as part of the safety portion of the plan. This amendment requires local jurisdictions to add this change as part of the next revision to their local hazard mitigation plan, or if a local hazard mitigation plan has not been adopted, the safety element must be reviewed and updated to include applicable climate adaptation and resilience strategies (CA GOPR 2022). This CWPP may be integrated into the Safety Element of the City General Plan during the next scheduled revision.

Senate Bill 246: As established by Senate Bill 246 in 2015, the Integrated Climate Adaptation and Resiliency Program (ICARP) is the leading program responsible for coordinating response to climate change impacts on a local, regional, and state scale. ICARP utilizes the Adaptation Clearing House, an online database of climate resources, and coordinates with the Technical Advisory Council to aid in facilitation of resiliency efforts. CA GOPR recommends that climate change–related safety updates be made in alignment with ICARP vision, principals, definitions, and wildfire requirements where applicable (CA GOPR 2022).

Senate Bill 901 (Dodd) Wildfires (2018): Senate Bill 901 is the updated legislation of the current existing law (California Emergency Services Act), which among other things, authorizes the governor, with the advice of the Office of Emergency Services, to divide the state into mutual aid regions. A summary of existing law and requirements includes the following:

- Requires the Director of Forestry and Fire Protection to provide grants to entities, including, but not limited to, private or nongovernmental entities, Native American tribes, or local, state, and federal public agencies, for the implementation and administration of projects and programs to improve forest health and reduce greenhouse gas emissions.
- Requires CAL FIRE to provide fire prevention and firefighting implements and apparatus and organize fire crews and other services related to the prevention and control of forest fires.
- Requires the State Forestry Board to adopt regulations implementing minimum fire safety standards related to defensible space that are applicable to SRAs and lands under the authority of CAL FIRE and specifies that these regulations apply to the perimeters and access to all residential, commercial, and industrial building construction within SRAs approved after January 1, 1991.

A summary of key elements of Senate Bill 901 that directly influence local communities in this CWPP include:

- Intends to improve forest health and reduce the risk and intensity of wildfires, thereby protecting the state from loss of life and property damage, reducing greenhouse gas emissions, enhancing ecosystem function, improving wildlife habitats, increasing water supply, improving water quality, reducing the amount of money the state must spend on wildfire response and rebuilding, and increasing carbon sequestration in our forests.
- Provides that conservation easements that involve at least some forest lands that are purchased with state funds must include a landowner agreement to maintain and improve forest health through promotion of a more natural tree density, species composition, and long-term carbon sequestration, among other provisions.
- Requires CAL FIRE to create a Wildfire Resilience Program for purposes of assisting nonindustrial timberland owners with wildfire resilience efforts by providing technical assistance on prescribed topics, including helping applicants navigate the permitting process.

- Expands the Board’s fire safety standards regulations to lands classified as very high FHSZs.
- Requires the Board to periodically update regulations for fuel breaks and greenbelts near communities to provide greater fire safety in both SRAs and very high FHSZs, including a requirement to preserve undeveloped ridgelines, the definition for which will be developed by regulation.
- Requires the Board to develop criteria and maintain a “Fire Risk Adapted Community” list of local agencies that meet best practices for local fire planning. The Board shall consider the communities’ participation in Senate Bill 901, page 6, Firewise USA or the “Fire Adapted Communities” programs, the adoption of the Board’s recommended safety element improvements, and any recently updated CWPPs.
- Requires CAL FIRE to prioritize local assistance to local agencies based on those that are on the “Fire Risk Reduction Community” list.
- Addresses forest management and fire prevention funding, requirements of public utilities, utility debt management, and cost recovery.

Senate Bill 535: Senate Bill 535 (2012) outlines the initial funding from California Climate Investments to benefit communities that have been identified as “Disadvantaged Communities” (DACs). The designation is based on pollution burden, prior designation as a disadvantaged community, and federal land status (i.e., federally recognized tribes) (OEHHA 2023).

Assembly Bill 1550 (2016): California Assembly Bill No. 1550 (AB 1550) aims to address environmental and economic disparities within the state. The bill requires state agencies to prioritize investments and resources in disadvantaged communities that have historically faced higher levels of pollution and economic challenges. It establishes guidelines for allocating funds towards projects that promote sustainable transportation, clean energy, and environmental justice. Additionally, the bill also encourages collaboration between state agencies, local governments, and community organizations to ensure equitable distribution of benefits and opportunities. Its goal is to advance environmental and economic equity by directing resources towards underserved communities and promoting sustainable and inclusive development throughout California (CalEPA 2023).

PRC 4290: PRC 4290 confers the State Board of Forestry and Fire Protection with the authority to adopt regulations for base level fire safety standards with respect to State Responsibility lands and to lands designated as very high FHSZ. The fire safety standards address multiple issues, including fuel modification standards for fuel breaks and greenbelts; road and driveway standards for emergency response access and public evacuation; minimum private water supply reserves for fire suppression; and standards for street, road, and building signage. However, these standards do not replace local regulations that meet or exceed minimum requirements adopted by the State Board (CA GOPR 2022).

PRC Section 4291: PRC 4291 details mandatory defensible space requirements for any person who owns, leases, controls, operates, or maintains a building in an SRA or very high FHSZ within a LRA. The requirements include, but are not limited to, 100 feet of defensible space around homes, removal of vegetation debris from the perimeter and the roof of homes/structures, and removal of vegetation from chimneys or stovepipes. This code was updated in January 2021 to require an ember-resistant zone within 5 feet of a home/structure on or before January 1, 2023 (CA GOPR 2022). The Board of Forestry and Fire Protection is still in the rule development process phase.

Assembly Bill 38 (2019): Assembly Bill 38 (2019) amended sections of the Civil, Government, and Public Resources Codes to set forth a comprehensive wildfire mitigation financial support program, which facilitates cost-effective home/structure hardening and retrofitting to create fire-resistant homes,

businesses, and public structures. The amendments require the State Fire Marshal, in consultation with the Director of Forestry and Fire Protection and the Director of Housing and Community Development, to identify building retrofits and hardening measures eligible for financial assistance under the program. Additionally, the amendments require that CAL FIRE identify defensible space, vegetation management, and fuel treatment procedures eligible for financial assistance. Wildfire hazard areas eligible for financial assistance under the program include LRAs situated within very high FHSZs and SRAs within any FHSZ (CA GOPR 2022).

Senate Bill 1035: Senate Bill 1035 (2018) amended Section 65302 of the California Government Code to require local agencies to update the climate adaptation section (safety element) of the general plan at least every eight years. This mandate would require local agencies to identify new information relating to fire hazards, climate adaptation, and resiliency measures that were not available during the last revision of the safety element (CA GOPR 2022).

Evacuation Planning Requirements: Assembly Bill 747 (2019), Assembly Bill 1409 (2020), and Senate Bill 99 (2019) were signed into law to enhance evacuation planning at the local level. Assembly Bills 747 and 1409 require local agencies to assess evacuation routes and locations under a variety of emergency scenarios. Whereas Senate Bill 99 requires municipalities to identify communities with less than two evacuation routes. These planning mandates should be considered when assessing wildfire risk in the safety element of the general plan (CA GOPR 2022).

PRC 4290.5: Assembly Bill 2911 (2018) added Section 4290.5 to the PRC, which requires the State Board, in consultation with the State Fire Marshal and the local jurisdiction, to identify existing subdivisions with more than 30 dwelling units in the SRA or areas designated as very high FHSZs without secondary egress routes, that are at high risk for fire. Following identification of subdivisions without secondary egress routes, the State Board must provide recommendations to the local government to enhance public safety in such subdivisions. This process must begin on or before July 1, 2021, and be repeated every 5 years thereafter. If available, recommendations made by the Board should feed directly into the community's general plan update (CA GOPR 2022).

PRC 4202: PRC 4202 mandates that the State Fire Marshal classify lands within the SRA into FHSZs. There are three classes of fire hazard severity ratings within FHSZs: moderate, high, and very high (CA GOPR 2022). FHSZs are used for many purposes, such as to identify areas where California's defensible space standards, WUI codes, and the State Minimum Fire Safe Regulations are mandated as well as to identify the level of hazard in a specified area or region. It's important to note that mitigation requirements apply to all zones within the SRA (CAL FIRE 2023a).

CAL FIRE 2022 Fire Hazard Severity Zones Update: In accordance with PRC 4202, CAL FIRE maintains FHSZ data for the entire state. FHSZs were originally determined and released in 2007; however, CAL FIRE recently updated these zones for the SRA in December 2022. The new FHSZs are currently in the public review process. FHSZs are defined based on vegetation, topography, and weather, and represent the probability of the area burning and potential fire behavior in the area. The new iteration of the FHSZs also accounts for land use changes, recent fire history, new wind data, and local climate data. FSHZs for the LRA are currently in development and expected for release in summer of 2023 (CAL FIRE 2023a).

CA PRC 4292–4296 specify vegetation management requirements pertaining to overhead power line infrastructure.

Federal Direction

In response to a landmark fire season in 2000, the National Fire Plan (NFP) was established to develop a collaborative approach among various governmental agencies, including state, federal, and tribal, to actively respond to severe wildland fires and ensure sufficient firefighting capacity for the future. The NFP was followed by a report in 2001 entitled *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: A 10-year Comprehensive Strategy*, which was updated in 2002 to include an implementation plan. This plan was updated once more in 2006, with a similar focus on using a collaborative framework for restoring fire-adapted ecosystems, reducing hazardous fuels, mitigating risks to communities, providing economic benefits, and improving fire prevention and suppression strategies. The 2006 implementation plan also emphasizes information sharing and monitoring of accomplishments and forest conditions, a long-term commitment to maintaining the essential resources for implementation, a landscape-level vision for restoration of fire-adapted ecosystems, the importance of using fire as a management tool, and continued improvements to collaboration efforts (Forests and Rangelands 2006). Progress reports and lessons learned reports for community fire prevention are provided annually.

In 2003, the U.S. Congress recognized widespread declining forest health by passing the Healthy Forests Restoration Act (HFRA), and President Bush signed the act into law (Public Law 108–148). The HFRA was revised in 2009 to address changes to funding and provide a renewed focus on wildfire mitigation (H.R. 4233 - Healthy Forest Restoration Amendments Act of 2009). The HFRA expedites the development and implementation of hazardous fuels reduction projects on federal land and emphasizes the need for federal agencies to work collaboratively with communities. A key component of the HFRA is the development of community wildfire protection plans (CWPPs), which facilitate the collaboration between federal agencies and communities in order to develop hazardous fuels reduction projects and place priority on treatment areas identified by communities in a CWPP. A CWPP also allows communities to establish their own definition of the WUI, which is used to delineate priority areas for treatment. In addition, priority is placed upon municipal watersheds, critical wildlife habitat, and areas impacted by wind throw, insects, and disease. Communities with an established CWPP are given priority for funding of hazardous fuels reduction projects carried out in accordance with the HFRA.

In 2023, the Wildfire Leadership Council sought to update and enhance the strategic direction of the 2014 National Cohesive Wildland Fire Management Strategy framework (Forests and Rangelands 2023). This was done through the 2023 National Cohesive Wildland Fire Management Strategy Addendum Update (2023 Cohesive Strategy). The updated strategy identifies critical emphasis areas that were not identified in the previous framework.

Included among these emphasis areas are:

1. Climate change
2. Workforce capacity, health, and well-being
3. Community resilience (preparation, response, and recovery)
4. Diversity, equity, inclusion, and environmental justice

Thorough analysis of these emphasis areas is provided for within the Addendum Update report, along new management options to address them. Also identified within the update are numerous implementation challenges faced by the 2014 Cohesive Strategy. Examination of these challenges guided the enhancements that were made to the 2023 Cohesive Strategy. The National Strategy takes a holistic

approach to the future of wildfire management, as outlined through the updated vision statement (Forests and Rangelands 2023):

To extinguish fire safely and effectively, when needed; use fire where allowable; manage our natural resources; and collectively, learn to live with wildland fire.

In order to achieve this vision, the updated National Strategy goals are:

1. **Resilient Landscapes:** Landscapes, regardless of jurisdictional boundaries are resilient to fire, insect, disease, invasive species, and climate change disturbances, in accordance with management objectives.
2. **Fire Adapted Communities:** Human populations and infrastructure are as prepared as possible to receive, respond to, and recover from wildland fire.
3. **Safe, Effective, Risk-based Wildfire Response:** All jurisdictions participate in making and implementing safe, effective, efficient risk-based wildfire management decisions (Forests and Rangelands 2014:3).

PAST PLANNING EFFORTS

Local

There are several existing documents relating to fire management in the planning area. This CWPP is meant to supplement and not replace any other existing plans.

Independence and 40 CWPPs: In 2023, the Whitebark Institute partnered with SWCA to develop CWPPs for Independence and 40 Acres, two communities located within Inyo County. The CWPPs aim to assess the wildfire risk and protection needs on a community-wide scale, with the primary goals of safeguarding human life and minimizing property loss due to wildfires. The plans were developed in accordance with HFRA requirements, involving multiple agencies at the state and local levels, prioritizing fuel reduction treatments, suggesting multi-party mitigation and outreach efforts, and recommending measures for residents and communities to reduce the ignitability of structures. Public input was also solicited throughout the development of both projects.

To view these CWPPs, please visit the following webpage:

<https://www.inyocounty.us/services/emergency-services/emergency-management-resources/inyo-county-community-wildfire>

Mono County CWPP: The Mono County Community and Town of Mammoth Lakes CWPP serves as a scientific assessment of wildfire-related hazards and risks in the WUI areas of Mono County, California. Developed in collaboration with various stakeholders, including BLM, USFS, and local fire departments, this updated plan builds on the 2009 CWPP. Through a comprehensive analysis of wildfire threats, vulnerabilities, and mitigation strategies, the document assesses hazards and risks through stakeholder expertise, state-level fire data, and fire behavior modeling, aiming to prioritize mitigation efforts for the County and Town. This plan was developed in alignment with the HFRA (Mono County 2019).

Access and Functional Needs Program: The Access and Functional Needs Program, administered by the Inyo County OES, aims to enhance emergency response assistance for disabled individuals or others with special needs. This involves maintaining a database of individuals with specific requirements to ensure their safety during evacuations or other incidents faced by the community. While the program offers assistive services, it emphasizes that individual and family level preparedness is crucial, as

government personnel may not be able to fully meet the needs of everyone during a disaster. Although the program is currently active, it is undergoing improvements. The registry information is kept confidential and shared only with emergency response agencies to improve their response capabilities.

To learn more and sign up for the services provide by the Access and Functional Needs Program, please visit: https://aspendell.org/info_files/emergency_registration_inyo.pdf

Disaster Preparedness Guide: Inyo County OES has a basic Disaster Preparedness Guide available (Inyo County OES 2021). The objective of the guide is to prepare residents for human-caused or natural disasters. The guide provides a series of preventive action steps for a range of disasters, including wildfire preparedness. The guide recommends preparing a family emergency plan and assembling an emergency kit and other supplies. It also describes shelter and sheltering-in-place options (Inyo County OES 2021).

Inyo County General Plan: Inyo County last completed a comprehensive update of its General Plan in 2001 in compliance with state law (Government Code 65300). The General Plan is a comprehensive guidance document that directs future physical development throughout the county (Inyo County 2001). The General Plan addresses seven mandatory topics. Included in these topics is the safety topic, which establishes policies to protect the public from risks associated with natural and human-caused hazards, e.g., wildfire hazards. Inyo County provides annual progress reports about updates and amendments to the plan on the planning department's section of the county website:

<https://www.inyocounty.us/services/planning-department/inyo-county-general-plan>

Inyo County Community Wildfire Protection Plan: A CWPP was prepared for the entire county in 2009 by Anchor Point Group. This plan (Inyo County 2009) assesses the wildfire hazard throughout the county, provides recommendations for reducing the risks, and outlines a range of fuels modification projects, including fuel breaks, for communities in Inyo County. Of the 26 communities assessed, one was identified as extreme risk, three were identified as very high risk, eight were identified as high risk, 10 were identified as moderate risk, and four were identified as low risk (Inyo County 2009).

Inyo County Multi-Jurisdictional Local Hazard Mitigation Plan: In 2017, Inyo County adopted, and FEMA approved, the Inyo County/City of Bishop Multi-Jurisdictional Hazard Mitigation Plan. The purpose of this plan is to assess human-caused and natural risks to communities throughout Inyo County, and to reduce the potential effects of the hazards by establishing mitigation strategies (Inyo County and City of Bishop 2017). Community and hazard profiles; hazard identification, analysis, and assessments; risk assessments; mitigation and adaptation strategies; and monitoring procedures are all outlined within the plan. In addition, the plan also provides hazard analysis and characterization and some generalized mitigation strategies regarding wildfire.

Inyo County Emergency Operations Plan: Inyo County adopted its current Emergency Operations Plan in 2016. Regarding wildfire, this plan (Inyo County 2016) describes available resources and direction to form a federal-county Unified Command when necessary to respond to a large wildfire. An emergency operations center will coordinate resources from all jurisdictions within Inyo County.

CAL FIRE San Bernardino Unit Strategic Fire Plan: The CAL FIRE San Bernardino Unit (BDU) comprises San Bernardino, Inyo, and Mono Counties. Inyo County is served by the Eastern Sierra Division, which operates one fire engine crew out of the Bishop Station at 2781 South Round Valley Road and two additional BDU fire engine crews out of its Independence Station at 250 East Park Street. The Owens Valley Conservation Camp, which is near the CAL FIRE Bishop station, can staff up to five Type 1 hand crews and one dozer. A program for defensible space inspections assists property owners to

comply with the requirements of Section 4291 of the California PRC. This recently updated (May 2023) strategic fire plan outlines a variety of fire prevention programs and projects (CAL FIRE 2023e).

Southern California Edison Wildfire Mitigation Plan: Southern California Edison (SCE) has an active wildfire mitigation program for its utility infrastructure throughout the state. In 2023, SCE updated its plan to provide an updated risk assessment, provide lessons learned, and highlight actions taken in recent years to reduce ignition from SCE infrastructure. The plan has an overarching goal of reducing SCE equipment-related ignitions (SCE 2023). To achieve this goal, SCE has identified actionable objectives that include increasing system hardening, bolstering situational awareness, and enhancing operational practices. The wildfire mitigation plan provides detailed information on SCE's risk assessment including equipment inventory, weather and wildlife event mapping, and vulnerable communities.

Bishop Fire Department Agency Evaluation: In 2023, the City of Bishop contracted with a consulting firm, Emergency Services Consulting International (ESCI), to develop a report and evaluation of the City's fire department. The two-phase evaluation involves a site visit, interviews, and an assessment of fire stations and equipment, with key recommendations, followed by a deeper analysis into financial, administrative, staffing, and deployment aspects. The findings are reported in depth within the evaluation, along with a range of recommendations aimed at enhancing the fire department's effectiveness, management, and overall service delivery to the community (ESCI 2023).

Los Angeles Department of Water and Power's (LADWP's) Owens Valley Land Management Plan: The Owens Valley and Management Plan (LADWP 2010) outlines the primary land management steps for the lands owned and managed by the LADWP in Owens Valley as directed by the memorandum of understanding between the City of Los Angeles Department of Water and Power, Inyo County, CDFW, California State Lands Commission, Sierra Club, and Owens Valley Committee. Regarding wildfire and wildfire management, the plan focuses on fire management goals and objectives that aim to balance ecological health and resource protection. The primary goals outlined in the plan include the following: improve biodiversity and ecosystem health, protect and enhance habitat for threatened and endangered species, establish a fire response plan, and initiate habitat conservation strategies to enhance and protect threatened and endangered species habitat (where fire management is used as a means for enhancing threatened and endangered species). The Owens Valley and Management Plan also provides a controlled burn management plan (including controlled burn protocols) which describe when and where controlled burns should occur. The plan further details fire suppression capabilities and response times on LADWP-owned lands. Currently, Minimum Impact Suppression Tactics (MIST) is the primary tactic and strategy for suppression of fires on lands owned and managed by the LADWP. Firefighter and public safety are also the highest priorities when responding to, suppressing, and managing wildfire. Finally, the plan also details personnel responsibilities and wildfire guidelines/considerations for incidents. Local planners should consult this plan and the LADWP when managing wildfire on lands owned by LADWP in Inyo County.

Eastern Sierra Nevada Riparian Areas Assessment for Fuels Reduction: This plan provides initial documentation for local entities to begin looking at feasibility of treatment options and what the steps would be for CEQA, PRC 21000, and/or NEPA compliance. This plan also identifies specific environmental factors and constraints associated with potential fuel treatments in biologically sensitive areas. Land agencies and landowners can use this document to mitigate environmental impacts, inform project design, and employ best management practices. Fuel treatments covered in this plan include prescribed burning, mechanical treatments, manual treatments, prescribed herbivory, and use of herbicide (Great Basin Institute 2022). Agencies should consult this document with regard to future fuel treatments in the Owens Valley prior to planning and implementation (https://www.eswildfirealliance.org/files/ugd/53aa1c_f88c92e72a664fba9620d354f46809dc.pdf).

State

Strategic Fire Plan for California: In 2018, CAL FIRE, along with the State Board of Forestry and Fire Protection, developed the Strategic Fire Plan for California (CAL FIRE 2018b). The plan was developed to create a more wildfire resistant environment and community, to increase the understanding of wildfires, and increase cooperation amongst local, state, federal, tribal, and private partnerships. Goals outlined within the plan include identifying natural resources at risk, integrating fire and fuels management tactics with landowners, and implementing post-fire assessments and programs (CAL FIRE 2018b).

California State Hazard Mitigation Plan: In 2018, Cal OES released the latest California State Hazard Mitigation Plan. The intention of the plan was to provide a current update of all past and potential hazards and disasters within California and outline mitigation strategies, risk reduction methods, goals, objectives, strategies, and priorities (Cal OES 2018). Mitigation strategies recommended include strengthening interagency coordination, incorporating climate change into future planning efforts, and establishing a mitigation registry (Cal OES 2018).

Fire Hazard Planning Technical Advisory: In 2022, the California Office of Planning and Research updated the Fire Hazard Planning Technical Advisory. The goal of the guide is to provide a framework for planners and decision makers in addressing hazards, increasing resilience, and reducing risks associated with fire. This guide provides a brief history of fire in the state, impacts to communities, and implications of climate change as well as describes several local, state, and federal wildfire policies and regulations to inform on required planning elements and available resources. This regulatory overview sets the stage for the fire hazard planning guidance chapter, which has recommendations regarding the integration of fire hazard specific elements into general plans. This guide also contains guidance to align hazard plans with broader plans and connect fire hazard planning to relevant matters such as climate adaptation (CA GOPR 2022).

Wildland-Urban Interface Planning Guide: In 2022, in accordance with the requirements of Assembly Bill 75, the CA GOPR, with the Community Wildfire Planning Center and CAL FIRE, created the WUI planning guide to provide recommendations and examples to aid communities in planning for living in the WUI (CA GOPR et al. 2022). The guide serves as a supplement to the Fire Hazard Planning Technical Advisory and discusses several plan categories, detailing their respective purpose, and how they relate to WUI planning. Some plan types referenced include, general, hazard, climate, and wildfire plans. The regulation section of the guide provides required and recommended codes for resilient WUI planning and rationale for how these measures promote a fire safe community. Additional tools and programs that enhance community resilience are detailed in the plan (CA GOPR et al. 2022).

California Cooperative Forest Management Plan: In 2020, the California Cooperative Forest Management Plan was developed CAL FIRE, the USFS, and the Natural Resources Conservation Service (NRCS). This plan is more of a template for forest management plans and outlines topics that should be discussed while planning for fires, such as road systems, property history and conditions, wildlife, water resources, and others (CAL FIRE 2020a).

California's Forests and Rangelands 2017 Assessment: In 2017, CAL FIRE published California's Forests and Rangelands 2017 Assessment. CAL FIRE's Fire and Resource Assessment Program evaluates the amount and size of California's forests and rangelands and analyzes their conditions to establish management and regulatory guidelines. The assessment is used to delineate priority landscapes that aid in focusing investments and other programs to ameliorate issues. The goal of the assessment is to meet both state and federal mandates for natural resource inventories and planning (CAL FIRE 2018a).

Community Wildfire Prevention & Mitigation Report: In 2019 CAL FIRE published the Community Wildfire Prevention & Mitigation Report in response to Executive Order N-05-19, which directs CAL FIRE and other state agencies to recommend administrative, regulatory, and policy changes to prevent and mitigate wildfires. The order stresses taking necessary actions to protect vulnerable populations and to identify backlogs in fuels treatments projects. CAL FIRE identified 35 priority projects that could be implemented right away to reduce public safety risk for over 200 communities. Potential projects included removal of dead trees, vegetation clearing, creation of ingress and egress paths, and creation of fuel breaks and community defensible spaces (CAL FIRE 2019a).

California's Wildfire and Forest Resilience Action Plan: In 2021 the California Forest Management Task Force (CA FMTF) developed California's Wildfire and Forest Resilience Action Plan (CA FMTF 2021). The purpose of the plan was to sustain economic strength of the forests, improve forest health and resilience, and increase the level of fire safety within communities. The plan is separated into four major goals and strategies to achieve said goals (CA FMTF 2021). The goals include increasing the pace and scale of forest health projects, strengthening the protection of communities, managing the forest to achieve the state's economic and environmental goals, and driving innovation while measuring progress. Strategies for increasing community fire safety include increasing fuel breaks, creating fire-safe roadways, and supporting community risk reduction (CA FMTF 2021).

Vegetation Management Program: In addition to the Strategic Fire Plan, CAL FIRE operates a Vegetation Management Program that focuses on addressing resource management and wildfire fuel hazards within SRA lands (CAL FIRE 2021). The program has three management objectives with various sub-goals. The management objectives are the reduction of conflagration of fires, optimization of soil and water productivity, and the protection and improvement of intrinsic floral and faunal species (CAL FIRE 2021).

California Vegetation Treatment Program: In addition to planning documents, the State of California operates the California Vegetation Treatment Program (CalVTP). This program was developed by the Board of Forestry and Fire Protection to create healthy fire regimes, reduce hazardous vegetation that increases wildfire risk, and reduce risk within communities. Prescribed burning, prescribed herbivory, herbicides, mechanical treatments, and manual treatments are used for vegetation management. In addition, you can visit the CalVTP Implementation Database to find current and approved projects. To learn more about this program, visit the following URL: <https://bof.fire.ca.gov/projects-and-programs/calvtp/>

Safer from Wildfire Initiative: This partnership program was established to increase home hardening and defensible space efforts on homes that were not built to current CAL FIRE Standards. The program was developed in a partnership with Cal OES, Planning and Research, California Department of Insurance (CDI), Public Utilities Commission, and CAL FIRE to create pathways for more accessible home insurance by requiring insurers to reward safety and mitigation actions (CDI 2022a). The program works within the three mitigation topics of Protecting the Structure, Protecting the Surroundings, and Working as a Community to identify actionable steps to improving community resilience in a cost-effective way. Each topic has specific measures, such as upgrading to ember resistant vents, clearing under deck vegetation, or working as a community to achieve a Firewise rating (CDI 2022a). The list of actions creates consistency in home hardening. This program has been used to negotiate insurance discounts for individuals and communities based on mitigation achievements at each level. For example, State Farm offers a discount to communities that achieve a Firewise Community rating (CDI 2022b). More information about the Safer from Wildfires initiative and currently available insurance discounts are available at the following URL: [Safer from Wildfires \(ca.gov\)](https://www.firewise.com/safer-from-wildfires)

Federal

U.S. Forest Service

The Land Management Plan is the guiding document for the Inyo National Forest (USFS 2018b). This plan satisfies the Federal Land Policy and Management Act of 1976 and directs all fire management activities in the forest, among other forms of stewardship. The plan outlines the forest's desired conditions and management direction, with a focus on ecological sustainability and diversity of plant and animal communities. It emphasizes non-discrimination and equal access to all programs and activities. The plan outlines "strategic fire management zones" that are designed to pre-assess the risk and benefits of wildland fires, both wildfires and prescribed fires, to areas on the landscape. Also outlined within the plan are specific fire related actions that should be taken to manage wildfire within the planning area. These include enhancing communication with other entities, collaboration with tribal leadership, increasing community's wildfire resilience, restoring ecosystems, conducting regular training for fire response personnel and managers, implementing fuel reduction treatments, and carrying out post-fire rehabilitation.

Bureau of Land Management

BLM Bishop

The BLM Bishop Field Office's Fire Management Plan serves the purpose of integrating national Federal Wildland Fire Management Policy and the National Fire Plan at the local level. It aligns with the Bishop Field Office Resource Management Plan and other relevant plans, complying with federal policy requirements for Fire Management Plans. The fire management plan identifies strategies for responding to wildfires, prescribed fires, non-fire fuels treatment, emergency stabilization, rehabilitation, prevention, education, mitigation, and community assistance. The plan emphasizes firefighter and public safety, ecological considerations, economic viability, scientific basis, and interagency cooperation (BLM 2016a).

An example of wildfire mitigation strategies employed by the BLM is the fuels management program, directing a wide range of active management vegetation treatments using mechanical, biological, and chemical tools, and prescribed fire. The program consists of creating fuel breaks, reducing fuel loads, reducing fire risk near communities, targeted grazing, and applying herbicide to break fire-grass cycles. Fuels treatments are planned and implemented jointly with other BLM programs, and with federal, state, local, and non-governmental collaborators (BLM 2021a). The BLM Bishop Field Office last updated its Resource Management Plan in 1993.

BLM California Desert District

The California Desert Interagency Fire Program (CDIFP) comprises the BLM and the National Park Service (NPS) and includes the five BLM field offices within the California Desert District—Ridgecrest, Barstow, Needles, Palm Springs, and El Centro—and three national parks—Death Valley, Joshua Tree, and the Mojave Preserve.

The CDIFP includes a fuels and mitigation-education program with a unit fuels program manager, a fuels technician, a biological technician, two mitigation-education specialists (wildland fire operations technicians), four mitigation and trespass technicians (with a heavy emphasis on prevention activities and patrolling), and California Conservation Corp hand crew overhead. The California Desert Fuels Management Program began to evolve into the current program in 2002 with the hiring of fuels management staff to begin planning and implementing fuels projects. Treatment methods including prescribed fire, both broadcast and pile burning, mechanical, hand, chemical, and biological are used to

accomplish the unit's treatment goals. Methods are selected based on the vegetation, topography, potential to impact natural resources, and other factors.

National Park Service

The Death Valley National Park General Plan (NPS 2002) describes the overall management direction in the national park. Strategies are utilized to achieve both benefits and protection of natural and cultural resources and to protect life and property. Management action and strategy are assessed on a case-by-case basis and consider life and property considerations, location, wilderness designation, identification of natural or cultural resources at risk, existing vegetation and fuels, terrain, and other factors.

The General Management Plan also emphasized the control of nonnative plants such as *Bromus* sp. and *Schismus* sp. to mitigate wildfire risk, especially in areas where fire was historically uncommon.

Although the General Plan guides overall management direction, the CDIFP specifically directs fire management. The CDIFP allows for a broader implementation of fire management strategies within a comprehensive wildland fire management program consistent with Death Valley's General Management Plan, national interagency fire policies and NPS directives. The plan directs park management to utilize wildland fire and wildland fire suppression in a manner that balances fuel regulation and maintenance of healthy ecosystems. The plan also implements a 10-year comprehensive strategy that prioritizes a collaborative approach for reducing wildland fire risks to communities and the environment. The plan provides management direction for the following: improving wildland fire prevention and suppression strategies; hazardous fuel reduction; and restoring and maintaining fire adapted ecological communities. Moreover, it should be noted that the Death Valley National Park only handles medical and structure fires. The BLM, through its interagency agreement, manages all wildfires.

Tribal

Bishop Paiute Tribe

The Bishop Paiute Tribe of Indians developed a Fire Management Plan in 2014 as a component of the Reservation's Integrated Resource Management Plan (IRMP). This plan covers the reservation's land holdings, fire hazards, and the relevant fire protection agencies. Fire protection is provided by local volunteer fire departments and CAL FIRE through cooperative agreements. The plan discusses the fire management concerns within the planning area, providing a reservation profile for the Bishop Paiute Tribe and outlining management consideration specific to the region. Various federal acts guide the reservation's resource management, such as NEPA and National Historic Preservation Act (Bishop Paiute Tribe 2014).

The tribe also has a Multi-Hazard Mitigation Plan (MHMP) that was completed in 2018. The purpose of this plan is to establish hazard mitigation measures to reduce or eliminate long-term risks from natural hazards to people and property on the Bishop Paiute Reservation. By assessing risk and vulnerability, the plan aims to guide tribal decision-making for risk management and mitigation. The reservation's demographics, land use, and ongoing development efforts are considered as part of the hazard mitigation strategy. The plan underscores the importance of proper waste management and future land use planning for the tribe's sustainable growth (Bishop Paiute Tribe 2018).

Fort Independence Paiute Tribe

The Fort Independence Tribe of Paiute Indians is currently developing a Wildfire Vulnerability Assessment for the Fort Independence area. The assessment will evaluate the vulnerability of the tribe's lands, assets, and resources to wildfire.

PUBLIC LAND MANAGEMENT

LAND MANAGEMENT STRATEGIES

State Land

In 2020, California and the federal government signed an agreement of the shared stewardship for California forests and rangelands. The agreement sets many goals for the State of California and the federal government to accomplish together (California Office of the Governor 2020). These goals include treating at least 1 million acres of California lands per year to reduce the risk of wildfires, developing a 20-year cooperative forest management plan that will outline projects and priorities, encouraging and increasing the use of sustainable land management practices such as prescribed fire, increasing the forest management workforce and in turn increasing the pace and scale of forest management, and prioritizing forest health benefits such as carbon sequestration and healthy watersheds. Funding for this agreement will be provided from the Great American Outdoors Act (California Office of the Governor 2020).

Forest managers in the region are addressing land management objectives through the use of prescribed fire, mechanical, and manual treatments to promote more resilient forest lands. Private, state, and federal lands are interspersed creating a matrix of land ownership, which is often a hurdle to implementation of landscape-level treatments. By working with private landowners, forest managers are enhancing landscape-scale efforts to create more resilient forest communities.

Federal Land

Inyo National Forest

The Inyo National Forest covers a sizeable portion of land west of U.S. 395 along the western boundary, and a smaller portion of land east of U.S. 395 in the northern section of the county. Therefore, wildfires as well as fuels management activities on these federal lands affect the county. The Land Management Plan for the Inyo National Forest (USFS 2018b) is the guiding document for the forest. The USFS has created four Strategic Fire Management Zones within the forest (Figure A.2) (USFS 2018b:77–81):

- **Community Wildfire Protection Zone:** This zone is composed of locations where communities and private lands could be at elevated risk of damage from wildfire, particularly where ample fuels exist. Priorities for this zone include identifying and using community buffer areas to implement strategic fuel treatments near structures and access points. In this zone, wildfires are suppressed under most fuel and weather conditions because of the elevated risk to public safety and the potential economic loss presented by a wildfire.
- **General Wildfire Protection Zone:** This zone consists of locations where wildfire threatens natural resources and/or community values. Wildfires in this area may adversely impact natural

resources due to the condition of the ecosystem and natural fire regime. Wildfires that commence in this area have the potential to spread to the Community Wildfire Protection Zone. Priorities in this zone include hazardous fuel reduction and targeted ecological restoration.

- **Wildfire Restoration Zone:** This zone contains locations where existing conditions pose a moderate risk of wildfire damage to a particular natural resource. Generally, wildfires that begin in this zone present a low to moderate threat to communities under typical fire season conditions. Priorities in this zone include ecological restoration.
- **Wildfire Maintenance Zone:** This zone is made up of locations where wildfire presents a minor threat to communities under average fire season conditions and where the ecosystem benefits from wildland fires. Priorities in this zone include the implementation of prescribed fire for ecological restoration and to accomplish resource goals.

Potential Operational Delineations (PODs)

Local PODs were developed by the Rocky Mountain Research Station's Wildfire Risk Management Science Team to pre-plan for fire using a risk management approach. These PODs also give local land managers a formal process for developing and planning landscape-scale wildfire response options prior to wildfire ignitions. These spatial units are typically defined by potential control features, which can include features like roads and ridgetops. Within the POD boundaries, forest conditions, fire ecology, and fire potential are typically summarized. By integrating local fire knowledge with advanced spatial analytics, PODs assist fire managers in establishing a shared comprehension of risks, management prospects, and desired outcomes to determine fire management objectives.

PODs recognize that fire can easily cross physical boundaries and evaluates risks and control opportunities regardless of ownership boundaries. Additionally, PODs acknowledge the importance of social cross-boundary collaboration, bringing together multiple partners, cooperators, and stakeholders to develop a shared understanding of values, opportunities, and challenges. This fosters collaborative, cross-boundary planning and prioritization, and supports shared stewardship for fire. PODs in Inyo County cover the eastern slope of the Sierra Nevada, Owens Valley, the Inyo Mountains, and the White Mountains (Figure A.3). Additional maps providing illustrations of PODs within the planning area in greater detail are housed in Appendix C.

For more information regarding the PODs, please visit:
<https://www.fs.usda.gov/research/rmrs/projects/pods>

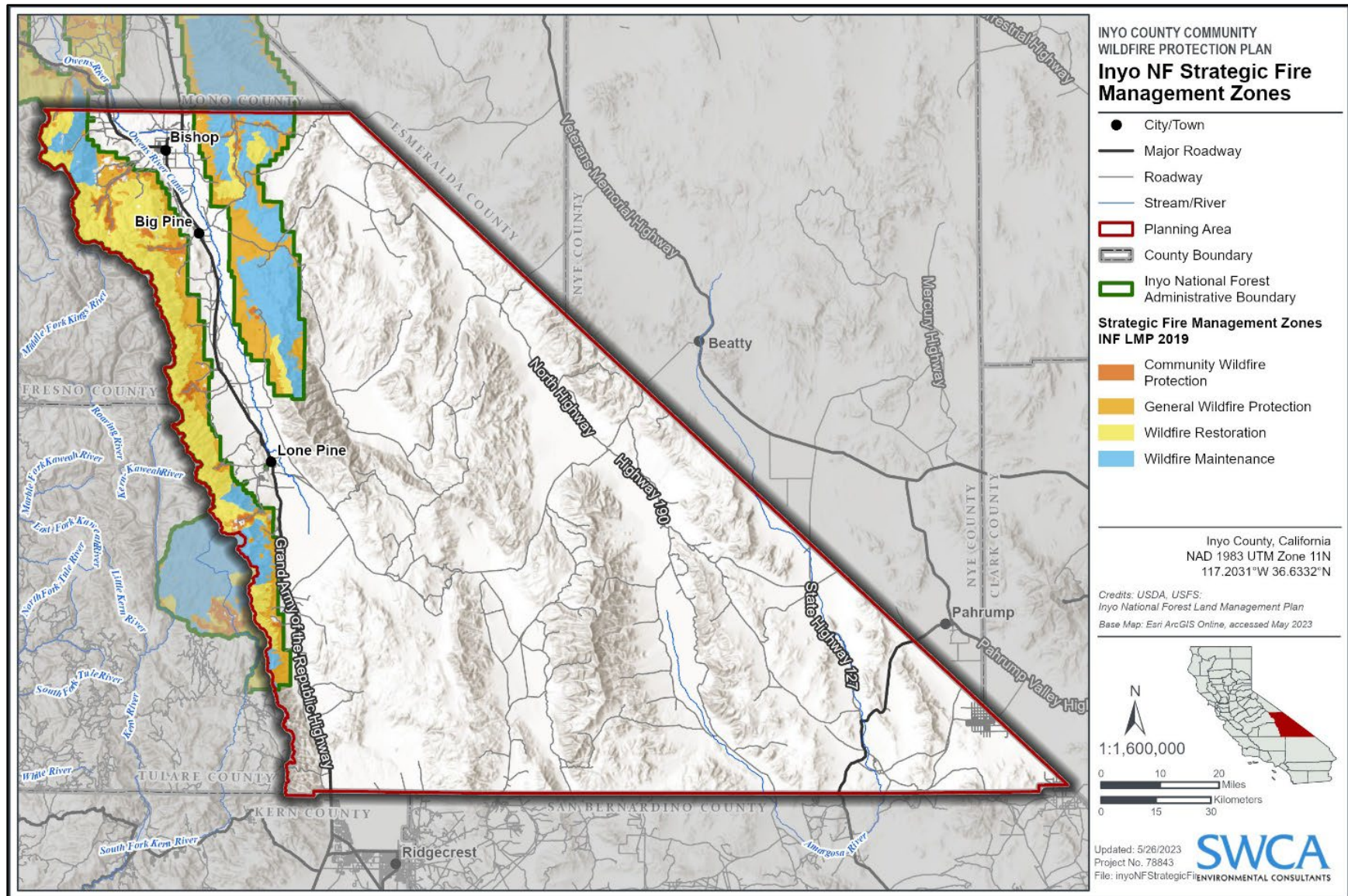


Figure A.2. Inyo National Forest Strategic Fire Management Zones.

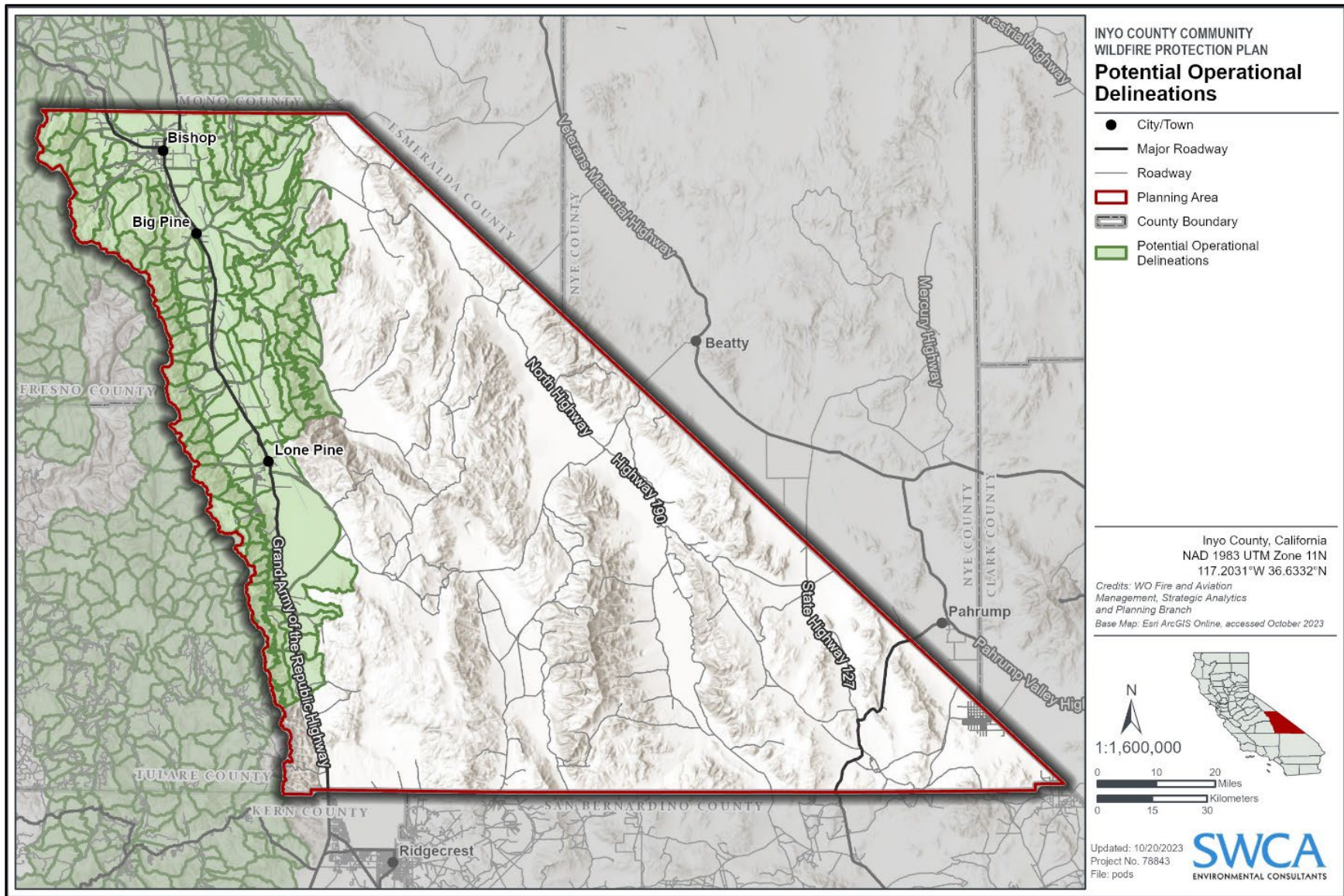


Figure A.3. PODs locations in Inyo County.

Source: <https://www.arcgis.com/apps/mapviewer/index.html?layers=cc50b6ca69734e4180d5399006058e58>

Death Valley National Park

Death Valley National Park comprises nearly 3.4 million acres. Though much of the landscape of the park is sparsely vegetated, it is estimated that over 600,000 acres of the park can carry wildfire. Fire management in the park is primarily directed by the CDIFP. The overarching goal of the park's fire management strategy is to facilitate natural fire processes while ensuring firefighter and public safety as well as the protection of significant natural and cultural resources. Fire management in the park is primarily directed by the following strategies:

- All wildfires will be managed under a full suppression strategy.
- Throughout the park, all human-caused fires will be suppressed. Prescribed fire will be used at specific sites to perpetuate traditional cultural practices of the Timbisha Shoshone, and the implementation of each burn will be guided by an approved burn plan.
- Hazard fuel reduction will be implemented by mechanical methods around structures owned by Death Valley National Park to decrease either the volume or flammability of fuels immediately adjacent to structures.

Bureau of Land Management

Inyo County contains lands managed by three BLM field offices: the Barstow and Ridgecrest Field Offices, which are part of the California Desert District Office; and the Bishop Field Office, which is part of the Central California District Office.

The Bishop Field Office Resource Management Plan was approved and implemented in 1993, covering a vast area in the Eastern Sierra region of California. This includes 750,000 acres of public land and approximately 9,000 acres of federal mineral estate under private land. The plan is divided into nine management areas and includes policies, guidelines, and land use decisions for the entire resource area. It also emphasizes the importance of multiple use and sustained yield, mineral resources, protection of values (e.g., ecological, environmental, and archaeological), and long-term benefits to the public. Outlined within the plan are preferences for land exchange, considerations for vegetation management, riparian rehabilitation, and habitat preservation for wildlife. Fuelwood harvesting and fire management strategies with a focus on cost reduction and fire prevention at the WUI are addressed as well. The approval process was guided by public involvement, with focus placed on involving the community in the handling of recreation, wildlife, minerals, and land ownership (BLM 1993).

Lands within the Barstow and Ridgecrest Field Offices are managed by the California Desert Conservation Area Plan, which was approved in 1980 (BLM 1980). This is a comprehensive plan that covers large swaths of BLM land in Inyo County. This land was amended in 2002 by the Northern and Eastern Mojave (NEMO) Desert Management Plan (BLM 2002). Key components of these planning documents include management of the region's natural resources, such as wildlife and vegetation. The planning document also addresses grazing, energy development, fire and fuels, and recreation. A large priority of the 2002 amendment was to create areas of critical environmental concern (ACECs) to protect and boost desert tortoise populations. Regarding fuels and fire, the NEMO plan states that wildfires in desert tortoise ACECs should be suppressed. Another primary management objective focuses on reducing the presence of nonnative plant species (e.g., invasive grasses and *Tamarix* sp.) to maintain healthy fire regimes (BLM 2002).

The California Desert Conservation Area Plan was again amended in 2016 by the Desert Renewable Energy Conservation Plan (DRECP), which is meant to balance the streamlining of renewable energy

development with the conservation of the local desert ecosystems. A key component of this is ensuring that the desert tortoise is provided ample habitat that contributes to increased population sized and long-term population viability. Regarding wildfire, fire is to be used to maintain and/or reestablish natural fire regimes that support native vegetation types that support special-status species (e.g., the desert tortoise) (BLM 2016b).

The Alabama Hills Land Management Plan (BLM 2021b) applies to lands approximately 19,000 acres of land managed by the BLM Bishop Field Office in the Alabama Hills region. This plan operates concurrently with the Bishop Field Office RMP (BLM 1993), the DRECP (BLM 2016b), and the Bishop Field Office Fire Management Plan (BLM 2016a). The plan functions to offer a variety of recreational experiences while mitigating conflicts among users, dealing with safety and health issues, lessening the impact of recreational activities, and improving other resources, values, and uses. Regarding wildfire, the plan's primary goal is to mitigate the risk of wildfires to nearby communities and minimize the potential impact of wildland fires to resources, values, and infrastructure within the planning area. The plan's objective is to implement and maintain fuel treatments that both reduce the continuity of fuels and provide strategic locations that help firefighters reduce the risk and spread of catastrophic wildfire. The plan provides specific details on targeted fuel reduction (and subsequent pile burning, primarily) for upland and riparian areas. The plan also provides direction on fuels inventorying, monitoring, and adaptive management to meet management needs (e.g., changing the frequency of treatments, monitoring and treating invasive/noxious plant infestations, and limiting OHV access, among others).

Generally, fuels management by the BLM uses a wide variety of treatment options, such as mechanical tools, biological tools, chemical tools, and prescribed fire. The program includes creating fuel breaks to provide safe access for firefighters, reducing fuel loads by removing invasive species (and unwanted woody vegetation), reducing fire risk near communities, targeted grazing, and using herbicide plus seeding to break the fire-cheatgrass cycle. Fuels treatments are planned and implemented in collaboration with other BLM and federal programs. The BLM also coordinates with local and state officials (e.g., CAL FIRE). Fuels management considers holistic scopes of work for BLM-managed land, which include project planning, project implementation, and post-project monitoring (BLM 2021a).

STEWARDSHIP AGREEMENTS

The Inyo County Emergency Operations Plan (Inyo County 2016) describes how the county participates in local, state, and federal mutual aid systems.

In 2020, the State of California and the USFS signed a shared stewardship agreement to commit to collaborative forest management and set landscape-scale priorities (State of California 2023). The shared stewardship agreement includes a commitment to coordinate and share tools, processes, and innovative approaches with respect to fire management. The stewardship agreement is here:

<https://www.gov.ca.gov/wp-content/uploads/2020/08/8.12.20-CA-Shared-Stewardship-MOU.pdf>

SWCA

APPENDIX B:

Community Background Information

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LOCATION AND GEOGRAPHY

Inyo County is in eastern California between the crest of the Sierra Nevada and the border with Nevada and extends south of the mid-latitude of California (about 37.5 °N). Owens Valley and Death Valley are well-known geographic features of Inyo County.

Inyo County is the second largest county in California (and ninth largest in the conterminous United States), covering about 10,200 square miles. The county has the seventh smallest population among California counties at about 19,000. There are 54 communities identified in the Inyo County General Plan (Inyo County 2001). The City of Bishop is the only incorporated community in the county and has a population of about 3,800. Unincorporated residential areas adjacent to the city limits, including the Bishop Paiute Reservation, bring the total population of “greater” Bishop to about 10,000, or more than half of Inyo County’s population. Lone Pine, including the Lone Pine Paiute-Shoshone Reservation, and Big Pine, including the Big Pine Band of Owens Valley Paiute Shoshone Indians of the Big Pine Reservation, are the only other communities with more than 1,000 people. About 30 of Inyo County’s communities have fewer than 100 people, with 20 of those having populations of less than 25. In addition to the permanent residents of Inyo County, the number of transient recreationists and visitors is routinely in the tens of thousands, especially on busy weekends or holidays.

Before Euro-Americans began to colonize the area in the 1860s, the land was the homeland of Paiute, Shoshone, Mono, and Timbisha Native Americans. Only a tiny remnant of present-day Inyo County is on the Bishop Paiute Reservation, Big Pine Band of Owens Valley Paiute Shoshone Indians of the Big Pine Reservation, Fort Independence Indian Community of Paiute Indians, Lone Pine Paiute-Shoshone Reservation, and Timbisha Shoshone Reservation.

The landscapes of Inyo County exhibit amazing natural diversity because of the elevational extremes (282 feet below sea level to about 14,500 feet above sea level) and a dramatically declining gradient in precipitation from west to east. There is minimal vegetation at both the lowest and highest elevations because of very harsh environmental conditions. From timberline at about 11,000 feet on the eastern slope of the Sierra Nevada to about 7,000 feet, subalpine and montane forests are an iconic part of the Inyo County landscape to recreationists but occupy less than 1.5% of the county’s area. Desert scrub is the dominant vegetation type, covering more than 60% of Inyo County. Alkali desert scrub, sagebrush, barren, pinyon-juniper woodlands, Joshua tree woodlands, and desert wash cover another third of the county. Another 35 or so vegetation types cover the remaining 4% to 5% of the land area.

Riparian vegetation covers much less than 1% of the county land area but is a critical risk factor with respect to wildfire. Almost all communities of Inyo County are located along streams for the benefit of water availability. In the otherwise arid and sparsely vegetated landscape surrounding most communities, riparian areas provide dense and continuous fuels leading into and through residential areas. Although the creeks and associated vegetation provide critical aquatic and riparian habitat within an arid region, the dense and continuous vegetation carries a wildfire risk analogous to a wick through an otherwise low-fuel environment (Switzer and Umek 2022). Irrigation of residential yards, community areas, and agricultural fields has created “oasis” conditions and high fuel loads within the communities compared to their immediate surroundings. Observed from the air or the Sierra Nevada, the green communities, fields, and riparian corridors stand out in marked contrast to the adjacent brown and sparsely vegetated landscape.

Inyo County is often referred to as the “land of little rain,” following the title of Mary Austin’s classic book, published in 1903. The dominant desert scrub and similar vegetation types are suggestive of the predominantly arid climate of Inyo County. Portions of the county in the northern Mojave Desert typically receive less than 4 inches of precipitation per year. Furnace Creek in Death Valley averages about

2.4 inches per year. Precipitation is greatest near the crest of the Sierra Nevada at around 30 inches per year on average but declines rapidly with distance to the east of the crest.

ROADS AND TRANSPORTATION

U.S. 395 serves as the principal road artery through Inyo County and passes directly through many of the county's most populous communities. Several other highways contribute to the interconnectivity of the county, including U.S. Highway 6 and State Routes 127, 136, 178, and 190. Smaller highways and locally maintained access roads are spread throughout the county, providing drivers and visitors with access to recreational opportunities and sparsely developed areas. Among these roads outside of the state highway system are Stateline Road, Panamint Valley Road, Old Spanish Trail Highway, Trona-Wildrose Road, Badwater Road, Scotty's Castle Road, and Daylight Pass Road. The county's roadways also facilitate many interregional travelers visiting recreation areas, including the Inyo County National Forest and Death Valley National Park. Traffic data collected for the Inyo County Regional Transportation Plan found that recreational areas saw some of the most significant traffic volume increases in the past 13 years (Inyo County 2019).

In addition to major transportation corridors, there are many smaller roads that provide access to small and medium-sized communities. A substantial portion of these roads present the only means of access and are often narrow, steep, and unpaved, with blind corners. Moreover, many of these lack directional signage, and some are lined with heavy vegetation (Figures B.1 and B.2).



Figure B.1. Example of a narrow road system with variable topography.



Figure B.2. Example of a narrow and unpaved road.

TOPOGRAPHY

The county exhibits diverse topography, particularly notable in California. The eastern escarpment of the Sierra Nevada forms a steep mountain front, ranging from elevations of 11,000 to over 14,000 feet above sea level. This terrain descends rapidly to about 4,000 feet along the Owens River within a relatively short distance of 10 to 20 miles. As one moves eastward into the Basin and Range geologic province, the landscape unfolds with a succession of mountain ranges and intermontane valleys. Figures B.3 through B.6 illustrate the various types of landscapes present in Inyo County.



Figure B.3. Typical landscape in Inyo County, showing flat topography in the valley floor, sagebrush and grass shrubland in the foreground, and rugged, mountainous terrain in the distance.



Figure B.4. Desert landscape in Inyo County, showing shrubland fuels, riparian vegetation, and relatively varied topography.



Figure B.5. Mountainous landscape in the western portion of Inyo County, characterized by timber fuels (oaks and pines).



Figure B.6. Typical landscape in the foothills of the Sierra Nevada in the western portion of Inyo County, with shrublands, riparian vegetation, and timber fuels (oaks and pines).

POPULATION

The following information is drawn primarily from U.S. census data (U.S. Census Bureau 2022). In 2022, the population estimate of Inyo County was 18,718 persons, which is a small increase of 0.01% over the 2010 census numbers of 18,546. Between 2017 and 2021, there were 7,832 households in the county. Inyo County has a population density of 1.8 people per square mile. According to the 2020 population estimate, Bishop, Dixon Lane-Meadow Creek, and West Bishop have the largest populations in the county with 3,801, 2,755, and 2,553 people, respectively (U.S. Census Bureau 2020, 2022).

RECREATION

The eastern Sierra Nevada, Owens Valley, Inyo National Forest, BLM public lands, and Death Valley National Park (Figure B.7) have tremendous recreational use. Annual visitation use of the Inyo National Forest is estimated at 4 million per year (USFS n.d.). In 2018, Death Valley National Park provided 1.3 million people with camping, hiking, sightseeing, and other recreation opportunities (NPS 2019, 2023).

Inyo County operates 15 parks and campgrounds, allowing residents and visitors to enjoy the natural setting through camping, fishing, picnicking, and utilizing various sporting facilities. The ridged landscapes of the Sierra Nevada offer plenty of hiking opportunities, many of which reach high elevations and offer stunning views of Owens Valley and beyond. The area where Mazourka Canyon Road transitions from pavement to dirt heading east into the Inyo Mountains is used as off-road and ATV trails.

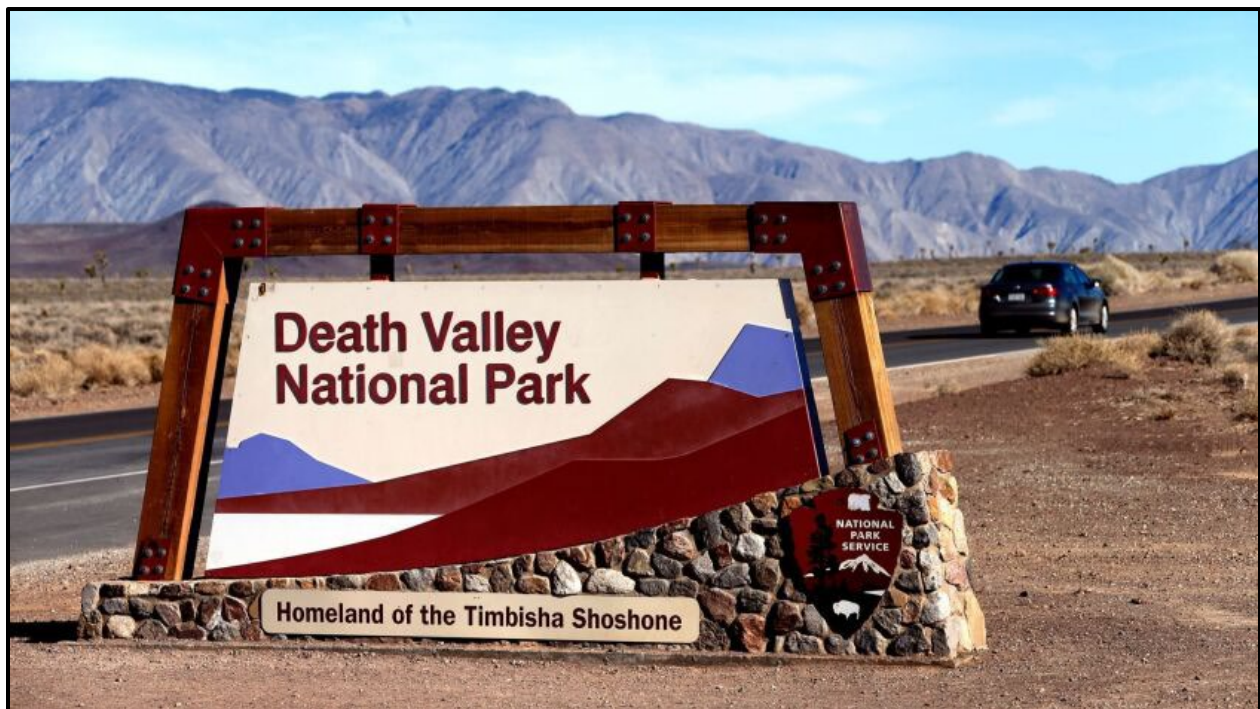


Figure B.7. Entrance to Death Valley National Park.

Source: <https://ca-times.brightspotcdn.com/dims4/default/2e57e0d/2147483647/strip/true/crop/2048x1151+0+0/resize/1200x674!/format/webp/quality/80/?url=https%3A%2F%2Fcalifornia-times-brightspot.s3.amazonaws.com%2Ffa6%2F4e%2F5c877306b1e75aa0be11b2810ba4%2Ffia-sgreene-1485372971-snap-photo>

Moreover, the BLM Bishop Field Office oversees multiple recreation areas and public lands within the region, providing opportunities for various outdoor activities. These include sites such as the Alabama Hills, Inyo Mountains Wilderness, and Mt. Whitney (BLM 2023).

VEGETATION AND LAND COVER

Inyo County supports 46 vegetation types (Figure B.8), as mapped by the CAL FIRE's Fire and Resource Assessment Program (FRAP), along with the CDFW VegCAMP program and with utilization of USFS Region 5 Remote Sensing Laboratory (CAL FIRE 2015). Maps depicting the local vegetation fuel types described in Table B.1 below (depicted as Wildlife Habitat Relationship classes) are available here:

<https://gis.data.ca.gov/maps/CALFIRE-Forestry::california-vegetation-whrtype/explore?location=37.425437%2C-118.414181%2C10.14>

The primary vegetation types throughout the Inyo County landscape (types that comprise more than 1% of the overall Inyo County acreage) and their fire behavior characteristics are described in further detail below: desert scrub, alkali desert scrub, sagebrush, pinyon-juniper, Joshua tree, and desert wash. Additional characteristics for all vegetation types are available here:

<https://wildlife.ca.gov/Data/CWHR/Wildlife-Habitats>.

Unless otherwise cited, vegetation descriptions are based on the California Wildlife Habitat Relationships System (CDFW 2023a). Fire regimes and behaviors for habitats present in the Inyo County WUIs are described in Chapter 2.

While comprising less than 1% of Inyo County vegetative cover, desert riparian and montane riparian vegetation is found within or adjacent to the majority of Inyo County communities and infrastructure. Elsewhere in the Sierra Nevada, riparian vegetation often avoids burning in many low- or moderate-intensity wildfires because of high fuel moisture and locally high humidity along streams. However, in the arid conditions of the eastern Sierra Nevada, riparian areas provide dense and continuous fuels through an otherwise sparsely vegetated landscape. Riparian corridors have been involved in many Inyo County wildfires and should be a primary focal point for vegetation management and/or controlled burns to address community wildfire protection.

It should also be noted that large portions of Inyo County have been mapped as barren habitat and urban land cover (see acreages in Table B.1 below). Barren habitat represents areas lacking vegetation; exhibiting less than 2% total vegetation cover by herbaceous, desert, or non-wildland species; and less than 10% cover by tree or shrub species. Within Inyo County, these areas likely represent desert habitat as well as urban settings. Urban land cover typically represents noncombustible materials (e.g., asphalt and pavement), developed and maintained landscapes (e.g., buildings and irrigated lawns), as well as some ornamental landscape vegetation, and some disturbed areas likely characterized by annual or perennial grass cover or invasive vegetation.

Calflora (<https://www.calflora.org/>) was utilized to confirm the presence of botanical species described as dominant species for each vegetation type within Inyo County.

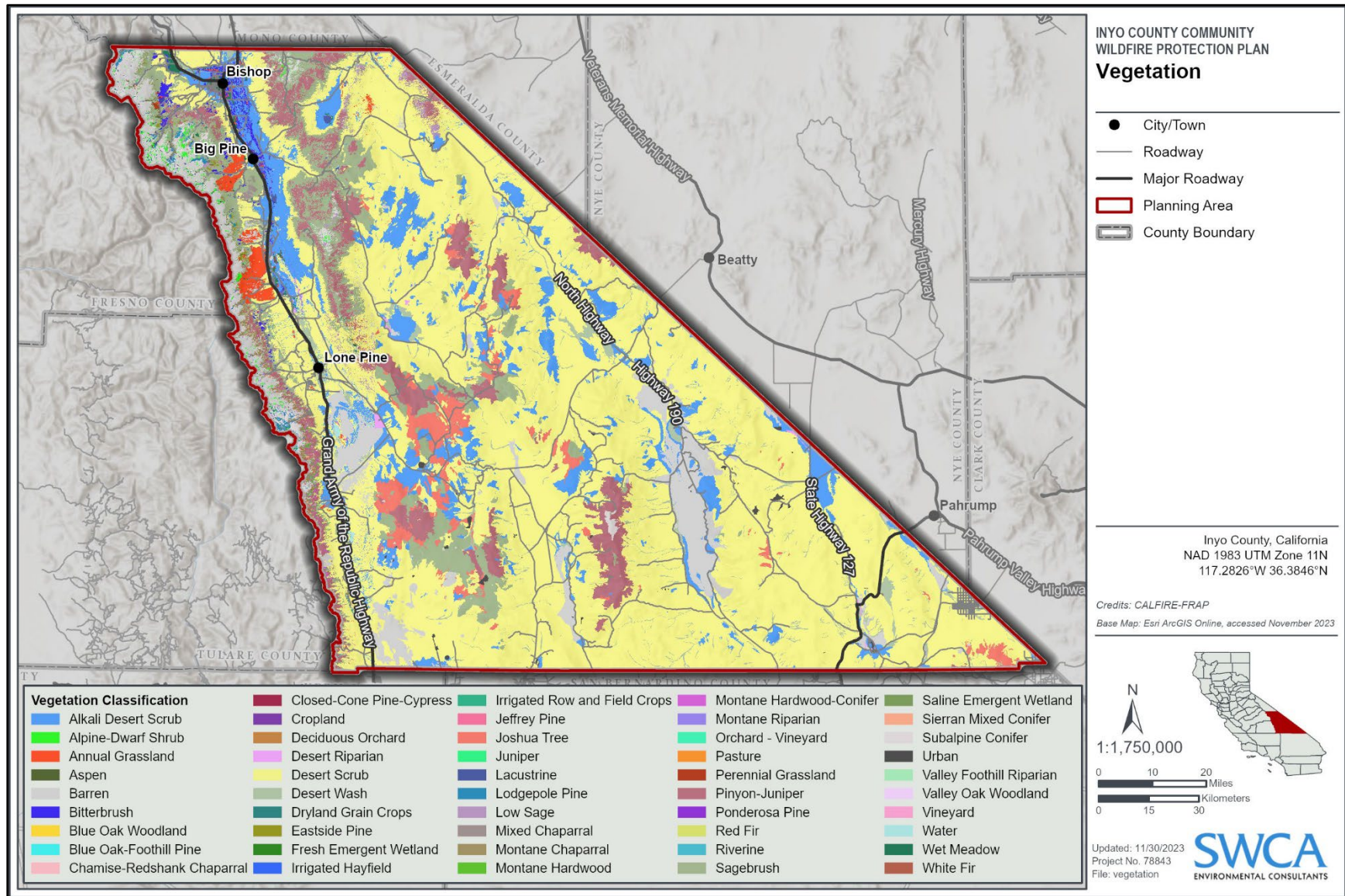


Figure B.8. Inyo County existing vegetation cover.

Table B.1. Inyo County Vegetation Types

Vegetation Type	Total Inyo County Acres	Percentage of Inyo County Cover
Desert Scrub	4,021,471	61.5
Alkali Desert Scrub	585,248	8.9
Sagebrush	498,712	7.6
Barren	436,524	6.7
Pinyon-Juniper	375,224	5.7
Joshua Tree	154,480	2.4
Desert Wash	151,246	2.3

Source: CAL FIRE (2015)

DESERT SCRUB

Desert scrub is the most widespread habitat in California deserts, generally occurring at elevations below 4,000 feet but occasionally reaching upward of 6,000 feet. This habitat type often borders desert scrub, desert wash, alkali scrub, and desert riparian habitats. At higher elevations, desert scrub habitat grades into both Joshua tree and pinyon-juniper habitats. Desert scrub habitat is characterized by low cover (5%–30%) of woody shrubs of various heights. Vegetation composition of the desert scrub community of Inyo County includes creosote bush (*Larrea tridentata*), brittlebush (*Encelia farinosa*), burrobrush (*Ambrosia salsola*), white bursage (*Ambrosia dumosa*), California barrel cactus (*Ferocactus cylindraceus*), Engelmann’s hedgehog cactus (*Echinocereus engelmannii* var. *engelmannii*), cholla species (*Cylindropuntia* spp.), Nuttall’s coldenia (*Tiquilia nuttallii*), desert mallow (*Sphaeralcea ambigua*), littleleaf ratany (*Krameria erecta*), beavertail pricklypear (*Opuntia basilaris*), green rabbitbrush (*Chrysothamnus viscidiflorus*), rubber rabbitbrush (*Ericameria nauseosa*), desert sand verbena (*Abronia villosa*), desert senna (*Senna armata*), desert baccharis (*Baccharis sergiloides*), Anderson thornbush (*Lycium andersonii*), and Mojave yucca (*Yucca schidigera*).

ALKALI DESERT SCRUB

Alkali desert scrub communities occur from below sea level to over 5,900 feet. At its lower elevational reaches, alkali desert scrub can intermix with barren and desert scrub habitats; at its low to mid-elevations, it can interface with Joshua tree woodlands; and at its mid- to upper elevations, it is known to intermix with juniper, pinyon-juniper, sagebrush, low sagebrush, and bitterbrush. Plant assemblies within alkali desert scrub are typically subdivided into two adaptive phases: xerophytic (surviving in arid or dry conditions) and halophytic (surviving in salty conditions).

Inyo County xerophytic alkali desert scrub habitats are typically dominated by saltbush species, especially fourwing saltbush (*Atriplex canescens*), allscale (*Atriplex polycarpa*), shadscale (*Atriplex confertifolia*), desert holly (*Atriplex hymenelytra*), Torrey’s saltbush (*Atriplex torreyi*), and Parry’s saltbush (*Atriplex parryi*). Other common shrubs and subshrubs include bud sage (*Artemisia spinescens*), white bursage, creosote bush, Fremont’s dalea (*Psoralea fremontii*), Nevada ephedra (*Ephedra nevadensis*), black greasewood (*Sarcobatus vermiculatus*), spiny hopsage (*Grayia spinosa*), spiny desert olive (*Menodora spinescens*), rabbit-thorn (*Lycium pallidum* var. *oligospermum*), Thurber’s sandpaper-plant (*Petalonyx thurberi*), winterfat (*Krascheninnikovia lanata*), Anderson thornbush, burrobrush, desert peppergrass

(*Lepidium fremontii*), prince's plume (*Stanleya pinnata*), Cooper's goldenbush (*Ericameria cooperi* var. *cooperi*), alkali goldenbush (*Isocoma acradenia*), Shockley's goldenhead (*Acamptopappus shockleyi*), honeysweet (*Tidestromia suffruticosa* var. *oblongifolia*), and common snakeweed (*Gutierrezia sarothrae*). The soils under xerophytic alkali desert scrub communities are often alkaline and very deep with high silt and clay content and a much higher moisture-holding capacity than soils within desert scrub habitat.

Shrubs and subshrubs present in halophytic alkali desert scrub habitats in Inyo County include arrow weed (*Pluchea sericea*), black greasewood, alkali goldenbush, iodine bush (*Allenrolfea occidentalis*), rubber rabbitbrush, bush seepweed (*Suaeda nigra*), and species of saltbush and tamarisk (*Tamarix* spp.). Forbs and grasses are important understory components of alkali desert scrub habitats and include Chinese parsley (*Heliotropium curassavicum*), several species of annual saltbush, Cooper's rush (*Juncus cooperi*), yerba mansa (*Anemopsis californica*), scratchgrass (*Muhlenbergia asperifolia*), alkali sacaton (*Sporobolus airoides*), and saltgrass (*Distichlis spicata*).

Sagebrush

Sagebrush habitat occurs from approximately 1,600 to 10,500 feet in elevation and is dominated or codominated by big sagebrush (*Artemisia tridentata*) and other sagebrush species and subspecies, such as low sagebrush (*Artemisia arbuscula*), black sagebrush (*Artemisia nova*), and silver sagebrush (*Artemisia cana*), along with green rabbitbrush, rubber rabbitbrush, horsebrush species (*Tetradymia* spp.), gooseberry species (*Ribes* spp.), desert peach (*Prunus andersonii*), curl-leaf mountain mahogany (*Cercocarpus ledifolius*), and bitterbrush (*Purshia tridentata*). The dominant species/subspecies of sagebrush changes based on site topography, soil composition, and moisture. Inyo County sagebrush habitats are well aligned with *A Manual of California Vegetation's* definition of the *Artemisia tridentata* Shrubland Alliance, which includes the presence of blackbrush (*Coleogyne ramosissima*), Nevada ephedra, green ephedra (*Ephedra viridis*), Acton's brittlebush (*Encelia actonii*), California buckwheat (*Eriogonum fasciculatum*), and desert snowberry (*Symphoricarpos longiflorus*). Emergent trees including Utah juniper (*Juniperus osteosperma*), singleleaf pinyon (*Pinus monophylla*), and Jeffrey pine (*Pinus jeffreyi*) may be present at low cover (California Native Plant Society 2024).

Pinyon-Juniper

Pinyon-juniper habitat has been expanding from its historic range since the late nineteenth century, encroaching into adjacent habitats previously dominated by shrubs and herbaceous vegetation. Historically, pinyon-juniper woodlands were primarily located on steep slopes, typically with shallow, coarse soils and in areas with limited herbaceous fuels (Tausch et al. 2009). In Inyo County, pinyon-juniper habitat is common in the White and Inyo Mountains, as well as in the Sierra Nevada, where pinyon-juniper habitat is found between 6,000 and 9,000 feet in elevation, primarily occurring on the eastern flank of the escarpment. Singleleaf pinyon dominate the overstory of Inyo County pinyon-juniper habitat, occurring alongside Utah juniper, sagebrush, bitterbrush, rabbitbrush, horsebrush, blackbrush, and perennial bunchgrasses.

JOSHUA TREE

Joshua tree habitat is rarely comprises pure stands of Joshua trees (*Yucca brevifolia*) and can cohabitate with Utah juniper and singleleaf pinyon pine. Plants in the understory are highly reminiscent of the

adjacent desert scrub and pinyon-juniper habitats. This vegetation type occurs between 2,500 and 7,500 feet in elevation.

DESERT WASH

Desert washes are hydrologic features where water typically flows only intermittently after heavy rains. This vegetation type occurs alongside the channels, which are highly susceptible to extreme runoff. Within Inyo County, desert washes occur adjacent to desert scrub, alkali desert scrub, sagebrush, and barren vegetation types.

FOREST HEALTH CONSIDERATIONS

Insects

Native insect epidemics within plant communities are usually part of a natural disturbance cycle similar to wildfire. They are often cyclic in nature and are usually followed by the natural succession of vegetation over time. Of primary interest are insects that attack tree species because of the implications for fire management.

In addition to native insect epidemics, nonnative pests also pose a significant threat to forest ecosystems. Invasive species are organisms that are introduced into an area beyond their natural range and become pests in the new environment. They are also referred to as exotic, alien, nonnative, or introduced pests. Most introductions have been unintentional and accidental. Having evolved in a different environment, these invasive species may have few natural enemies in their new locations, which can often lead to rapid population increases that can out-compete native species for resources. The introduction of nonnative pests is likely to cause economic, environmental, and agricultural harm as well as harm to human health (California Department of Food and Agriculture [CDFA] 2021). In general, traits of invasive species include fast growth, rapid reproduction, rapid adaptability, tolerating a wide range of environmental conditions, and utilizing a variety of different foods (CDFA 2021).

Insect epidemics in California forests continue to persist. In 2022, USFS's annual aerial survey showed tree mortality in over 1.9 million acres out of 39.6 million acres that were surveyed. Tree mortality is strongly correlated with extreme and prolonged drought and subsequent bark and engraver beetle attacks (USFS 2022). Stands of trees that have been killed by insects have varying degrees of associated impacts to fire behavior depending on the time lapse following an insect attack and structure, fuel loading, and continuity of the fuels that remain. However, forests with a large degree of mortality following an insect attack may have the potential to experience extreme fire behavior, especially if a large degree of needle cover remains in the canopy. Heavy dead fuels increase the fire suppression difficulty, and snags are a significant hazard to fire crews.

Insects that have infested or have the potential to infest the forested areas in the region (e.g., Inyo National Forest) are listed below.

- **Bark beetles** (Ips beetles) (*Ips* spp. and *Dendroctonus* spp.) (California Forest Pest Council [CFPC] 2021)
- **Mountain pine beetle** (*Dendroctonus ponderosae*) (CFPC 2020)
- **Jeffrey pine beetle** (*Dendroctonus jeffreyi*) (CFPC 2020)
- **Pinyon needle scale** (*Matsucoccus acalyptus*) (CFPC 2021; USFS 2021c)

- **California flatheaded borer** (*Phaenops californica*) (USFS 2018b)
- **Pandora moth** (*Coloradia pandora*) (USFS 2018b)
- **Douglas-fir tussock moth** (*Orgyia pseudotsugata*) (USFS 2018b)

Diseases

Diseases of trees, such as parasitic plants, fungi, and bacteria, can also affect forests in the region (e.g., Inyo National Forest). These diseases impact forest systems by degrading the productivity and health of the forest. Some of the more common forest diseases that are found in the region are described below. Trees that are killed by disease have the similar potential to increase fire hazards.

- **White pine blister rust** (*Cronartium ribicola*) (USFS 2018b)
- **Armillaria root disease** (*Armillaria* sp.) (USFS 2018b)
- **Black stain root disease** (*Leptographium wageneri*) (USFS 2018b)
- **Heterobasidion root disease** (*Heterobasidion* sp.) (USFS 2018b)
- **Dwarf mistletoe** (*Arceuthobium campylopodum*) (USFS 2018b)

Impact of Climate Change

The rapidly shifting climate, particularly rising temperatures, combined with changing wind patterns and increasing temporal and spatial variability of water availability, are considerably escalating wildfire risk across the state. The recurrence of severe fire weather during the autumn months has more than doubled in California since the 1980s, and, considering climate change, this prevalence is projected to increase in the future. As stated in California's Fourth Climate Change Assessment, if greenhouse gas emissions continue to increase, California is expected to experience a 50% increase in fires larger than 25,000 acres as well as a potential 77% increase in average area burned by 2100. The state has already begun to encounter the impacts of increased fire occurrence and severity. In fact, 60% of the top 20 largest wildfires in California occurred in the last 5 years, including the August Complex fire (August 2020) and the Dixie fire (July 2021). The August Complex and Dixie fires alone burned a combined total of nearly 2 million acres and well over 2,000 structures. Moreover, the majority of the most destructive wildfires in California have occurred within the last two decades, with the Butte fire destroying close to 20,000 structures (CAL FIRE 2022b). It is clear that extreme wildfire events continue to present a significant threat to California's communities.

In addition to direct damage (e.g., structure and property damage) caused by wildfires, uncharacteristically large and severe wildfires also cause indirect impacts to the environment and ecosystem services. Wildfires are known to deteriorate local and regional air quality, pollute waterways, displace native species (animal and plant), and increase carbon dioxide emissions. The increased carbon dioxide emissions are of special concern since carbon dioxide is a greenhouse gas. Greenhouse gases are implicated in climate change, and climate change is a critical factor exacerbating frequency and severity of wildfires (CA GOPR 2019).

It is important to note that fire is a natural part of California's diverse landscapes and is essential to many ecosystems across the state. Almost all of California's diverse ecosystems are fire-dependent or fire-adapted (CDFW 2021). Frequent, uncharacteristically large, high-severity wildfires are the primary source of the catastrophic damage listed above. Wildfire, when not intensified by human actions, works to balance ecosystems and restore their natural functions.

Tree Mortality

Extensive droughts, overcrowding, and beetle kill are significant causes of tree mortality across the region (USFS 2017). Extreme wildfires and post-fire debris flows have also contributed to increased erosion and habitat damage, further depleting tree health within burn zones and their surrounding areas downslope. Tree mortality in the vicinity of the communities occurs on public and private lands, including open spaces and creeks and ditches.

Moreover, rising temperatures, extensive droughts, extreme wildfires, and insect outbreaks have contributed to widespread tree mortality in the nearby forests, i.e., Inyo National Forest (USFS 2018b). Tree mortality due to the aforementioned factors is a natural process in forest ecosystems. However, if due to compound disturbances or other factors, many trees die in a brief time period over large regions, forest health may be negatively affected. In addition to disrupting ecosystem functions, widespread tree mortality near developed or recreational areas presents hazards as they can fall and potentially endanger the public and infrastructure (NPS 2021). Furthermore, the level of risk posed by hazard trees is contingent on the amount of time that has passed since the individual or population has died and the amount of fuel that has fallen to the forest floor. In the Sierra Nevada, recent droughts and rising temperatures have contributed to an increase in dead woody fuels that persist for a long period of time and present a significant wildfire hazard. As such, any increase in tree mortality results in increased fuel loading which contributes to the potential for high severity fire and extreme fire behavior in the region (UCANR 2020).

During the 2012–2016 drought, tree mortality increased significantly. Rising temperatures and reduced water availability have stressed trees, thereby increasing their physiological stress and their susceptibility to insect and pathogen infestations (OEHHA 2019). Roughly 129 million trees were estimated to have died between 2012 and 2017. In 2016 alone, 62 million trees died, with 95% of tree mortality occurring in the Sierra Nevada (UCANR 2017). Recent surveys indicate that the tree mortality trend is likely to continue. In its 2021 annual aerial survey, the USFS detected 9.5 million dead trees statewide, mostly fir, followed by ponderosa pine, bringing the cumulative total to 173 million dead trees since 2010 (USFS 2021c). Most of the surveyed tree mortality occurred in the southern areas of the Sierra Nevada range. In Inyo County 10,000 acres with 68,000 deceased trees were detected (USFS 2021c).

While it is known that tree mortality affects several aspects of wildfire behavior, the extent to which tree mortality influences wildfire severity has not been established. Researchers from the University of California Davis and the USFS conducted a study to answer this question (Wayman and Safford 2021). The researchers focused on the 2015 Rough Fire and the 2016 Cedar Fire areas for their assessment. These areas presented the perfect opportunity to study the effects of tree mortality on wildfire severity since they had recently burned and had existing tree mortality. The researchers found that two measures of wildfire severity (area killed by fire and canopy torch) were significantly influenced by pre-fire tree mortality. That is, the higher the degree of tree mortality in an area, the higher the potential for a canopy fire and fire-killed trees. Considering that deceased trees pose an increased risk of intense wildfire, the researchers emphasized that fuel reduction treatments, such as thinning and prescribed fire, not only reduce the risk of catastrophic wildfire but can also reduce the severity of future bark beetle outbreaks (Wayman and Safford 2021).

BIODIVERSITY AND THREATENED AND ENDANGERED SPECIES

Inyo County has a diverse set of ecosystems and natural resources due to its unique position in eastern California. The western border of Inyo County is defined by the Sierra Nevada range where the dramatic elevation gradient, including numerous high peaks, valleys, and alpine meadows, creates a wide array of microclimates and ecosystems. From the lower foothills to the subalpine and alpine zones, the Sierra Nevada supports a rich diversity of plant and animal species. This area is known for its coniferous forests, lakes and contains critical habitat for species like the state and federally endangered Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*). Inyo County's eastern regions extend into the Great Basin and the Mojave Desert. The Great Basin areas are characterized by sagebrush and pinyon-juniper woodlands, which support species like mule deer and sage-grouse. In contrast, the Mojave Desert offers distinct habitats like creosote bush scrub and Joshua tree woodlands, providing shelter for wildlife adapted to desert conditions. Inyo County is also a vital crossroads for various migratory species, including birds, mule deer, and other wildlife that traverse great distances.

Inyo County has 18 special-status animal species, each in potential habitats of relatively limited area. Fuel reduction treatments on federal land would be subject to NEPA and associated analysis of impacts to these species. Projects on state land and City of Los Angeles land would require CEQA or CalVTP analyses. Treatments in areas that may impact threatened and endangered species would require application of certain mitigation measures to prevent degradation of habitat. As an example of a mitigation measure, fuels treatment activities on federal lands may be subject to restrictions according to limited operating periods. Limited operating periods decrease the time frame for which fuels treatment activities may occur.

Special-status species include designated (rare, threatened, endangered) and CDFW candidate species. Many special-status species (both plant and animal) are present in Inyo County. Below is a partial list of wildlife species in Inyo County that may be considered under the California Environmental Protection Act (CEQA), the California Endangered Species Act (CESA) and/or the federal National Environmental Policy Act (NEPA) review.

Wildlife

- Yosemite toad (*Anaxyrus canorus*)
- Black toad (*Bufo exsul*)
- Southern mountain yellow-legged frog (*Rana muscosa*)
- Sierra Nevada yellow-legged frog (*Rana sierrae*)
- Crotch bumblebee (*Bombus crotchii*)
- Greater sage-grouse (*Centrocercus urophasianus*)
- Swainson's hawk (*Buteo swainsoni*)
- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Least Bell's vireo (*Vireo bellii pusillus*)
- Bald eagle (*Haliaeetus leucocephalus*)

- Inyo California towhee (*Pipilo crissalis eremophilus*)
- Bank swallow (*Riparia riparia*)
- Sierra Nevada bighorn sheep (*Ovis canadensis sierrae*)
- Sierra Nevada red fox (*Vulpes vulpes necator*)
- Fisher (*Pekania pennanti*)
- Owens pupfish (*Cyprinodon radiosus*)
- Owens tui chub (*Siphateles bicolor snyderi*)
- Paiute cutthroat trout (*Oncorhynchus clarki seleniris*)

Special-Status Plants

There are 215 special-status botanical species known to occur in Inyo County. Table B.2 below includes all botanical special-status plant species known to occur in Inyo County and the approximate acreage of the presumed occupied habitat for each species (CDFW 2023b; USFS 2020).

Table B.2. Special-Status Plants in Inyo County

Scientific Name	Common Name	Plant Status	Total Acres
<i>Acleisanthes nevadensis</i>	desert wing-fruit	2B.1	88.9
<i>Agave utahensis</i> var. <i>eborispina</i>	ivory-spined agave	1B.3	77,199.9
<i>Aliciella ripleyi</i>	Ripley's aliciella	2B.3	7,975.2
<i>Aliciella triodon</i>	coyote gilia	2B.2	612.2
<i>Allium atrorubens</i> var. <i>atorubens</i>	Great Basin onion	2B.3	14.8
<i>Allium nevadense</i>	Nevada onion	2B.3	5.6
<i>Almutaster pauciflorus</i>	alkali marsh aster	2B.2	780.6
<i>Androstephium breviflorum</i>	small-flowered androstephium	2B.2	58.4
<i>Arctomecon merriamii</i>	white bear poppy	2B.2	57,619.6
<i>Astragalus argophyllus</i> var. <i>argophyllus</i>	silver-leaved milk-vetch	2B.2	9.7
<i>Astragalus atratus</i> var. <i>mensanus</i>	Darwin Mesa milk-vetch	1B.1	2,256.7
<i>Astragalus cimae</i> var. <i>sufflatus</i>	inflated Cima milk-vetch	1B.3	2,363.2
<i>Astragalus funereus</i>	black milk-vetch	1B.2	5,370.2
<i>Astragalus geyeri</i> var. <i>geyeri</i>	Geyer's milk-vetch	2B.2	472.6
<i>Astragalus gilmanii</i>	Gilman's milk-vetch	1B.2	3,173.5
<i>Astragalus hornii</i> var. <i>hornii</i>	Horn's milk-vetch	1B.1	775.8
<i>Astragalus kentrophyta</i> var. <i>elatus</i>	spiny-leaved milk-vetch	2B.2	263.4
<i>Astragalus lentiginosus</i> var. <i>micans</i>	shining milk-vetch	1B.2	1,038.9
<i>Astragalus lentiginosus</i> var. <i>piscinensis</i>	Fish Slough milk-vetch	1B.1, FT	45.7
<i>Astragalus lentiginosus</i> var. <i>sesquimetalis</i>	Sodaville milk-vetch	1B.1, SE	29.7

Scientific Name	Common Name	Plant Status	Total Acres
<i>Astragalus mohavensis</i> var. <i>hemigyryus</i>	curved-pod milk-vetch	1B.1	209.8
<i>Astragalus monoensis</i>	Mono milk-vetch	1B.2	27.0
<i>Astragalus nyensis</i>	Nye milk-vetch	1B.1	144.0
<i>Astragalus platytropis</i>	broad-keeled milk-vetch	2B.2	653.3
<i>Astragalus preussii</i> var. <i>preussii</i>	Preuss' milk-vetch	2B.1	37.1
<i>Astragalus ravenii</i>	Raven's milk-vetch	1B.3	188.5
<i>Astragalus sabulonum</i>	gravel milk-vetch	2B.2	2,969.4
<i>Astragalus serenoii</i> var. <i>shockleyi</i>	Shockley's milk-vetch	2B.2	58,280.6
<i>Astragalus tidestromii</i>	Tidestrom's milk-vetch	2B.2	2,159.8
<i>Astrolepis cochisensis</i> ssp. <i>cochisensis</i>	scaly cloak fern	2B.3	9.9
<i>Atriplex argentea</i> var. <i>hillmanii</i>	Hillman's silverscale	2B.2	2,110.0
<i>Atriplex argentea</i> var. <i>longitrichoma</i>	Pahrump orache	1B.1	37.8
<i>Atriplex gardneri</i> var. <i>falcata</i>	falcate saltbush	2B.2	69.2
<i>Blepharidachne kingii</i>	King's eyelash grass	2B.3	57,004.3
<i>Boechera bodiensis</i>	Bodie Hills rockcress	1B.3	1,313.1
<i>Boechera cobrensis</i>	Masonic rockcress	2B.3	1,990.6
<i>Boechera dispar</i>	pinyon rockcress	2B.3	7,670.1
<i>Boechera lincolnensis</i>	Lincoln rockcress	2B.3	52,056.1
<i>Boechera pendulina</i>	rabbit-ear rockcress	2B.1	775.8
<i>Boechera shockleyi</i>	Shockley's rockcress	2B.2	431.5
<i>Boechera tularensis</i>	Tulare rockcress	1B.3	9.9
<i>Boechera yorkii</i>	Last Chance rockcress	1B.3	14.8
<i>Botrychium crenulatum</i>	scalloped moonwort	2B.2	2.6
<i>Bouteloua trifida</i>	three-awned grama	2B.3	4,535.9
<i>Calochortus excavatus</i>	Inyo County star-tulip	1B.1	6,252.4
<i>Calochortus striatus</i>	alkali mariposa-lily	1B.2	5.0
<i>Calyptidium pygmaeum</i>	pygmy pussypaws	1B.2	2,335.3
<i>Canbya candida</i>	white pygmy-poppy	4.2	54.1
<i>Carex duriuscula</i>	spikerush sedge	2B.3	69.8
<i>Carex petasata</i>	Liddon's sedge	2B.3	17.4
<i>Carex scirpoidea</i> ssp. <i>pseudoscirpoidea</i>	western single-spiked sedge	2B.2	430.8
<i>Castela emoryi</i>	Emory's crucifixion-thorn	2B.2	72.9
<i>Chaenactis douglasii</i> var. <i>alpina</i>	alpine dusty maidens	2B.3	1.2
<i>Chaetadelpa wheeleri</i>	Wheeler's dune-broom	2B.2	3,967.7
<i>Chloropyron tecopense</i>	Tecopa bird's-beak	1B.2	65.8
<i>Chrysothamnus greenei</i>	Greene's rabbitbrush	2B.3	7,036.5

Scientific Name	Common Name	Plant Status	Total Acres
<i>Cladium californicum</i>	California saw-grass	2B.2	2,082.4
<i>Clarkia xantiana</i> ssp. <i>parviflora</i>	Kern Canyon clarkia	4.2	2,197.8
<i>Claytonia panamintensis</i>	Panamint spring beauty	1B.1	9.9
<i>Cordylanthus eremicus</i> ssp. <i>kernensis</i>	Kern Plateau bird's-beak	1B.3	1,071.1
<i>Corispermum americanum</i> var. <i>americanum</i>	American bugseed	2B.2	1,995.7
<i>Coryphantha chlorantha</i>	desert pincushion	2B.1	70,729.8
<i>Crepis runcinata</i>	fiddleleaf hawksbeard	2B.2	5,126.7
<i>Cryptantha clokeyi</i>	Clokey's cryptantha	1B.2	2,060.5
<i>Cryptantha fendleri</i>	sand dune cryptantha	2B.2	42.7
<i>Cryptantha incana</i>	Tulare cryptantha	1B.3	66.4
<i>Cuniculotinus gramineus</i>	Panamint rock-goldenrod	2B.3	1,792.7
<i>Cymopterus gilmanii</i>	Gilman's cymopterus	2B.3	7,111.5
<i>Cymopterus multinervatus</i>	purple-nerve cymopterus	2B.2	782.0
<i>Cymopterus ripleyi</i> var. <i>saniculoides</i>	sanicle cymopterus	1B.2	4,619.0
<i>Dedeckera eurekaensis</i>	July gold	1B.3, SR	1,475.2
<i>Deinandra mohavensis</i>	Mojave tarplant	1B.3, SE	4.9
<i>Delphinium inopinum</i>	unexpected larkspur	4.3	33.3
<i>Diplacus parryi</i>	Parry's monkeyflower	2B.3	1,789.7
<i>Draba cana</i>	canescent draba	2B.3	69.8
<i>Draba lonchocarpa</i>	spear-fruited draba	2B.3	1.5
<i>Draba praealta</i>	tall draba	2B.3	138.3
<i>Draba sharsmithii</i>	Mt. Whitney draba	1B.3	2,666.0
<i>Draba sierrae</i>	Sierra draba	1B.3	1,469.2
<i>Dudleya saxosa</i> ssp. <i>saxosa</i>	Panamint dudleya	1B.3	2,730.0
<i>Elymus salina</i>	Salina Pass wild-rye	2B.3	58.6
<i>Elymus scribneri</i>	Scribner's wheat grass	2B.3	35,336.6
<i>Enceliopsis covillei</i>	Panamint daisy	1B.2	3,887.1
<i>Enceliopsis nudicaulis</i> var. <i>corrugata</i>	Ash Meadows daisy	3.3, FT	183.6
<i>Ephedra torreyana</i>	Torrey's Mormon-tea	2B.1	116.8
<i>Eremothera boothii</i> ssp. <i>boothii</i>	Booth's evening-primrose	2B.3	5,052.3
<i>Eremothera boothii</i> ssp. <i>intermedia</i>	Booth's hairy evening-primrose	2B.3	10,603.7
<i>Ericameria gilmanii</i>	Gilman's goldenbush	1B.3	2,748.4
<i>Erigeron calvus</i>	bald daisy	1B.1	1,967.5
<i>Erigeron compactus</i>	compact daisy	2B.3	4,959.8
<i>Erigeron uncialis</i> var. <i>uncialis</i>	limestone daisy	1B.2	950.5
<i>Eriogonum bifurcatum</i>	forked buckwheat	1B.2	272.0

Scientific Name	Common Name	Plant Status	Total Acres
<i>Eriogonum contiguum</i>	Reveal's buckwheat	2B.3	11,875.6
<i>Eriogonum eremicola</i>	Wildrose Canyon buckwheat	1B.3	264.4
<i>Eriogonum gilmanii</i>	Gilman's buckwheat	1B.3	9,640.9
<i>Eriogonum hoffmannii</i> var. <i>hoffmannii</i>	Hoffmann's buckwheat	1B.3	564.9
<i>Eriogonum hoffmannii</i> var. <i>robustus</i>	robust Hoffmann's buckwheat	1B.3	1,053.7
<i>Eriogonum intrafractum</i>	jointed buckwheat	1B.3	5,136.8
<i>Eriogonum mensicola</i>	Pinyon Mesa buckwheat	1B.3	7,904.7
<i>Eriogonum microthecum</i> var. <i>panamintense</i>	Panamint Mountains buckwheat	1B.3	3,597.8
<i>Eriogonum wrightii</i> var. <i>olanchense</i>	Olancha Peak buckwheat	1B.3	10.9
<i>Erioneuron pilosum</i>	hairy erioneuron	2B.3	1,379.7
<i>Erythranthe calcicola</i>	limestone monkeyflower	1B.3	4,459.7
<i>Erythranthe utahensis</i>	Utah monkeyflower	2B.1	81.6
<i>Euphorbia parryi</i>	Parry's spurge	2B.3	69.0
<i>Fimbristylis thermalis</i>	hot springs fimbristylis	2B.2	4,373.5
<i>Frasera albomarginata</i> var. <i>albomarginata</i>	desert green-gentian	2B.2	2,614.1
<i>Galium hilendiae</i> ssp. <i>carneum</i>	Panamint Mountains bedstraw	1B.3	1,548.3
<i>Galium hypotrichium</i> ssp. <i>tomentellum</i>	Telescope Peak bedstraw	1B.3	2.1
<i>Gilmania luteola</i>	golden-carpet gilmania	1B.3	3,902.3
<i>Greeneocharis circumscissa</i> var. <i>rosulata</i>	rosette cushion cryptantha	1B.2	1,129.8
<i>Grindelia fraxinipratensis</i>	Ash Meadows gumplant	1B.2, FT	513.6
<i>Grusonia pulchella</i>	beautiful cholla	2B.2	794.1
<i>Hackelia sharsmithii</i>	Sharsmith's stickseed	2B.3	5,011.2
<i>Hesperidanthus jaegeri</i>	Jaeger's hesperidanthus	1B.2	2,338.8
<i>Holmgrenanthe petrophila</i>	rock lady	1B.2, SR	79.8
<i>Horkelia hispidula</i>	White Mountains horkelia	1B.3	26.3
<i>Hosackia oblongifolia</i> var. <i>cuprea</i>	copper-flowered bird's-foot trefoil	1B.3	48,354.7
<i>Hulsea vestita</i> ssp. <i>inyoensis</i>	Inyo hulsea	2B.2	3,865.6
<i>Hymenopappus filifolius</i> var. <i>nanus</i>	little cutleaf	2B.3	5,038.5
<i>Imperata brevifolia</i>	California satintail	2B.1	2,389.2
<i>Ivesia arizonica</i> var. <i>arizonica</i>	yellow ivesia	2B.3	3,313.8
<i>Ivesia campestris</i>	field ivesia	1B.2	1,682.7
<i>Ivesia kingii</i> var. <i>kingii</i>	alkali ivesia	2B.2	182.3
<i>Jaffuelobryum raui</i>	Rau's jaffuelobryum moss	2B.3	4.9
<i>Jaffuelobryum wrightii</i>	Wright's jaffuelobryum moss	2B.3	279.3
<i>Johanneshowellia puberula</i>	downy buckwheat	2B.3	284.1

Scientific Name	Common Name	Plant Status	Total Acres
<i>Juncus nodosus</i>	knotted rush	2B.3	207.0
<i>Lathyrus hitchcockianus</i>	Bullfrog Mountain pea	1B.3	4.9
<i>Loeflingia squarrosa</i> var. <i>artemisiarum</i>	sagebrush loeflingia	2B.2	240.6
<i>Lomatium foeniculaceum</i> ssp. <i>macdougalii</i>	Macdougall's lomatium	2B.2	4,320.8
<i>Lupinus magnificus</i> var. <i>hesperius</i>	Mcgee Meadows lupine	1B.3	2,297.9
<i>Lupinus magnificus</i> var. <i>magnificus</i>	Panamint Mountains lupine	1B.2	1,094.3
<i>Lupinus padre-crowleyi</i>	Father Crowley's lupine	1B.2, SR	1,640.2
<i>Lupinus polyphyllus</i> var. <i>humicola</i>	Holmgren's lupine	2B.3	304.2
<i>Lupinus pusillus</i> var. <i>intermontanus</i>	intermontane lupine	2B.3	5,263.0
<i>Mentzelia inyoensis</i>	Inyo blazing star	1B.3	31.3
<i>Mentzelia polita</i>	polished blazing star	1B.2	7.5
<i>Mentzelia pterosperma</i>	wing-seed blazing star	2B.2	7.7
<i>Mentzelia torreyi</i>	Torrey's blazing star	2B.2	497.3
<i>Mentzelia tricuspis</i>	spiny-hair blazing star	2B.1	279.3
<i>Mentzelia tridentata</i>	creamy blazing star	1B.3	3,260.4
<i>Monardella beneolens</i>	sweet-smelling monardella	1B.3	929.5
<i>Muhlenbergia utilis</i>	aparejo grass	2B.2	340.4
<i>Myurella julacea</i>	small mousetail moss	2B.3	88.7
<i>Nama demissa</i> var. <i>covillei</i>	Coville's purple mat	1B.3	11,236.9
<i>Nemacladus calcaratus</i>	Chimney Creek nemacladus	1B.2	7.6
<i>Nemacladus inyoensis</i>	Badger Flat threadplant	1B.2	24.9
<i>Nitrophila mohavensis</i>	Amargosa nitrophila	1B.1, FE, SE	1,528.8
<i>Oenothera californica</i> ssp. <i>eurekaensis</i>	Eureka Dunes evening-primrose	1B.2, FD, SR	5,264.7
<i>Oenothera longissima</i>	long-stem evening-primrose	2B.2	69.8
<i>Oreocarya roosiorum</i>	bristlecone cryptantha	1B.2, SR	132.7
<i>Oryctes nevadensis</i>	Nevada oryctes	2B.1	28,233.9
<i>Oxytheca watsonii</i>	Watson's oxytheca	2B.2	1,491.7
<i>Parnassia parviflora</i>	small-flowered grass-of-Parnassus	2B.2	1,986.6
<i>Pediomelum castoreum</i>	Beaver Dam breadroot	1B.2	5.0
<i>Penstemon calcareus</i>	limestone beardtongue	1B.3	3,429.0
<i>Penstemon fruticiformis</i> var. <i>amargosae</i>	Amargosa beardtongue	1B.3	6,577.2
<i>Penstemon pahutensis</i>	Pahute beardtongue	2B.3	9.9
<i>Penstemon stephensii</i>	Stephens' beardtongue	1B.3	428.5
<i>Penstemon utahensis</i>	Utah beardtongue	2B.3	2,083.7
<i>Perityle inyoensis</i>	Inyo rock daisy	1B.2, SCE	237.0

Scientific Name	Common Name	Plant Status	Total Acres
<i>Perityle villosa</i>	Hanaupah rock daisy	1B.3	461.1
<i>Petalonyx thurberi</i> ssp. <i>gilmanii</i>	Death Valley sandpaper-plant	1B.3	5,381.9
<i>Peteria thompsoniae</i>	spine-noded milk vetch	2B.1	73.3
<i>Petrophytum caespitosum</i> ssp. <i>acuminatum</i>	marble rockmat	1B.3	10.8
<i>Phacelia amabilis</i>	Saline Valley phacelia	3.3	236.9
<i>Phacelia anelsonii</i>	Aven Nelson's phacelia	2B.3	1,965.9
<i>Phacelia barnebyana</i>	Barneby's phacelia	2B.3	2,551.9
<i>Phacelia inyoensis</i>	Inyo phacelia	1B.2	4,101.0
<i>Phacelia monoensis</i>	Mono County phacelia	1B.1	17.4
<i>Phacelia mustelina</i>	Death Valley round-leaved phacelia	1B.3	6,571.1
<i>Phacelia nashiana</i>	Charlotte's phacelia	1B.2	523.6
<i>Phacelia novenmillensis</i>	Nine Mile Canyon phacelia	1B.2	9.0
<i>Phacelia parishii</i>	Parish's phacelia	1B.1	19.9
<i>Phacelia pulchella</i> var. <i>gooddingii</i>	Goodding's phacelia	2B.2	2,603.0
<i>Physocarpus alternans</i>	Nevada ninebark	2B.3	1,496.6
<i>Pinus albicaulis</i>	whitebark pine	FT	51,555
<i>Plagiobothrys nitens</i>	shiny-nutlet popcornflower	2B.1	1,968.3
<i>Plagiobothrys parishii</i>	Parish's popcornflower	1B.1	3,957.2
<i>Plagiobothrys salsus</i>	desert popcornflower	2B.2	101.9
<i>Poa lettermanii</i>	Letterman's blue grass	2B.3	2,294.6
<i>Pohlia tundrae</i>	tundra thread moss	2B.3	1,991.3
<i>Polygala heterorhyncha</i>	notch-beaked milkwort	2B.3	217.9
<i>Populus angustifolia</i>	narrow-leaved cottonwood	2B.2	2,022.4
<i>Potamogeton robbinsii</i>	Robbins' pondweed	2B.3	8.3
<i>Potentilla morefieldii</i>	Morefield's cinquefoil	1B.3	308.9
<i>Ranunculus hydrocharoides</i>	frog's-bit buttercup	2B.1	41.7
<i>Sabulina stricta</i>	bog sandwort	2B.3	2,636.4
<i>Salix nivalis</i>	snow willow	2B.3	279.4
<i>Saltugilia latimeri</i>	Latimer's woodland-gilia	1B.2	48.1
<i>Sarcobatus baileyi</i>	Bailey's greasewood	2B.3	1,986.0
<i>Schoenus nigricans</i>	black bog-rush	2B.2	222.0
<i>Sclerocactus johnsonii</i>	Johnson's bee-hive cactus	2B.2	179,153.3
<i>Sidalcea covillei</i>	Owens Valley checkerbloom	1B.1, SE	51,757.1
<i>Sidalcea multifida</i>	cut-leaf checkerbloom	2B.3	0.8
<i>Sisyrinchium funereum</i>	Death Valley blue-eyed grass	1B.3	410.4
<i>Sphaeralcea rusbyi</i> var. <i>eremicola</i>	Rusby's desert-mallow	1B.2	2,194.4

Scientific Name	Common Name	Plant Status	Total Acres
<i>Sphenopholis obtusata</i>	prairie wedge grass	2B.2	195.3
<i>Stipa arida</i>	Mormon needle grass	2B.3	6,685.8
<i>Stipa divaricata</i>	small-flowered rice grass	2B.3	114.4
<i>Streptanthus gracilis</i>	alpine jewelflower	1B.3	25.8
<i>Suaeda occidentalis</i>	western seablite	2B.3	279.2
<i>Swallenia alexandrae</i>	Eureka Valley dune grass	1B.2, FT, SR	3,173.3
<i>Tetracoccus ilicifolius</i>	holly-leaved tetracoccus	1B.3	340.8
<i>Tetradymia tetrameres</i>	dune horsebrush	2B.2	5.0
<i>Thelypodium integrifolium</i> ssp. <i>complanatum</i>	foxtail thelypodium	2B.2	2,485.7
<i>Townsendia leptotes</i>	slender townsendia	2B.3	69.8
<i>Transberingia bursifolia</i> ssp. <i>virgata</i>	virgate halimolobos	2B.3	20.9
<i>Trichophorum pumilum</i>	little bulrush	2B.2	5.0
<i>Trifolium dedeckerae</i>	Dedecker's clover	1B.3	463.2
<i>Triglochin palustris</i>	marsh arrow-grass	2B.3	2,748.6
<i>Viola pinetorum</i> ssp. <i>grisea</i>	grey-leaved violet	1B.2	286.9
<i>Zeltnera namophila</i>	spring-loving centaury	1B.1, FT	4,747.8

California Rare Plant Ranks:

- 1B = Plants rare, threatened, or endangered in California and elsewhere.
- 2B = Plants rare, threatened, or endangered in California but more common elsewhere.
- 3 = Review List: Plants about which more information is needed
- 4 = Watch List: Plants of limited distribution
- FD = Federally delisted
- FE = Federally endangered
- FT = Federally threatened
- SCE = California state candidate endangered
- SE = listed by California as endangered
- SR = listed by California as rare

PUBLIC EDUCATION AND OUTREACH PROGRAMS

LOCAL AND STATE PROGRAMS

Independence Fire Safe Council

The Independence Fire Safe Council was established in spring 2019 by community volunteers to promote fire safety and prevention, provide education, and exchange information in the community. The council offers various educational resources such as brochures on hardened homes and defensible space,

evacuation guides, disaster readiness guides, and home evaluation guides. Each spring the Independence Fire Safe Council provides a free green waste disposal event for the community. Volunteers help clear more vulnerable properties, a roll-off dumpster for biomass material is located at the school campus, and free lunch and educational materials are available to residents.

The Independence Fire Safe Council has a webpage on the ESWA site:

<https://www.eswildfirealliance.org/independence-fsc>

Wheeler Crest Fire Safe Council (Mono County)

The Wheeler Crest Fire Safe Council is a volunteer organization that aims to promote awareness of fire safe practices, reducing loss of property due to wildfire impacts, enhance the effectiveness of wildland firefighting efforts, and preserve wildlife and native habitats. The volunteers take part in fuels reduction projects that expand or re-treat existing fuel breaks and reduce fuel load on built and unbuilt parcels. The council provides the community with information regarding water resources, invasive weeds, signage, outdoor burning, and evacuation.

The Wheeler Crest Fire Safe Council has a webpage on the ESWA site:

<https://www.eswildfirealliance.org/wheeler-crest-fsc>

Eastern Sierra Wildfire Alliance

The ESWA was established in response to wildfire events including the 2015 Round Fire with the goal of preventing catastrophic wildfires, improving ecosystem health, and build community resiliency through an assortment of programs. The Alliance supports wildfire mitigation activities such as vegetation management, community education and engagement, pursuit of grant funding, green waste and chipping programs, implementing CWPPs, and carrying out capacity building programs. Educational resources are provided by the Alliance that inform the public on proper defensible space and home hardening measures. The Alliance hosts webpages for the various fire safe councils.

For more information, please visit the ESWA webpage: <https://www.eswildfirealliance.org/>

40 Acres Fire Safe Council

The 40 Acres Fire Safe Council was established in 2020 by community volunteers to promote fire safety and prevention, provide education, and exchange information in the community. The Council offers various educational resources such as brochures on hardened homes and defensible space, evacuation guides, disaster readiness guides, and home evaluation guides.

The 40 Acres Fire Safe Council may add a webpage on the ESWA site in 2024.

<https://www.eswildfirealliance.org/fire-safe-councils>

Wilkerson Firesafe Council

The Wilkerson Fire Safe Council was established by a group of community members aiming to increase wildfire safety throughout their community. The Council recognizes the barriers faced by the community with regard to firefighting capabilities, so greater focus is placed on wildfire prevention and mitigative action. Through increased access to grant funding opportunities, the establishment of a communication network, and assistance with fuel reduction projects, the council provides multifaceted approach to fire risk reduction for the surrounding community.

For more information and to join the communication list, please visit the Wilkerson Fire Safe Council webpage: <https://firesafewilkerson.com/>

California Department of Forestry and Fire Protection (CAL FIRE)

CAL FIRE provides a plethora of fire education resources to ensure Californians are prepared for wildfire. These educational materials include but are not limited to:

- [Ready Set Go! Wildfire Action Plan](#)
- [Are You Ready? Defensible Space and Home Hardening](#)
- [Wildfire Action Plan](#)
- [Are You Ready? Defensible Space and Home Hardening](#)

NATIONAL PROGRAMS

Ready, Set, Go!

The Ready, Set, Go! Program, which is managed by the International Association of Fire Chiefs, was launched in 2011 at the WUI conference. The program seeks to develop and improve the dialogue between fire departments and residents, providing teaching for residents who live in high-risk wildfire areas—and the WUI—on how to best prepare themselves and their properties against fire threats (International Association of Fire Chiefs 2021). The County utilizes the Ready, Set, Go! Program for their public outreach with a focus on making communities “fire adapted.”

The tenets of Ready, Set, Go! as included on the website (<http://www.wildlandfirersg.org>) are:

Ready – Take personal responsibility and prepare long before the threat of a wildland fire so your home is ready in case of a fire. Create defensible space by clearing brush away from your home. Use fire-resistant landscaping and harden your home with fire-safe construction measures. Assemble emergency supplies and belongings in a safe place. Plan escape routes and ensure all those residing within the home know the plan of action.

Set – Pack your emergency items. Stay aware of the latest news and information on the fire from local media, your local fire department, and public safety.

Go – Follow your personal wildland fire action plan. Doing so will not only support your safety but will allow firefighters to best maneuver resources to combat the fire.

National Fire Protection Association

The NFPA is a global non-profit organization devoted to eliminating death, injury, property, and economic loss due to fire, electrical, and related hazards. Its 300 codes and standards are designed to minimize the risk and effects of fire by establishing criteria for building, processing, design, service, and installation around the world.

The NFPA develops easy-to-use educational programs, tools, and resources for all ages and audiences, including Fire Prevention Week, an annual campaign that addresses a specific fire safety theme.

The NFPA's Firewise Communities program (www.firewise.org) encourages local solutions for wildfire safety by involving property owners, community leaders, planners, developers, firefighters, and others in

the effort to protect people and property from wildfire risks (National Fire Protection Association [NFPA] 2022).

The NFPA is a premier resource for fire data analysis and research. The Fire Analysis and Research division conducts investigations of fire incidents and produces a wide range of annual reports and special studies on all aspects of the nation's fire problem.

National Interagency Fire Center

The National Interagency Fire Center (NIFC) provides a wide array of fire resources and services. The National Interagency Coordination Center offers communication assistance to over 32,000 firefighters and 50 major events at one given time (NIFC 2021c). The Predictive Services group provides decision support information to be more proactive in anticipating significant fire activity and determining resource allocation needs, based on current fire danger, climate and forecasted weather. The Predictive Services group uses weather data from over 2,000 remote automated weather stations to assist in their analysis and predictions. The NWCG, which is nested under the NIFC, provides operational coordination to federal, state, local, tribal, and territorial partners (NIFC 2021c). The NIFC also has a training branch where training curriculums are developed to be used across the nation. For those too young to participate in the standard trainings, the NIFC offers FireWorks, an educational program designed for kids K–12. The program teaches children topics such as wildland fire science, ecosystem fluctuations, human interaction on the environment, and other environmental science topics (NIFC 2021d). The NIFC also provides public education resources (NIFC 2021e):

- [Wildfire Readiness – Home](#)
- [Wildfire Readiness – Business](#)
- [Wildfire Readiness – Farm and Ranch](#)
- [Weekend Wildfire Preparedness](#)
- [What to Do if a Wildfire is Approaching](#)
- [Wildfire Risk – Community](#)
- [Prepare and Protect Your Home](#)
- [Prepare Your Community](#)
- [One Less Spark, One Less Wildfire](#)
- [Only You Can Prevent Wildfires](#)

U.S. Fire Administration's WUI Toolkit

The USFA is an entity of the Department of Homeland Security's (DHS's) FEMA that aids in the preparation for and response to fire. Their WUI toolkit consists of a list of websites and other information regarding risk assessments, public outreach, and community training. Find the toolkit here:

<https://www.usfa.fema.gov/wui/>.

Wildfire Research Center (WiRē)

Wildfire Research Center (WiRē) is a non-profit organization that works with local wildfire services to achieve community-tailored pathways which reduce risk to wildfire while simultaneously promoting pathways to fire adaptation. WiRē's mission states that fire adaptation is "about living with fire", while

“creating safe and resilient communities that reduce wildfire risk on their properties before a fire, and supporting effective response when fires threaten a community.” WiRē states that wildfire is an integral component of many ecosystems, and that fire must be allowed, when safe, to ensure the health of forests. Core to WiRē’s approach are four main concepts. One, residents are critical actors in the wildland-urban interface wildfire problem. Two, action is central to adaptation. Three, people and their decisions are complex. Finally, four, decisions are not made in a vacuum. To achieve its goals and serve communities, WiRē will typically conduct a “rapid wildfire risk assessment,” which assesses what contributes to wildfire risk, such as, building materials, vegetation near homes, background fuels, local topography, and access to emergency fire services. Additionally, they also conduct “social surveys”, which assess residents’ perceptions about wildfire, wildfire risk, risk mitigation behavior, and assess their willingness towards taking action to reduce wildfire risk.

For more information, please visit <https://wildfireresearchcenter.org/>.

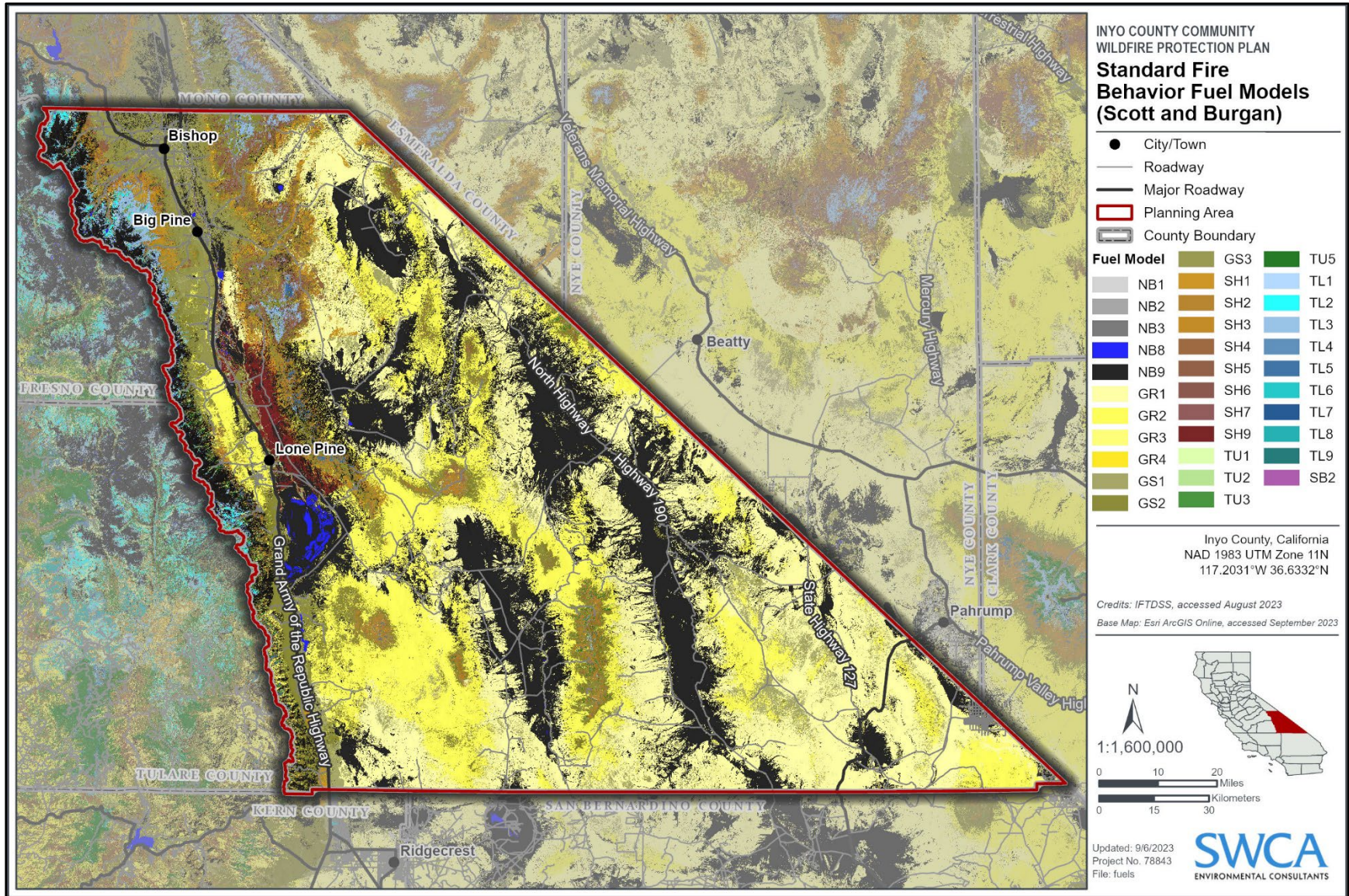
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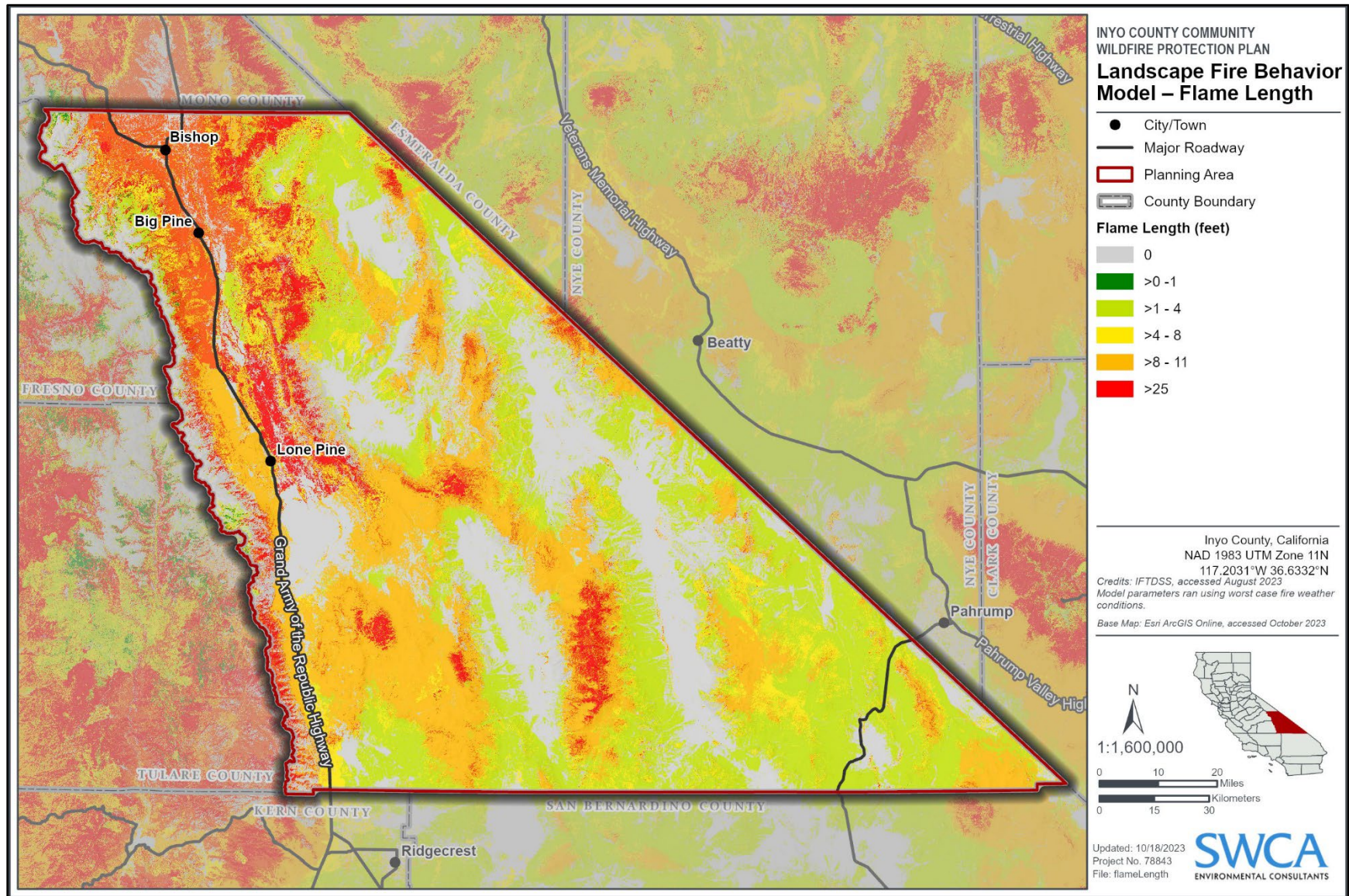
APPENDIX C:

Mapbook of Supporting Maps

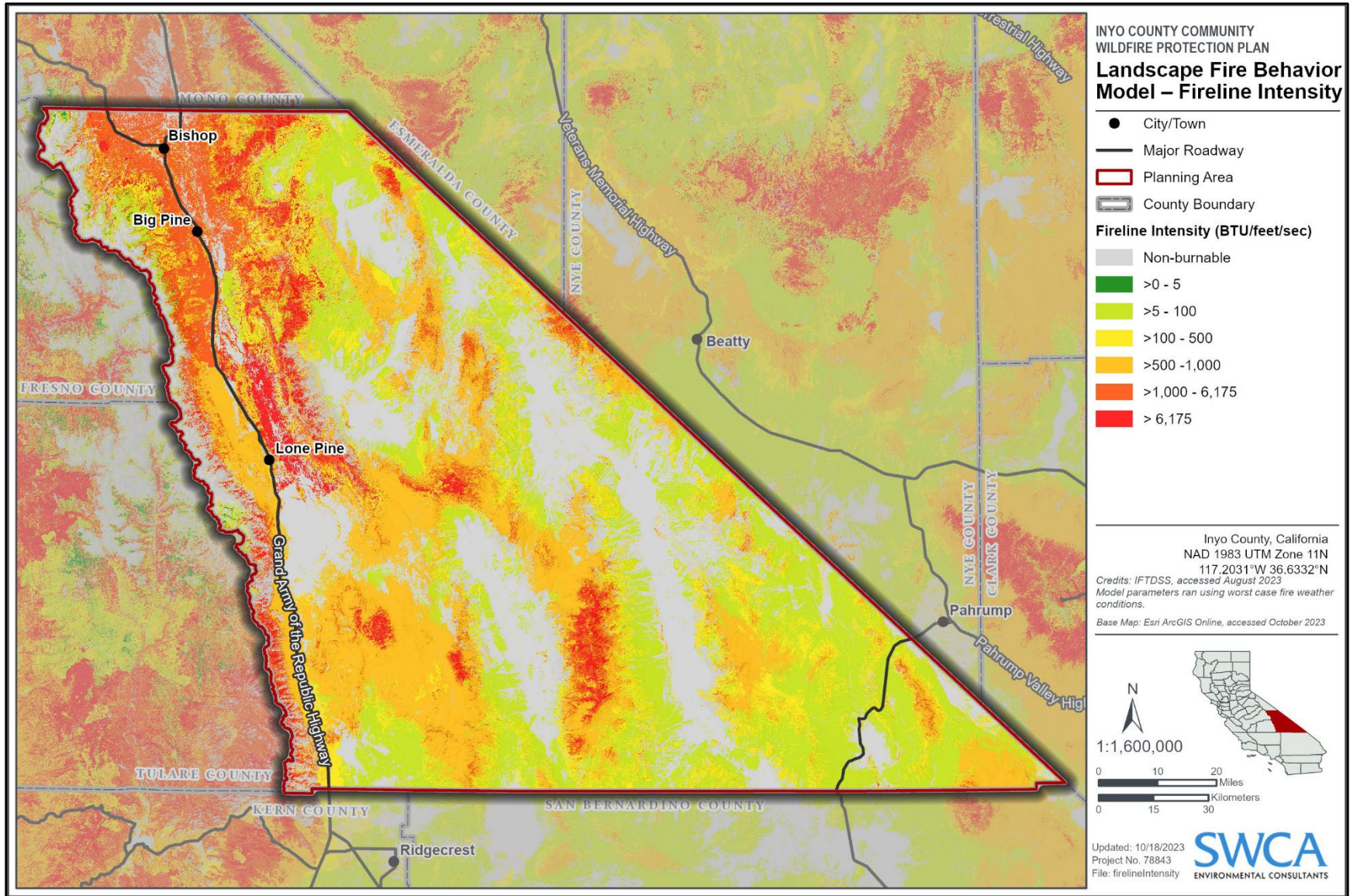
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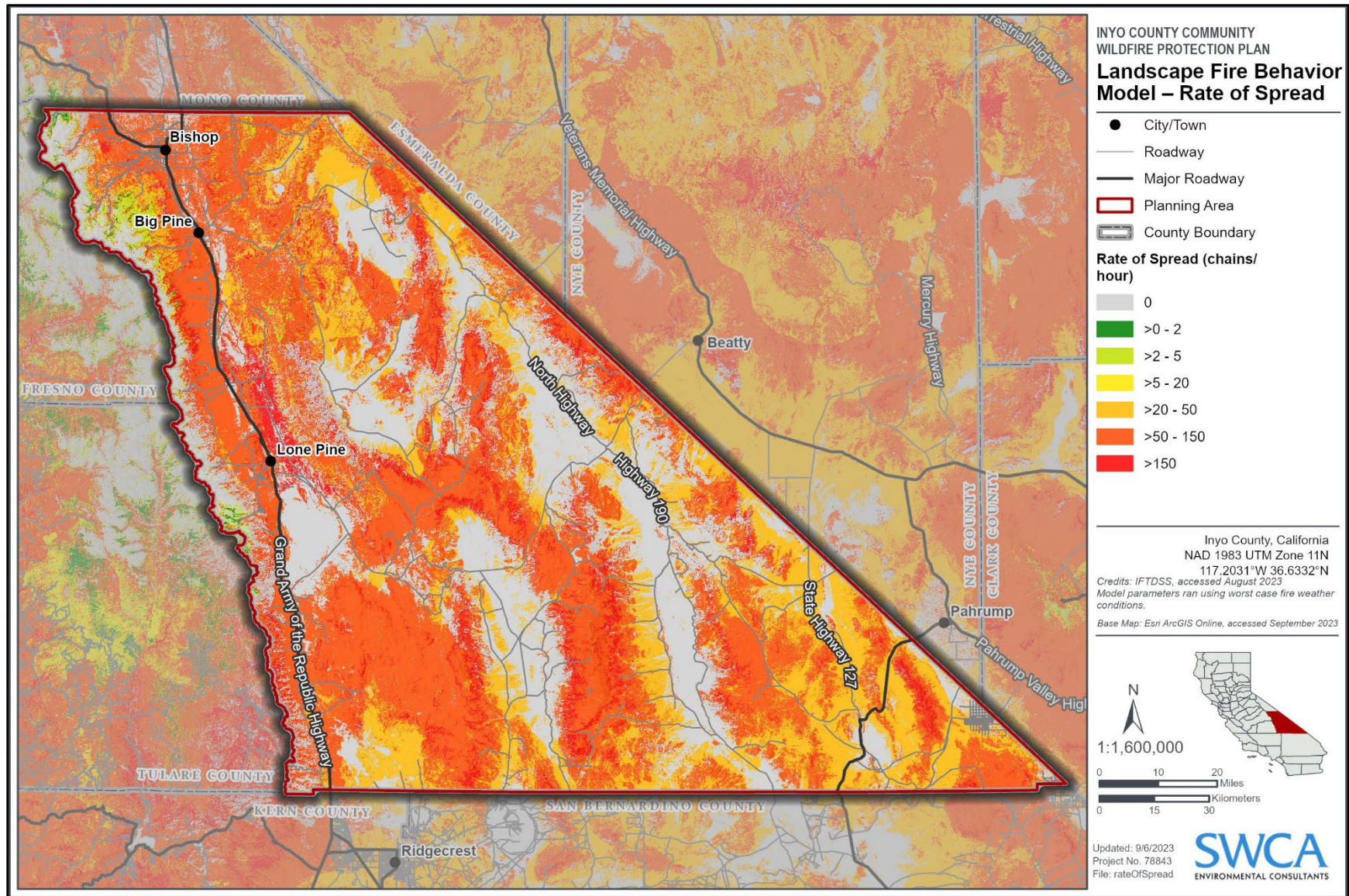
Map C.1. Scott and Burgan 40 Fire Behavior Fuel Models.



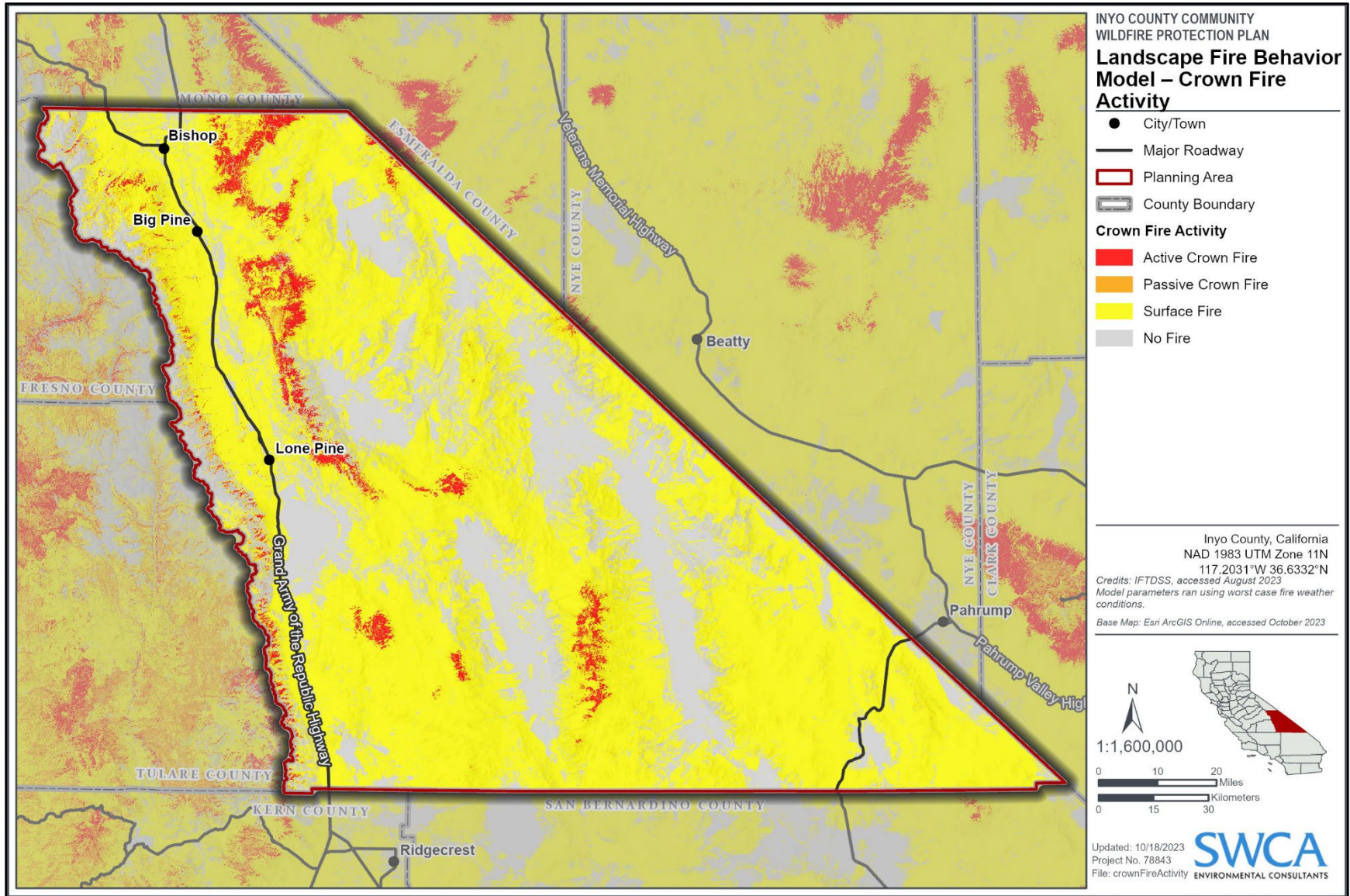
Map C.2. Risk-Hazard Assessment inputs: flame length.



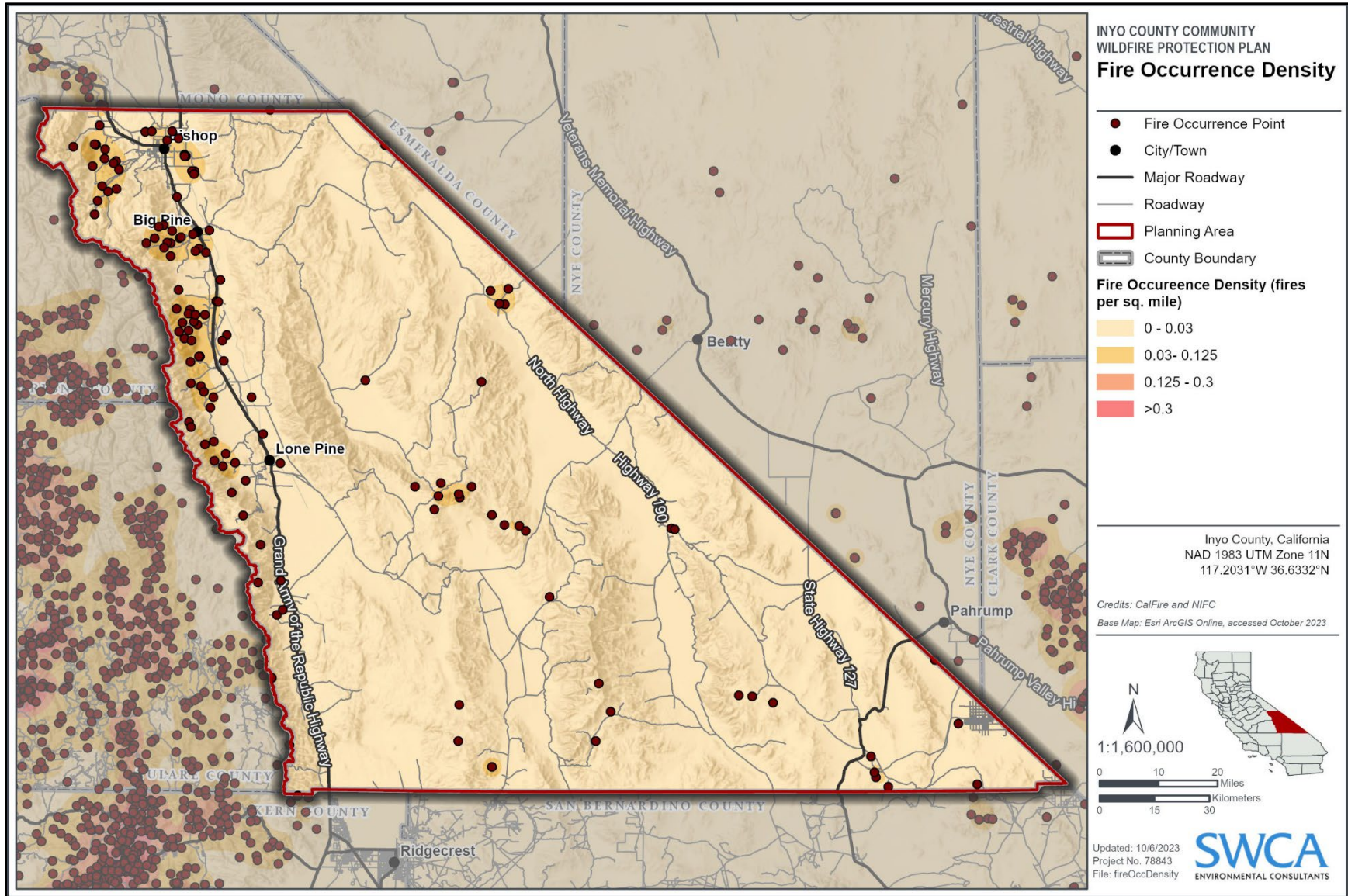
Map C.3. Risk-Hazard Assessment inputs: fireline intensity.



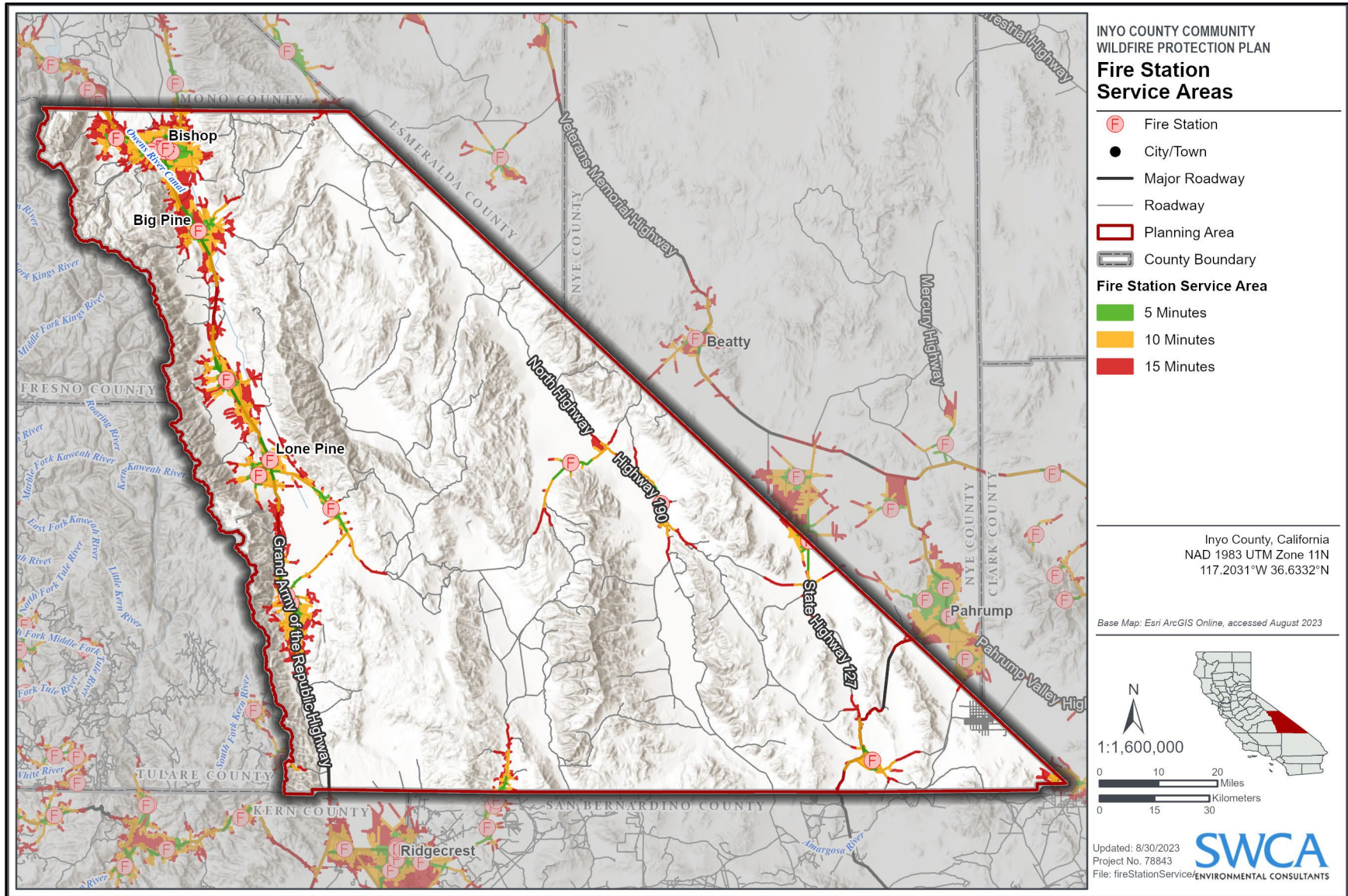
Map C.4. Risk-Hazard Assessment inputs: rate of spread.



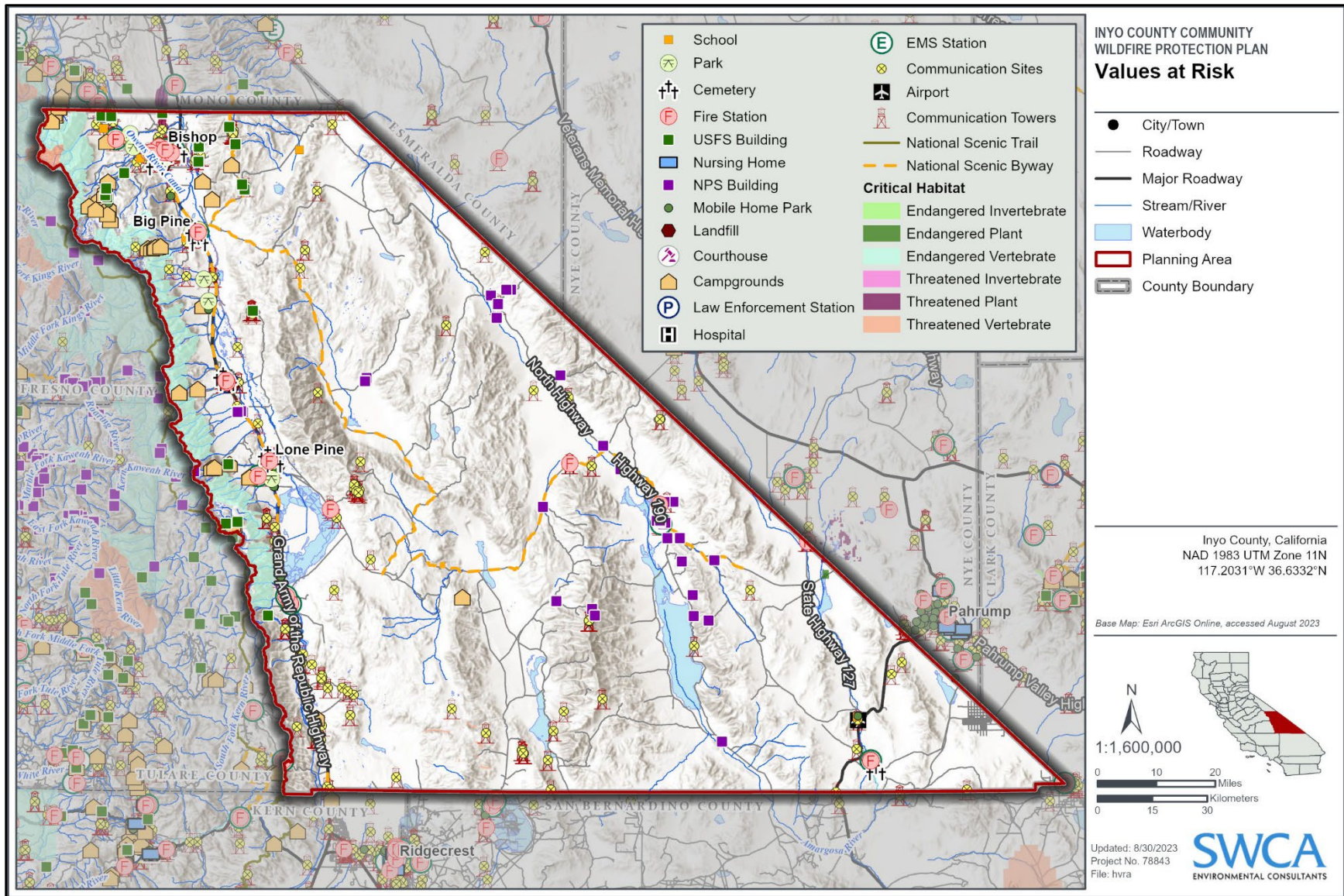
Map C.5. Risk-Hazard Assessment inputs: crown fire activity.



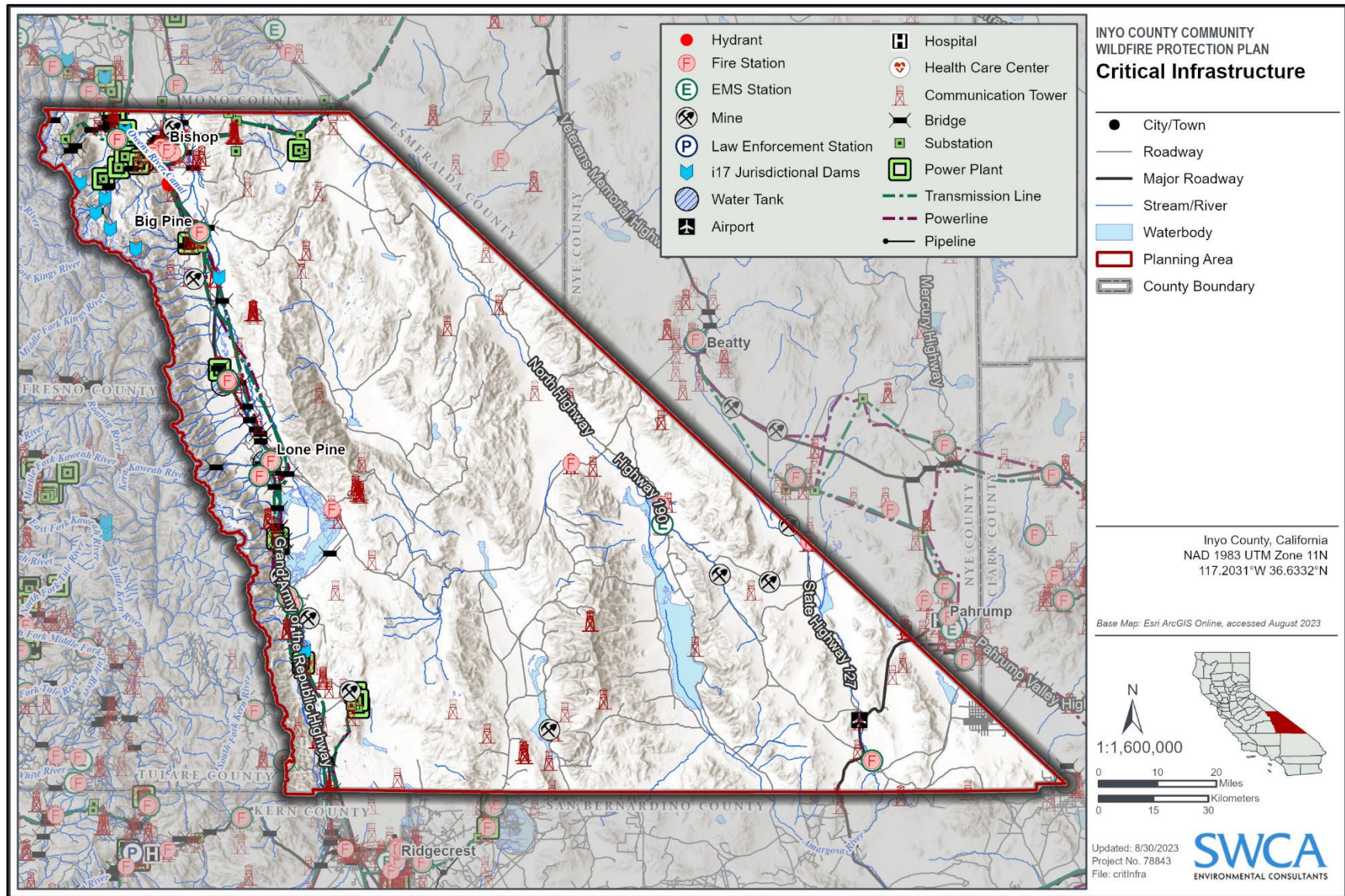
Map C.6. Risk-Hazard Assessment inputs: fire occurrence density.



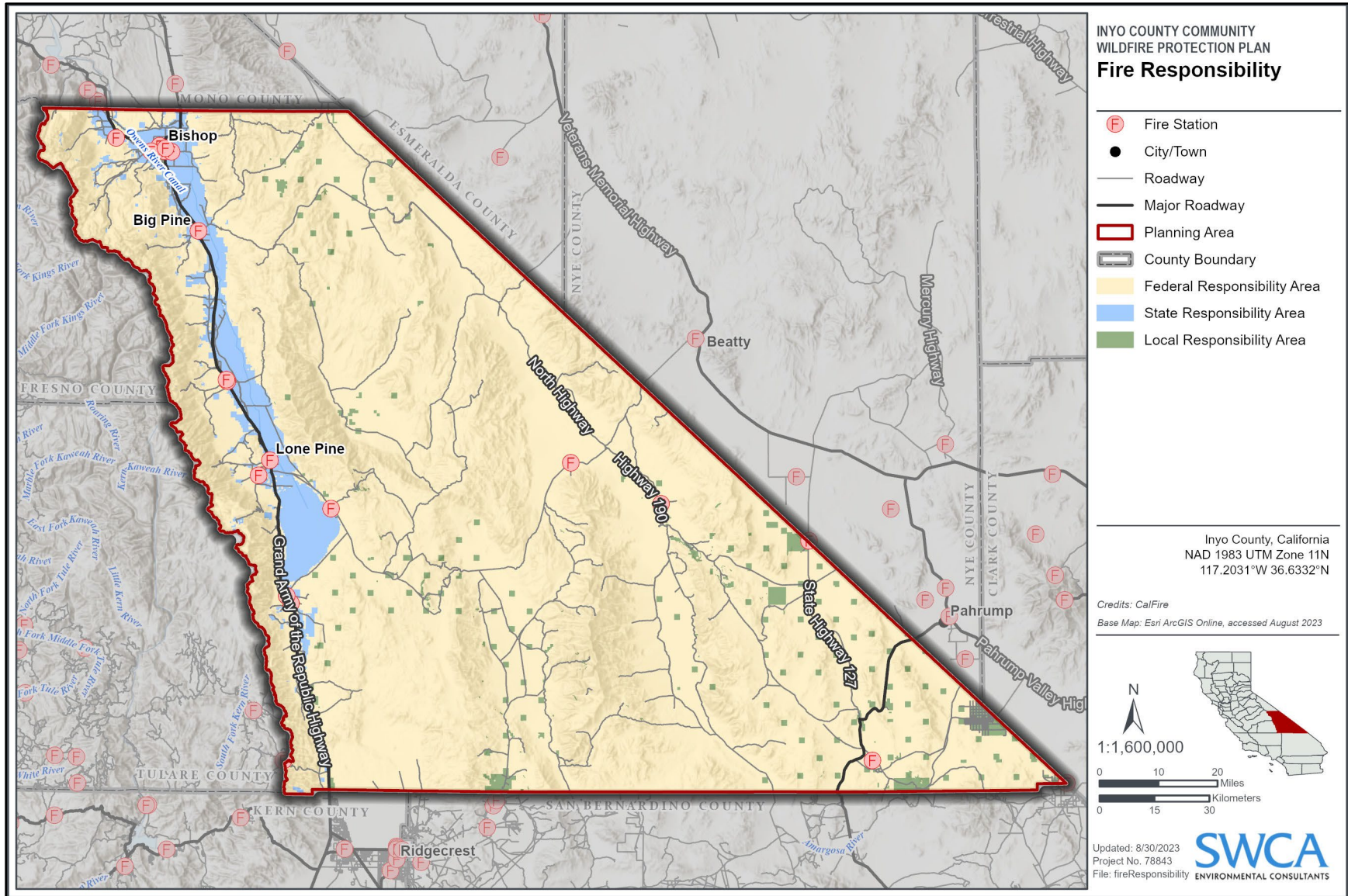
Map C.7. Risk-Hazard Assessment inputs: fire station service areas.



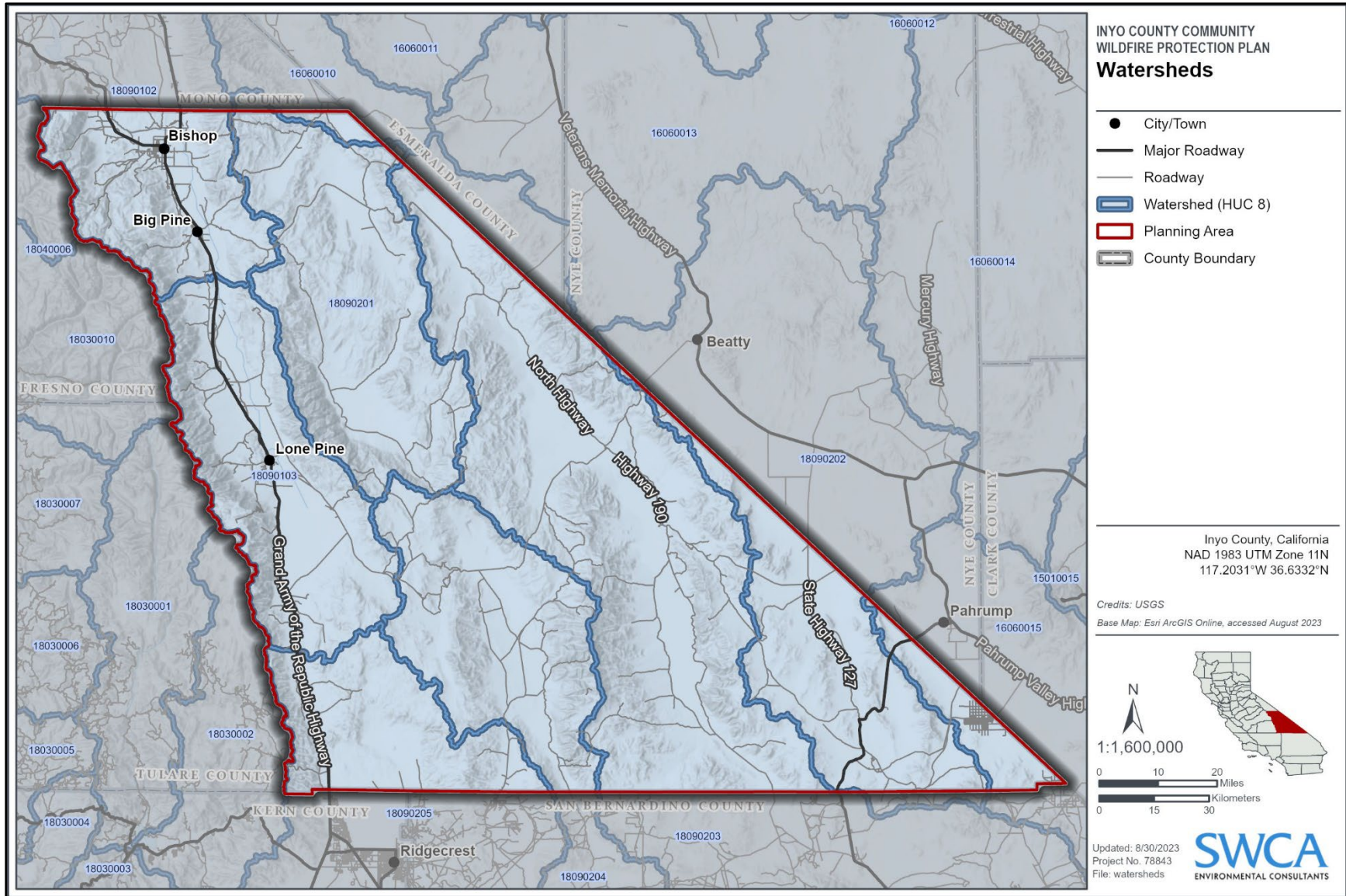
Map C.8. Values at risk.



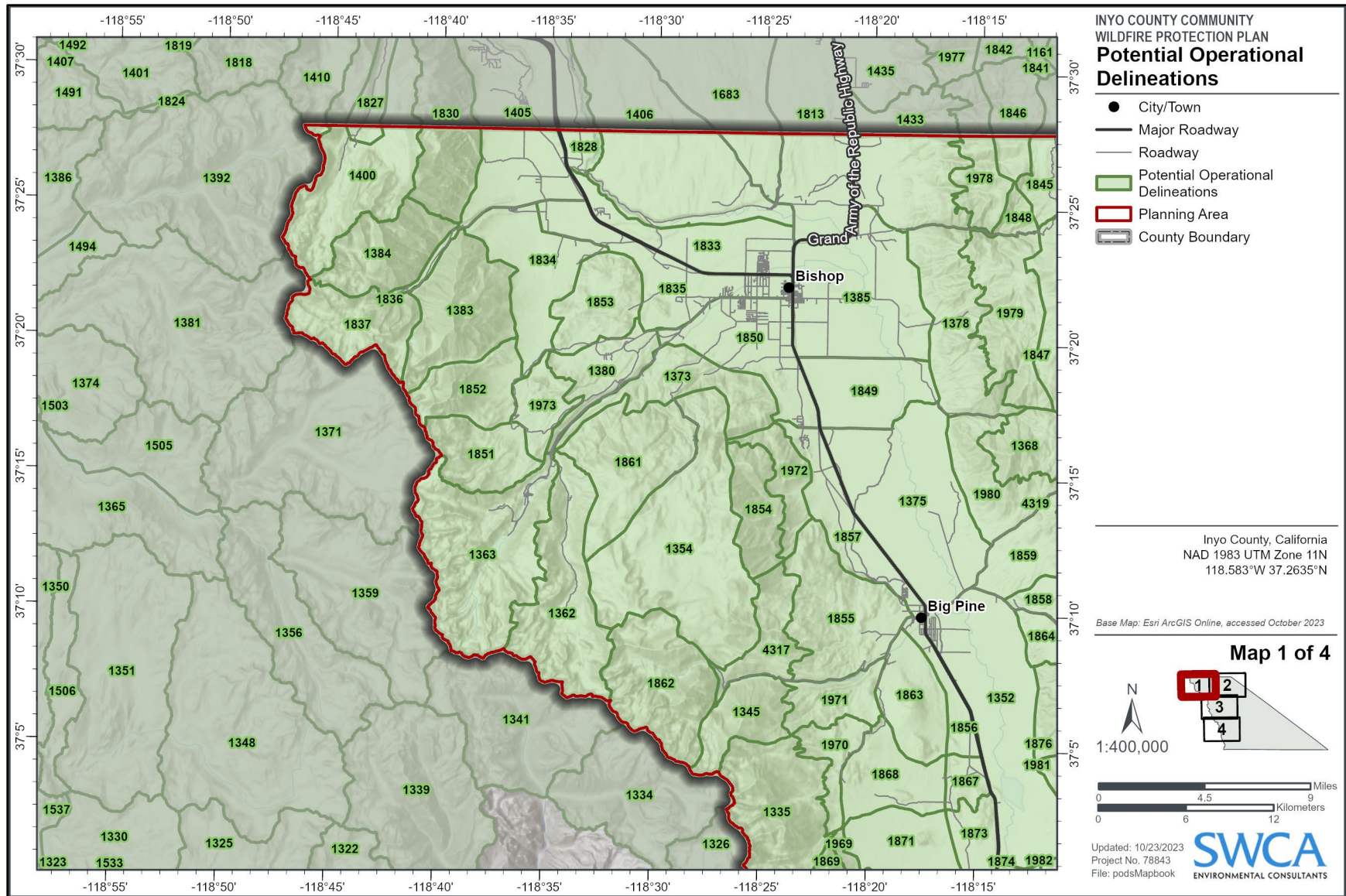
Map C.9. Critical infrastructure.



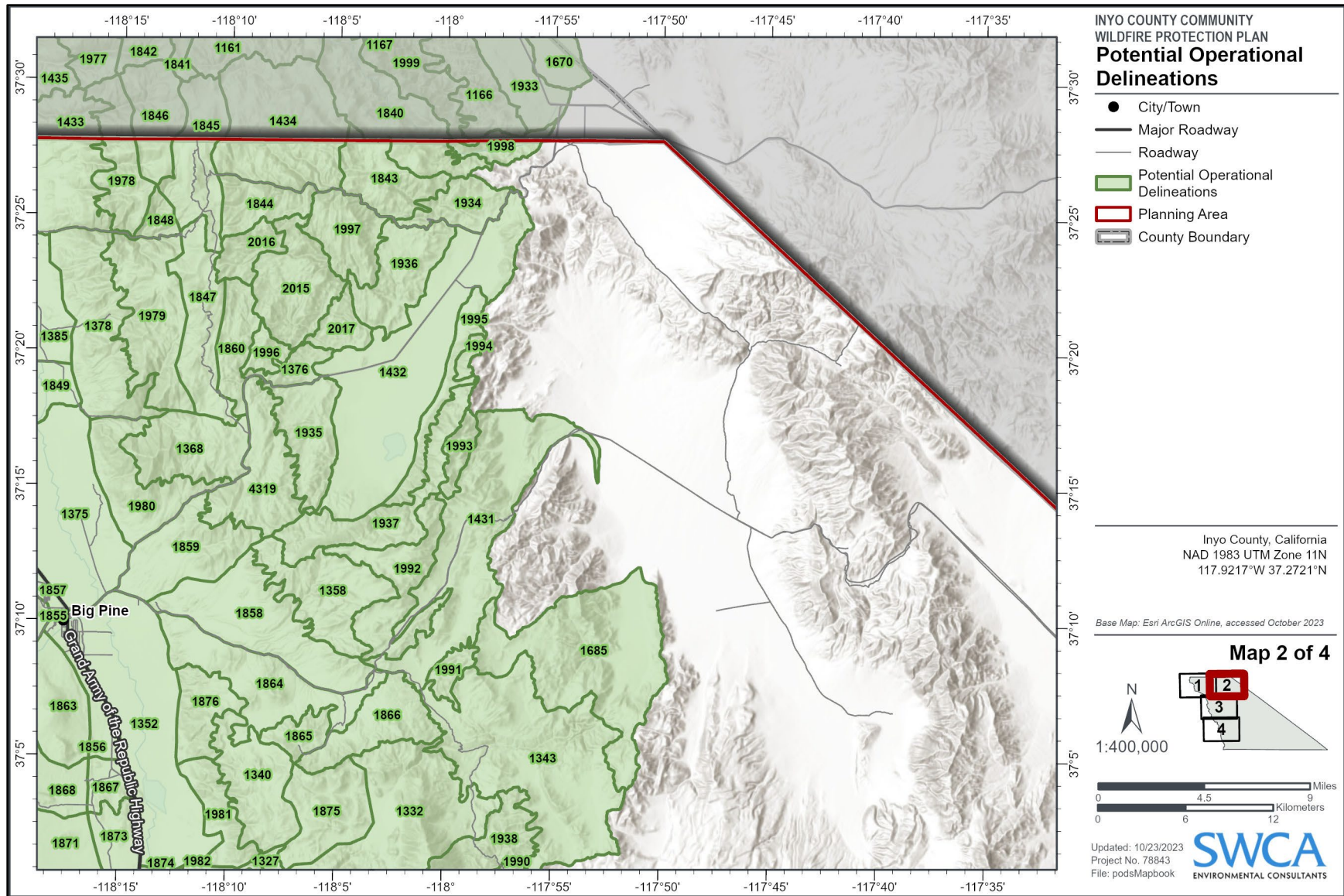
Map C.10. Fire responsibility areas and fire stations.



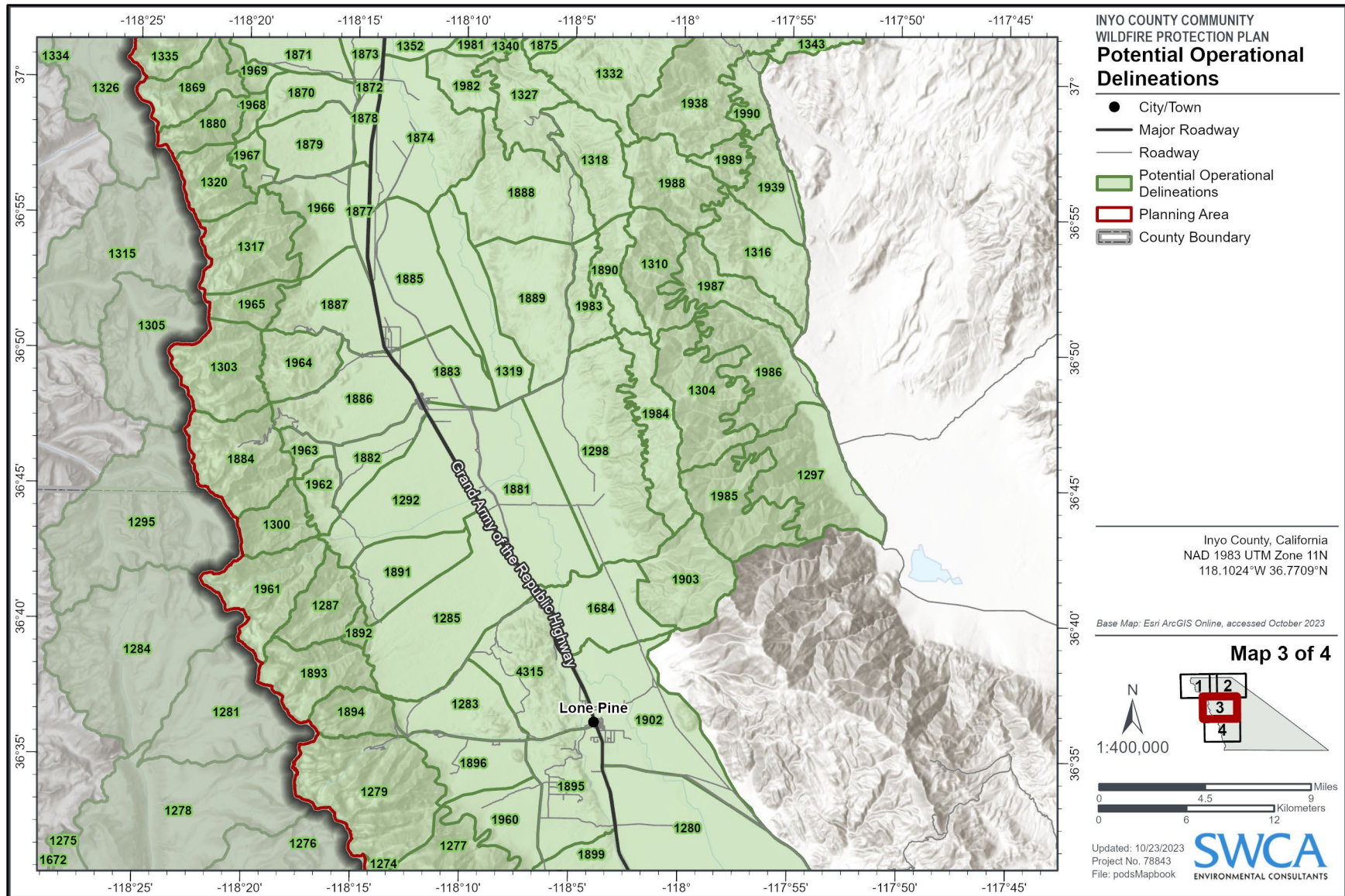
Map C.11. Watershed (HUC 8) within Inyo County.



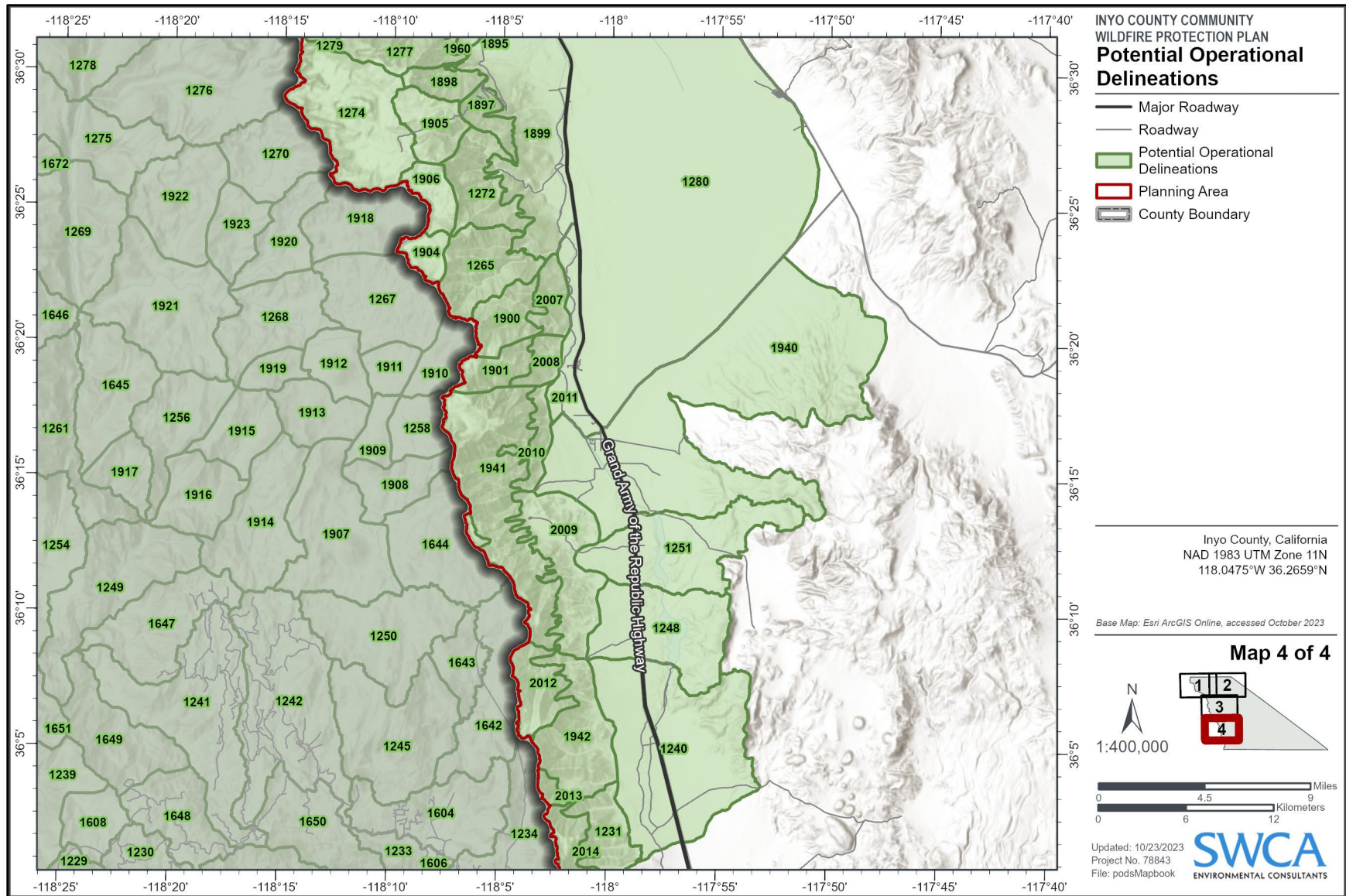
Map C.12. PODs within Inyo County: map 1 of 4



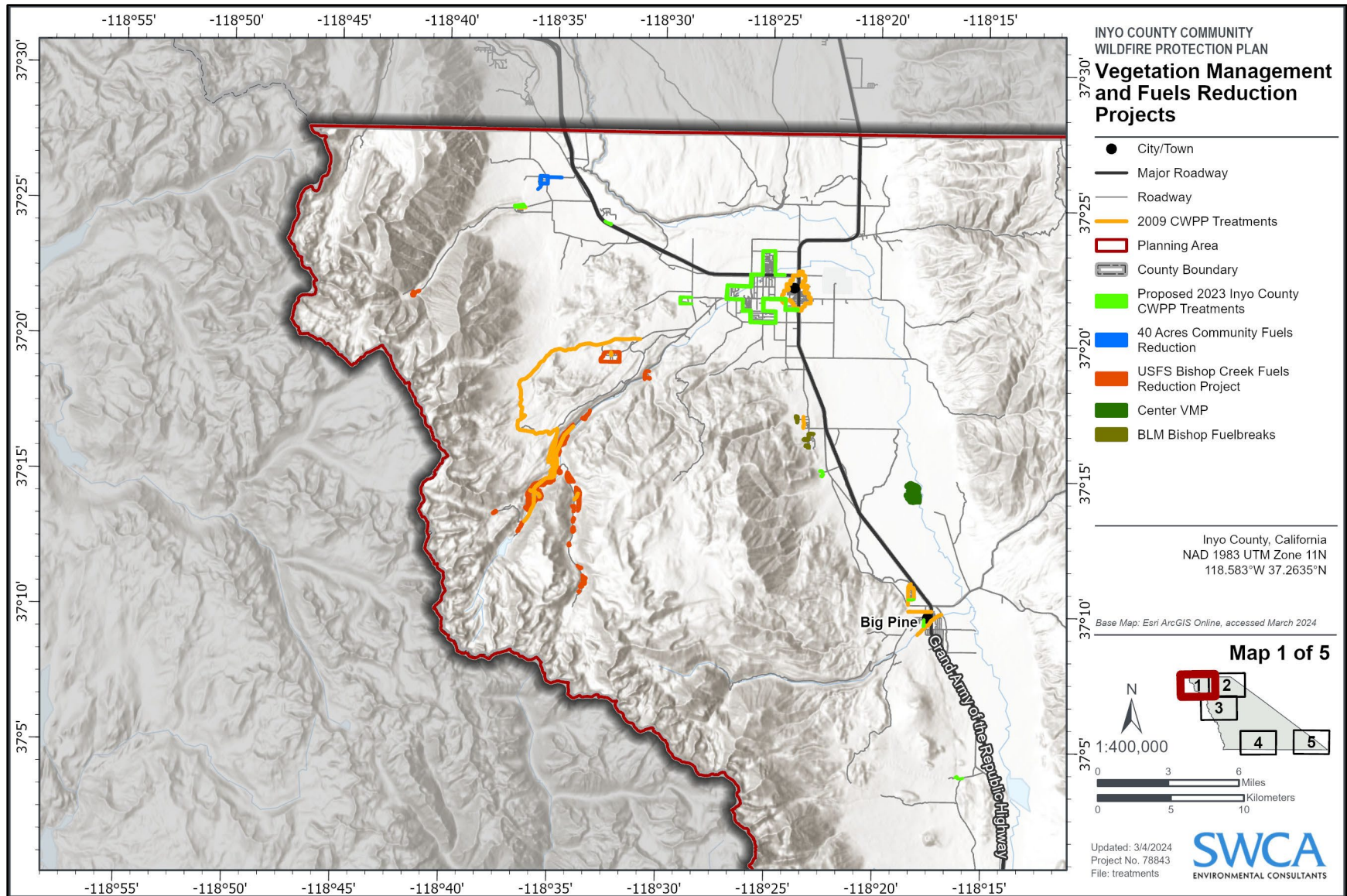
Map C.13. PODs within Inyo County: map 2 of 4



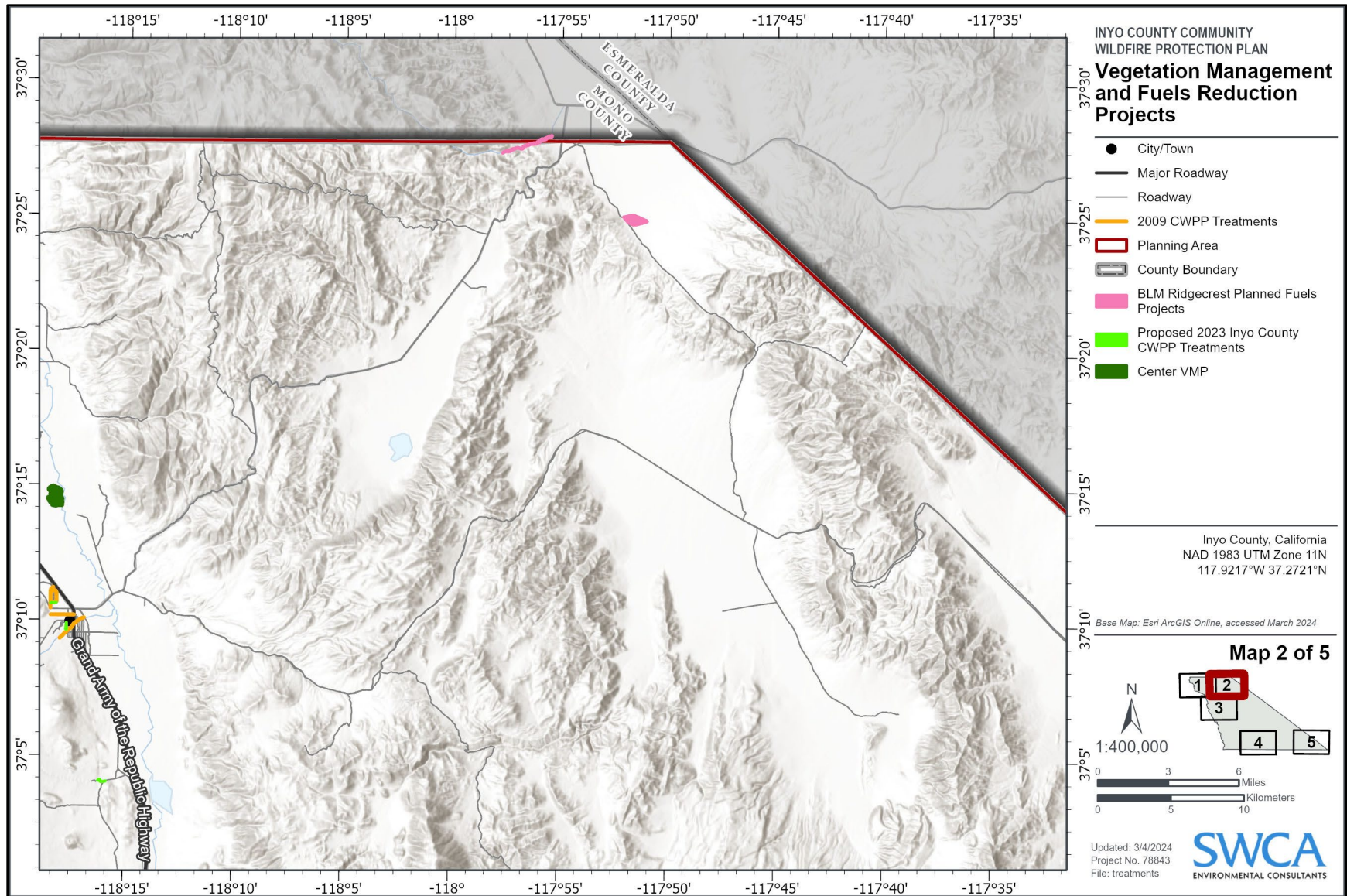
Map C.14. PODs within Inyo County: map 3 of 4



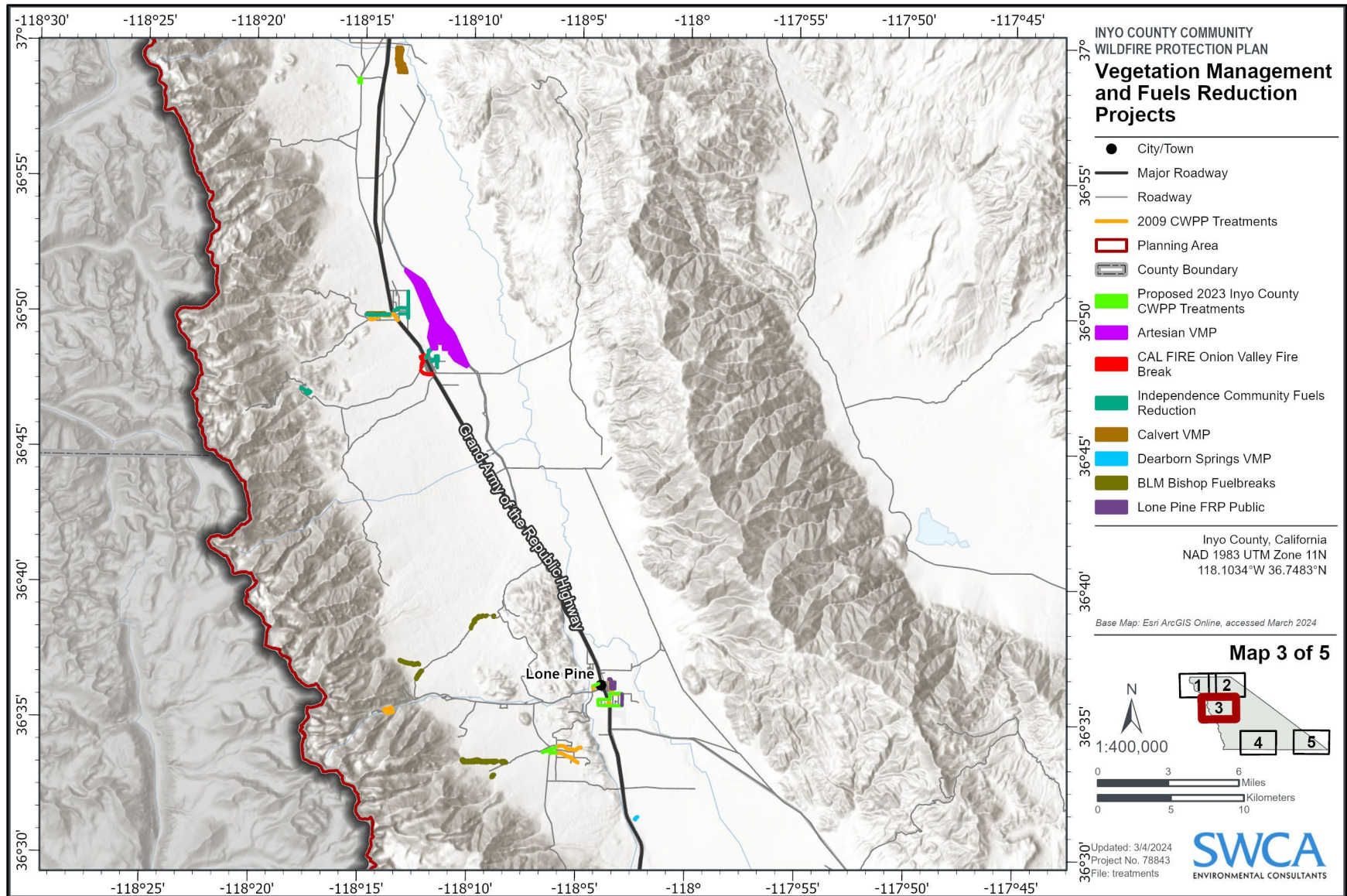
Map C.15. PODs within Inyo County: map 4 of 4.



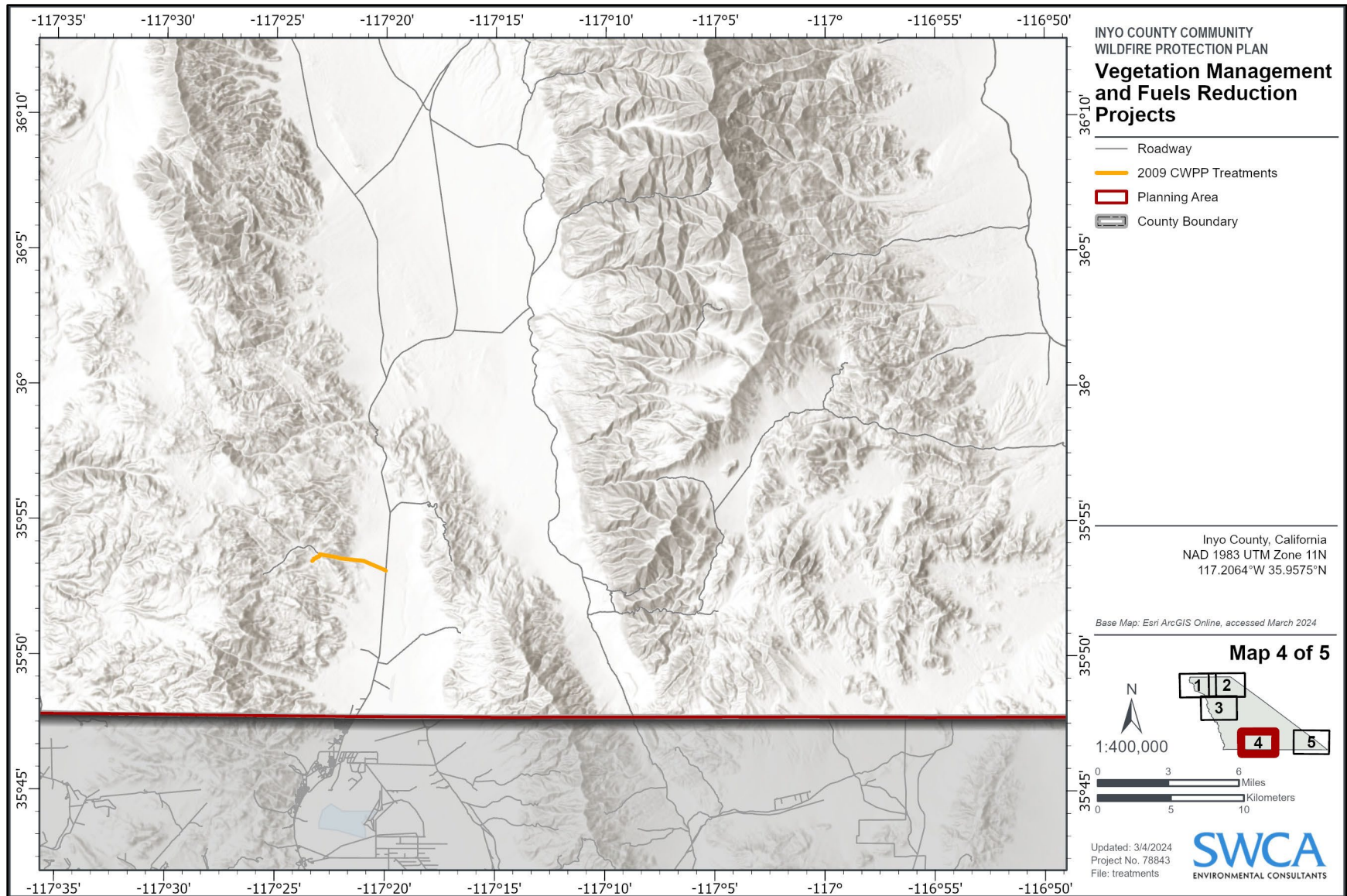
Map C.16. Vegetation management and fuels reduction projects (Bishop).



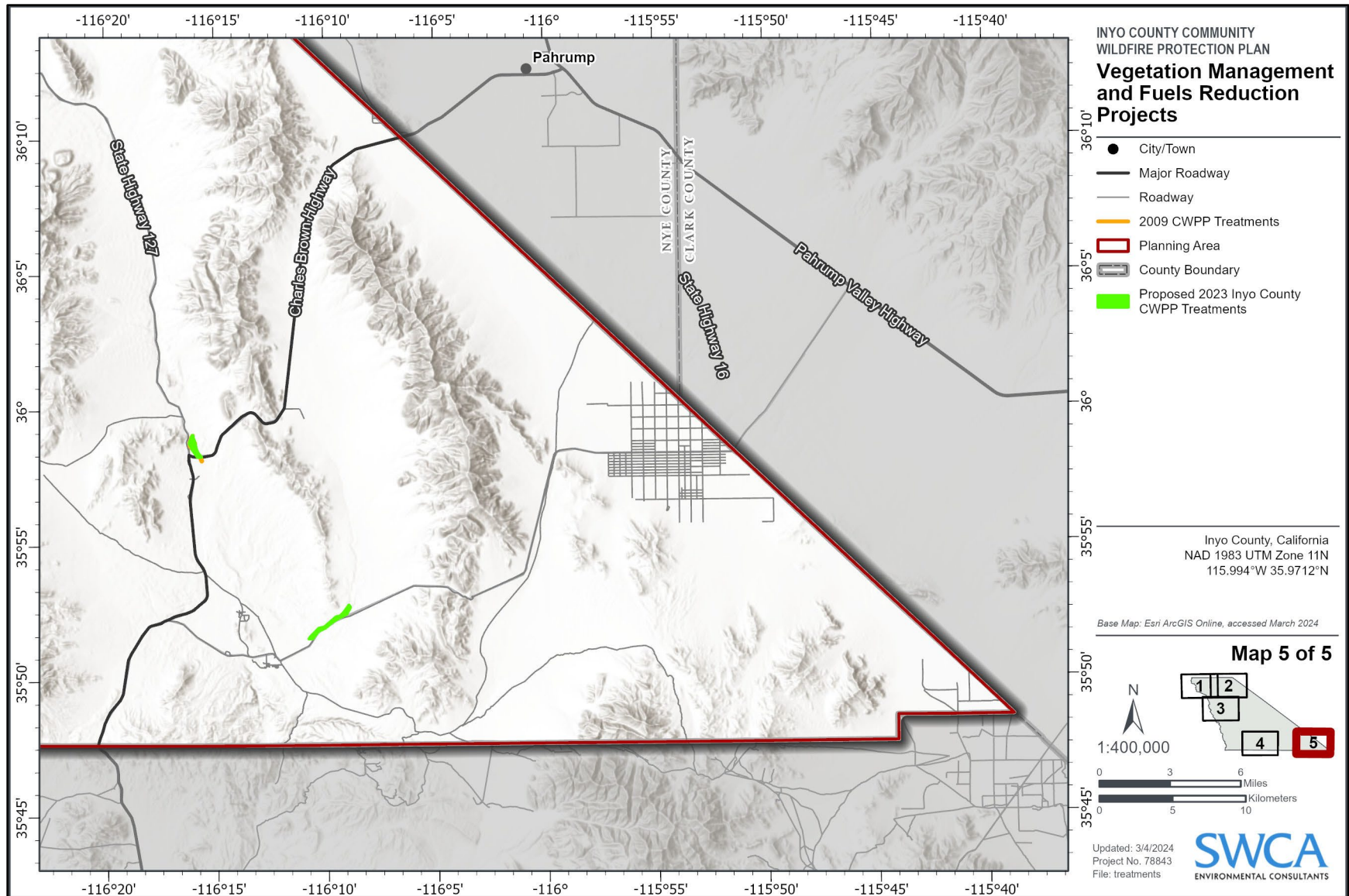
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SWCA

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Community Risk-Hazard Assessment Summaries

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INYO COUNTY WILDLAND-URBAN INTERFACE COMMUNITIES COMMUNITY ASSESSMENT SUMMARIES

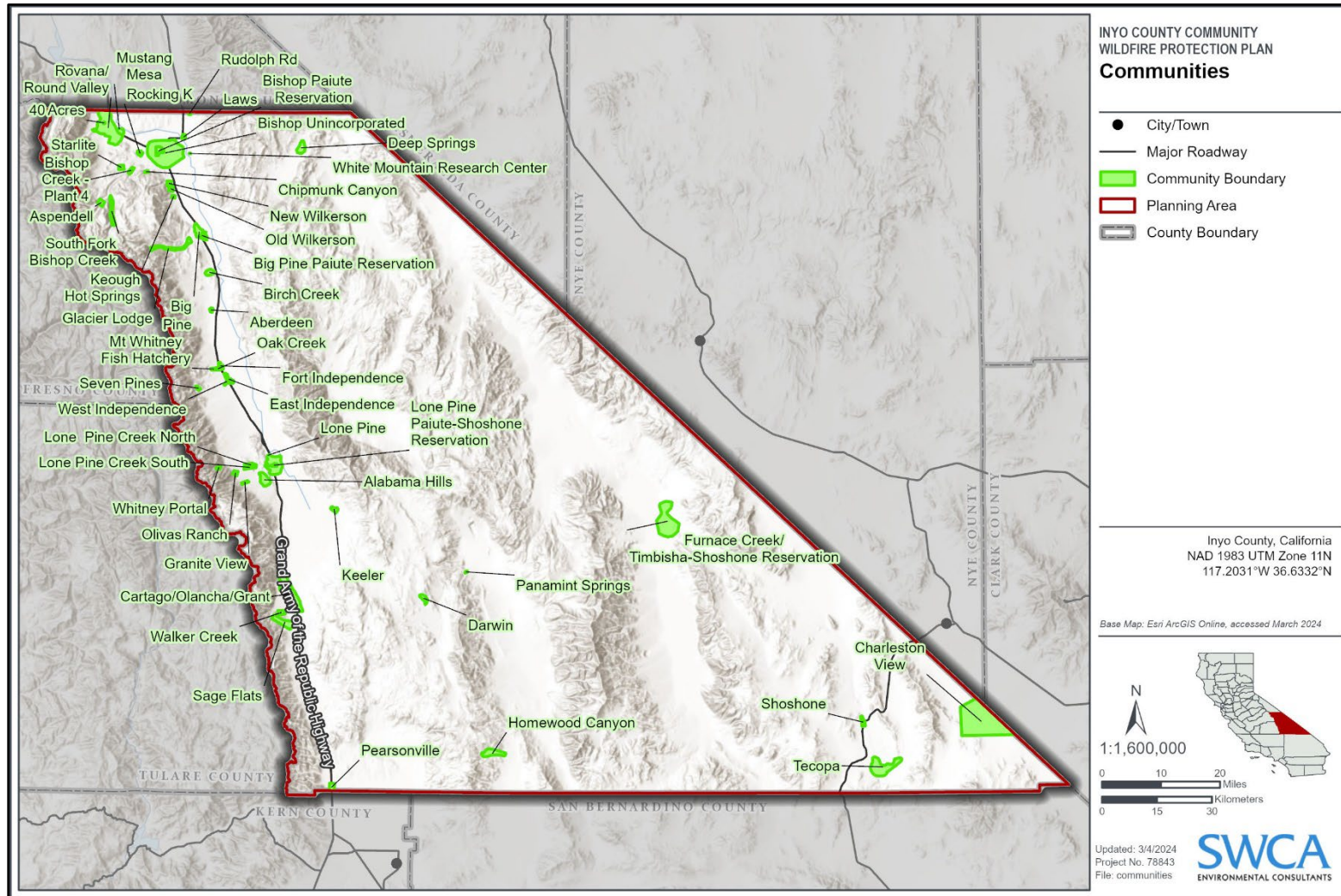


Figure D.1. Communities within Inyo County.

FIRE STATION STATISTICS

Table D.1. Fire Station Equipment and Staffing Statistics

Fire Department Name	Big Pine FPD	Bishop FPD	CAL FIRE Bishop FFS	CAL FIRE BDU Independence Station	Independence Volunteer Fire Department	Lone Pine FPD	Olancho Cartago FPD	Southern Inyo FPD 1	Southern Inyo FPD 2
Station Number	1	1	N/A	59	N/A	1	2600	N/A	N/A
Fulltime firefighters	--	--	2	18	--	--	--	--	--
On-call firefighters	--	--	6	--	--	--	--	--	--
Volunteer firefighters	34	38	--	--	25	25	12	10	10
Water Tenders									
Type 1	2	4	--	--	1	2	1	--	--
Type 2	--	--	--	--	--	--	--	--	--
Type 3	--	--	--	--	--	--	--	1	1
Wildland Engines									
Type 1	--	--	--	--	--	--	--	--	--
Type 2	--	2	--	--	--	--	--	--	--
Type 3	1	--	1	2	2	1	1	--	--
Type 4	--	--	--	--	--	--	--	--	--
Type 5	--	--	--	--	--	--	--	--	--
Type 6	1	1	--	--	--	2	1	--	--
Type 7	--	--	--	--	--	--	--	1	1
Structure Engines									
Type 1	1	5	--	--	--	3	1	3	3
Type 2	1	--	--	--	2	1	--	--	--
Port-a-tanks	2	2	--	1	1	3	1	1	1

Fire Department Name	Big Pine FPD	Bishop FPD	CAL FIRE Bishop FFS	CAL FIRE BDU Independence Station	Independence Volunteer Fire Department	Lone Pine FPD	Olancha Cartago FPD	Southern Inyo FPD 1	Southern Inyo FPD 2
Portable pumps	6	1	--	4	2	1	1	--	--
Agreements with Other Fire Response Agencies	CAL FIRE	Fire departments within Inyo and Mono Counties; Bishop FPD works closely with CAL FIRE and the USFS	Local response organizations and state and federal agencies	Local response organizations and state and federal agencies	CAL FIRE, USFS, local response organizations	Volunteer fire departments in the Valley, CAL FIRE, and USFS	Inyo County and Kern County, CAL FIRE, USFS, BLM	Pahrump Valley Fire and Rescue, Amargosa Valley, Nye County, and NPS	Pahrump Valley Fire and Rescue, Amargosa Valley, Nye County, and NPS

POPULATION ESTIMATES

Table D.2. Inyo County Population Estimates

Community	1980–2000 Population (Inyo County General Plan)	2010 Population (Census)	2021 Population (American Community Survey)
Aberdeen	65	--	--
Alabama Hills	190	--	--
Alta Vista - Mustang Mesa	200	251	383
Arcularius Ranch	10	--	--
Aspendell	240	--	--
Big Pine and Big Pine Reservation (500)	1,658	2,257	1,570
Birch Creek	25	--	--
Bishop Paiute Reservation	1,408	1,588	--
Cartago	90	92	64
Charleston View	36	--	--
Chicago Valley	15	--	--
Chipmunk Canyon	10	--	--
City of Bishop	3,460	3,879	3,800
Coso Junction	40	--	--
Darwin	89	43	74
Death Valley Junction	10	--	--
Death Valley National Park	679	--	--
Dixon Lane / Meadow Creek	2,561	2,645	2,835
Dunmovin	5	--	--
Fish Slough	10	--	--
Fish Springs	10	--	--
Foothill / Boulder Creek	100	--	--
Furnace Creek and Timbisha Reservation	370	48	103
Granite View	15	--	--
Haiwee	20	--	--
Homewood Canyon	133	44	238
Independence and Ft. Independence	655	762	785
Indian Ranch	5	--	--
Keeler	127	66	31
Keough Hot Springs	30	--	--
Laws	50	--	--

Community	1980–2000 Population (Inyo County General Plan)	2010 Population (Census)	2021 Population (American Community Survey)
Little Lake	10	--	--
Lone Pine and Lone Pine Paiute-Shoshone Reservation	2,062	2,247	1,580
Lone Pine Creek	10	--	--
Olancho	530	192	158
Panamint Springs	10	--	--
Pearsonville	57	17	0
Rocking K Ranch	50	--	--
Rovana	220	--	--
Sage Flat	10	--	--
Sandy Valley	10	--	--
Shoshone	100	31	27
Sierra Sky Ranch / Rudolph Ranch	25	--	--
Sky Rock	20	--	--
Starlite Estates	156	--	--
Steward Ranch	10	--	--
Stewart Valley	20	--	--
Stovepipe Wells	90	--	--
Sunland	20	--	--
Tecopa, Tecopa Heights, Tecopa Hot Springs	226	150	209
Unincorporated Bishop	2,908	2,607 (west only)	2,481
Valley Wells	133	--	87 (Trona)
Wilkerson	614	563	598
40 Acres	140	--	--

BISHOP CREEK/PINE CREEK

ASPENDELL

Community Background

Community Name: Aspendell **Total Score:** 109 (High) **Land Area (acres):** 561
Fire Protection District Status: None

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Reflective street signs
- Predominantly non-combustible roofs (e.g., metal)
- Hydrants present
- Fire station within the community (assuming Aspendell fire station is functional)

Negative Attributes (High Scores)

- One road in and out
- Most structures with limited defensible space
- Tree branches resting on rooftops
- Combustible house siding, deck, and fencing
- Medium to high angle slopes around structures
- Electric and gas utilities aboveground
- Exposed propane tanks

Suggested Recommendations

- Continue to host chipper days (green waste)
- Conduct outreach to inform residents about defensible space and home hardening
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Develop a community evacuation plan
- Target visitor education efforts (e.g., Camp Like a Pro program materials) at the Cardinal Lodge
- Maintain clearance along local access roads
- Continue the planned Bishop Creek fuels treatment project (USFS)
- Thin and reduce fuels on slopes immediately adjacent to properties
- Seek to establish fire protection agreements and strategies with the closest FPD or establish a nexus with the responding agency
- Assess community capacity for defensible space implementation to determine needs
- Collaborate with local safety officials, fire departments, wildland fire agencies, and private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use
- Encourage homeowner implementation of defensible space standards (see Appendix J)

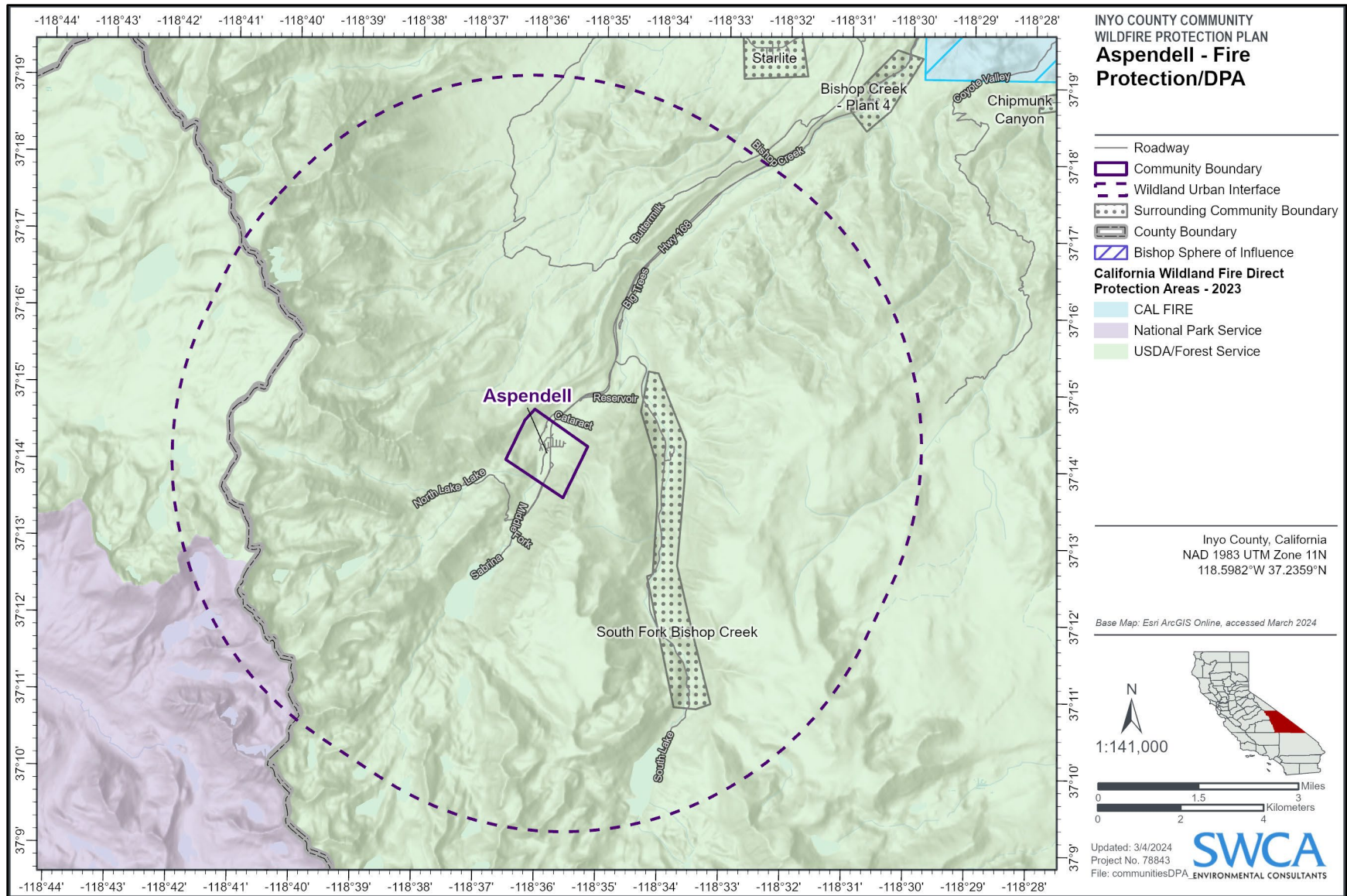


Figure D.2. Direct protection area and fire protection district boundary around Aspendell.

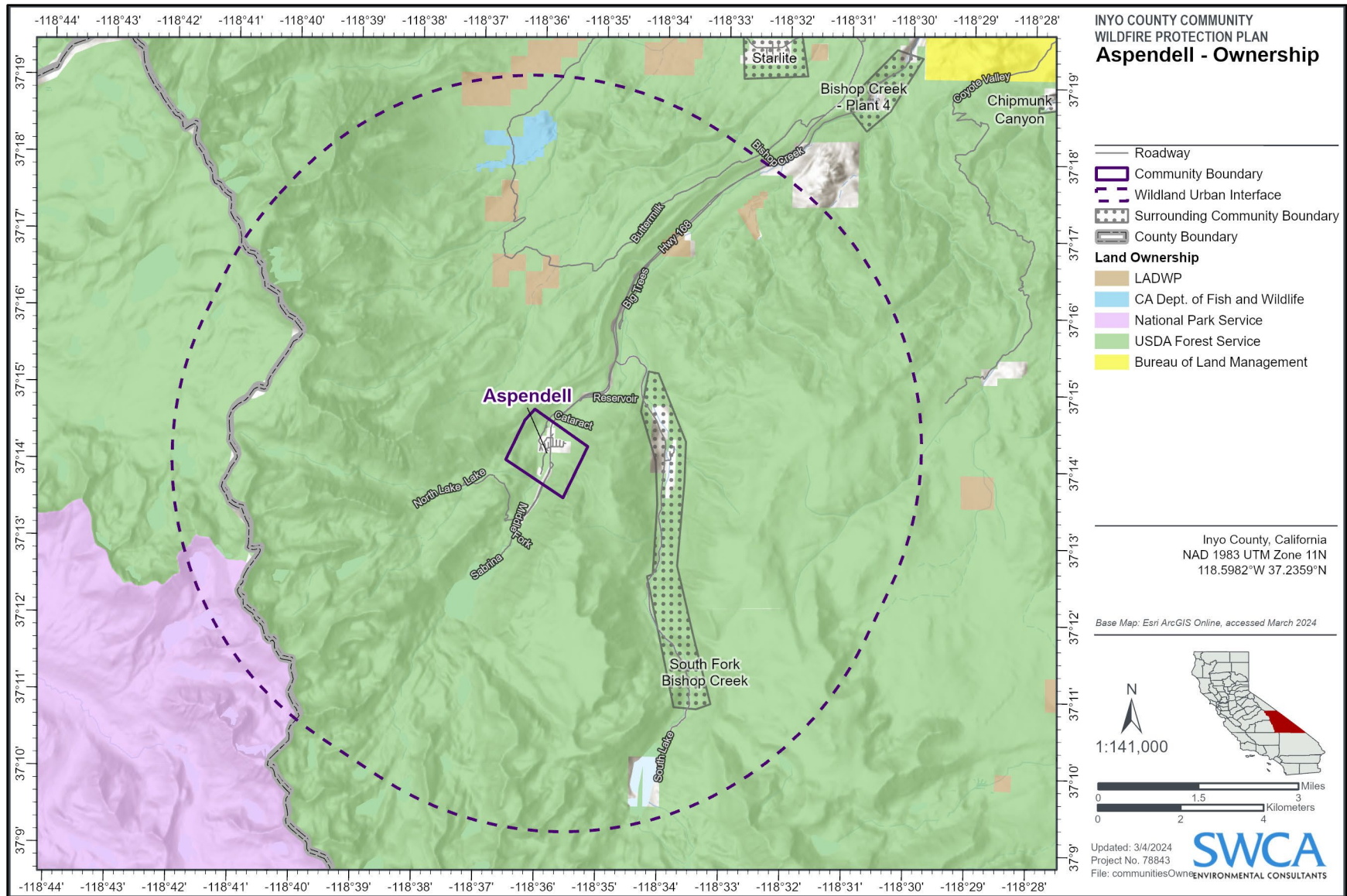


Figure D.3. Land ownership around Aspendell.

CHIPMUNK CANYON

Community Background

Community Name: Chipmunk Canyon **Total Score:** 86 (High) **Land Area (acres):** 101
Fire Protection District Status: None

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Defensible space is acceptable
- Good separation of adjacent structures
- Fuel loading is light around the perimeter

Negative Attributes (High Scores)

- Community is situated on hazardous/complex terrain
- Structures have limited setback
- Limited turnarounds
- One narrow access road, unsurfaced, variable slope
- Street signs not present
- Combustible house siding
- Lack of water resources
- Fire station more than 5 miles from community
- Gas and electric utilities aboveground

Suggested Recommendations

- Engage community to explore options for water resource development
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Conduct outreach about evacuation planning procedures, defensible space, and home hardening
- Identify alternative evacuation routes and/or temporary refuge areas
- Collaborate with residents to investigate opportunities for installing turnarounds or widening the road
- Seek to establish fire protection agreements and strategies with the closest FPD or establish a nexus with the responding agency
- Install reflective street signs
- Collaborate with local safety officials, fire departments, wildland fire agencies, and private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use

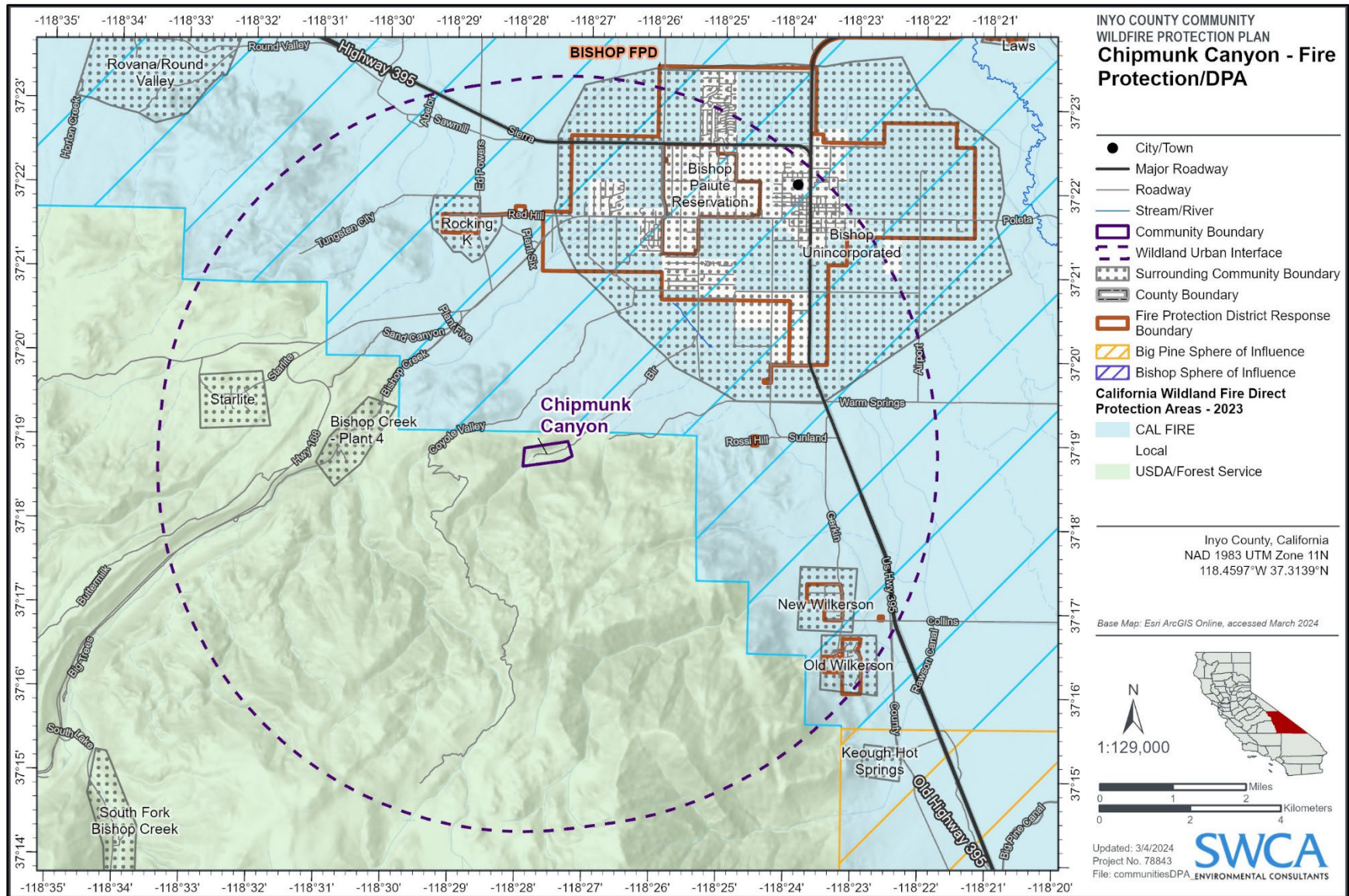


Figure D.4. Direct protection area and fire protection district boundary around Chipmunk Canyon.

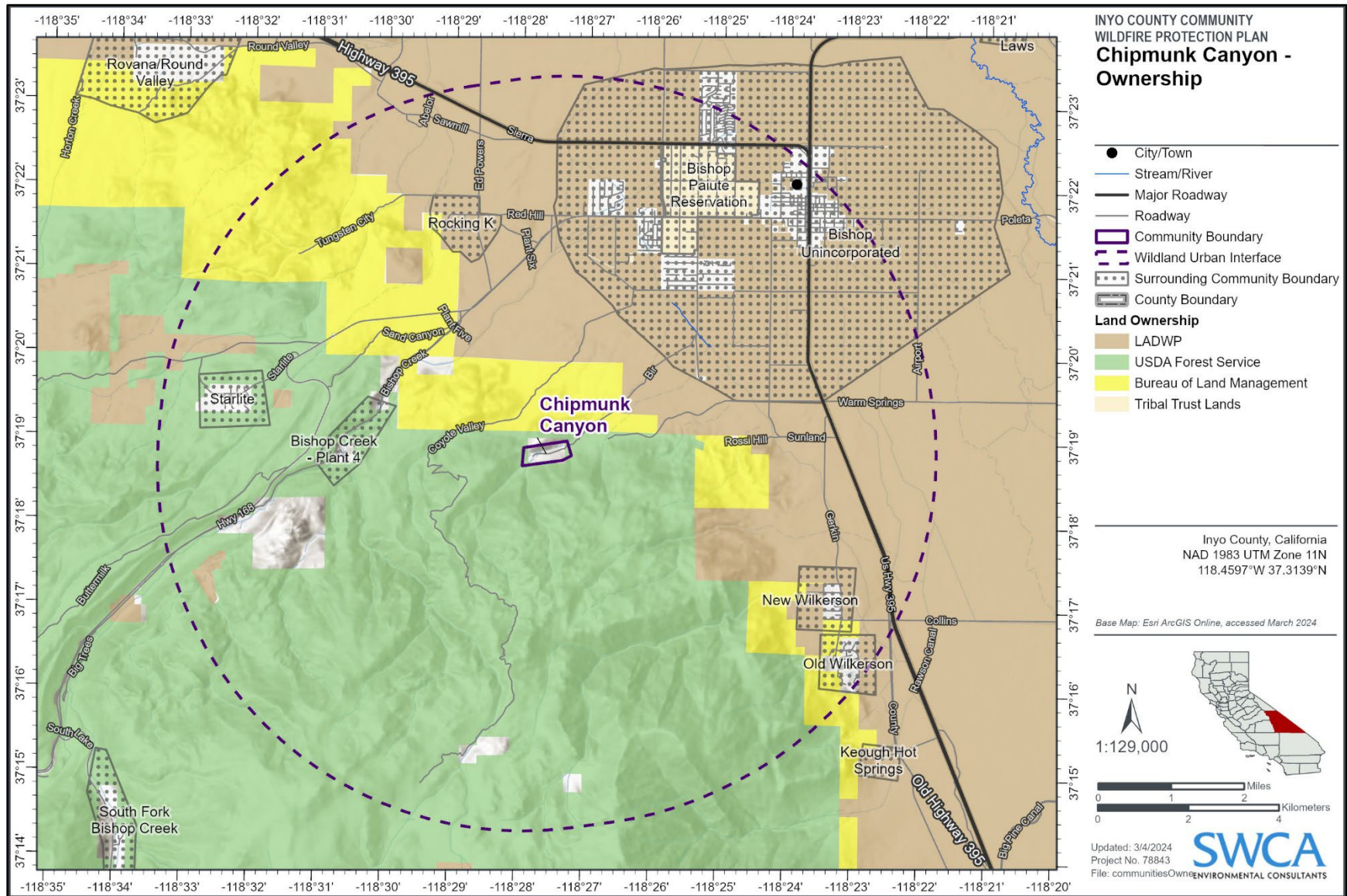


Figure D.5. Land ownership around Chipmunk Canyon.

MUSTANG MESA

Community Background

Community Name: Mustang Mesa **Total Score:** 75 (High) **Land Area (acres):** 1862
Fire Protection District Status: Within the SOI of Bishop Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Wide roads
- Community is ready and willing to engage and make the community fire resilient
- Reflective street signs
- Low angle slopes around structures
- Some fences and roofs are hardened
- Good distance of deck and fencing from slope
- Good separation of adjacent structures
- New construction with water tanks (not always full; fences limit accessibility)
- Maintained yards

Negative Attributes (High Scores)

- 1 road in and out; road crosses heavy riparian vegetation (Mill Creek Rd)
- Limited defensible space for most structures
- Combustible roof, deck, and siding materials
- Gas and electric utilities are aboveground
- Fire station far from most of community
- Dispersed camping in area
- Many unmarked dead ends within the community
- Confusing layout for fire responders not familiar with the community

Suggested Recommendations

- Install directional signage; mark dead ends
- Engage community to explore options for water resource development
- Conduct outreach to inform residents about evacuation, home hardening, and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Develop a community evacuation plan
- Conduct evacuation drills
- Identify alternative evacuation routes and/or temporary refuge areas
- Maintain roadside clearance along Mill Creek Rd
 - Assess feasibility of the reducing the riparian fuels at the intersection of Mill Creek Rd and U.S. 395
 - Riparian vegetation is on LADWP property; CDFW has jurisdiction in riparian areas
- Thin and reduce fuels on slopes immediately adjacent to properties
- Maintain water tanks full and ensure that fittings are accessible
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)

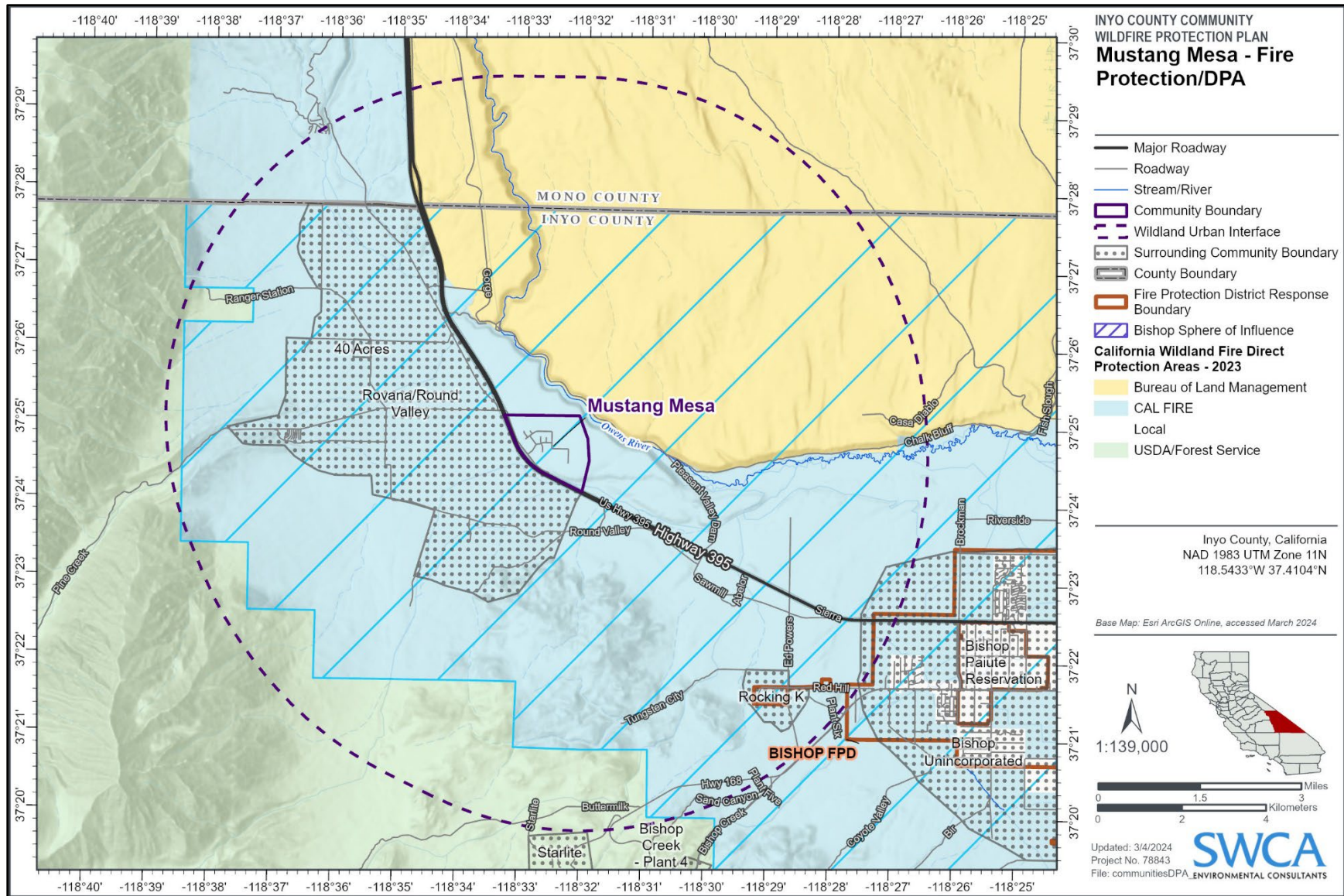


Figure D.6. Direct protection area and fire protection district boundary around Mustang Mesa.

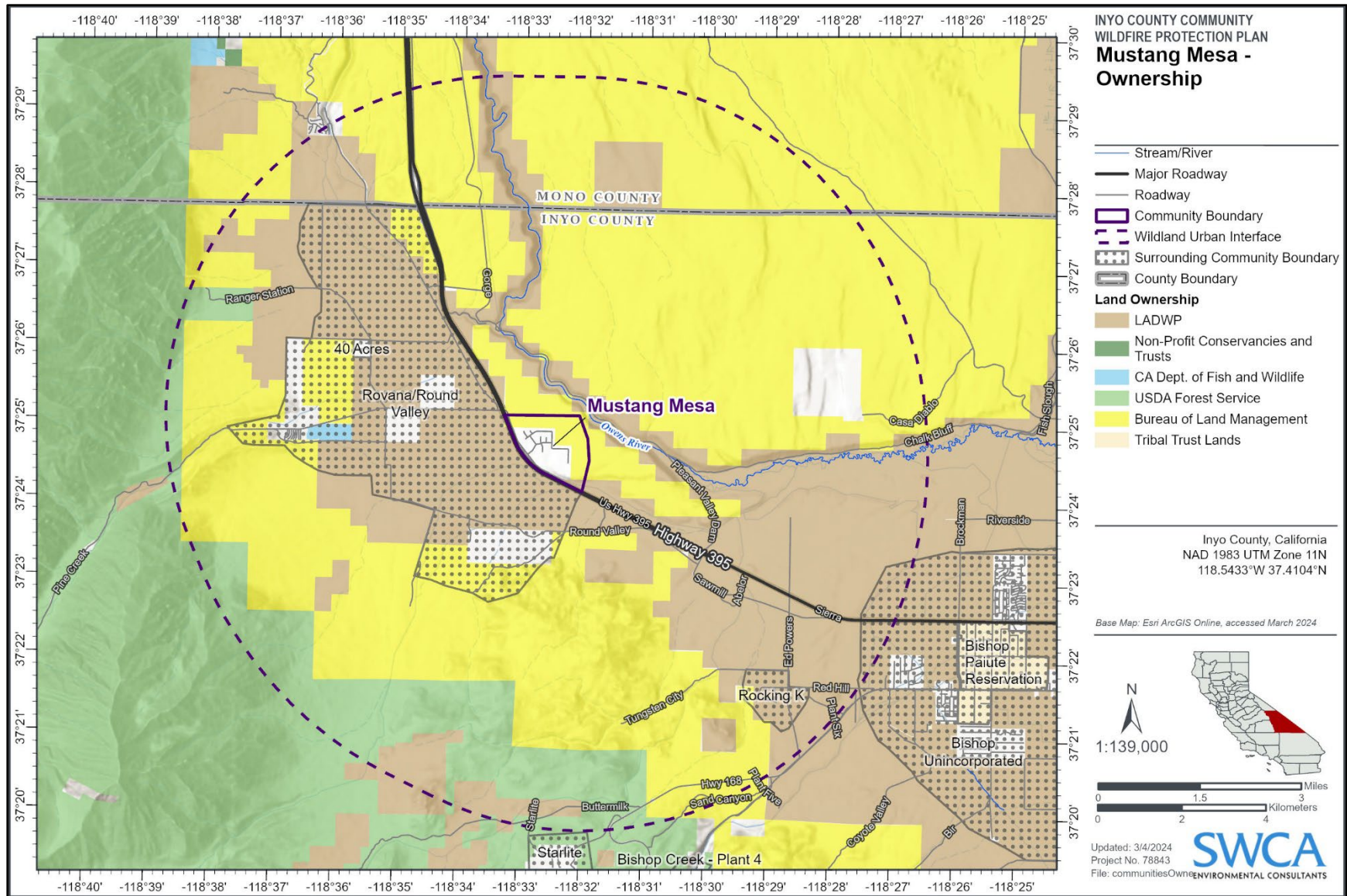


Figure D.7. Land ownership around Mustang Mesa.

PLANT 4 (BISHOP CREEK)

Community Background

Community Name: Plant 4 (Bishop Creek) **Total Score:** 133 (Extreme) **Land Area (acres):** 386

Fire Protection District Status: None

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Good separation of adjacent structures

Negative Attributes (High Scores)

- Only 1 road in and out
- Road is very steep and narrow
- No turnaround potential for fire trucks
- Street signs not present
- Poor defensible space for most structures
- Combustible deck, fencing and house siding materials
- Properties situated in a canyon, intersected by a heavy riparian fuel bed
- No developed water resource
- Gas and electric utilities are aboveground
- Dispersed camping occurs in the adjacent area

Suggested Recommendations

- Engage community to explore options for water resource development
- Continue the planned Bishop Creek fuels treatment project (USFS)
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Conduct outreach about evacuation planning procedures, defensible space, and home hardening
- Conduct outreach on safe dispersed camping procedures, fire rules, and leave no trace
- Identify alternative evacuation routes and/or temporary refuge areas
- Collaborate with residents to investigate opportunities for installing turnarounds or widening the road
- Maintain and expand clearance along main evacuation corridors (e.g., East Bishop Creek Rd)
- Install reflective street signs and directional signage
- Develop a community evacuation plan
- Seek to establish fire protection agreements and strategies with the closest FPD or establish a nexus with the responding agency
- Assess community capacity for defensible space implementation to determine needs
- Collaborate with local safety officials, fire departments, wildland fire agencies, and private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use
- Encourage homeowner implementation of defensible space standards (see Appendix J)

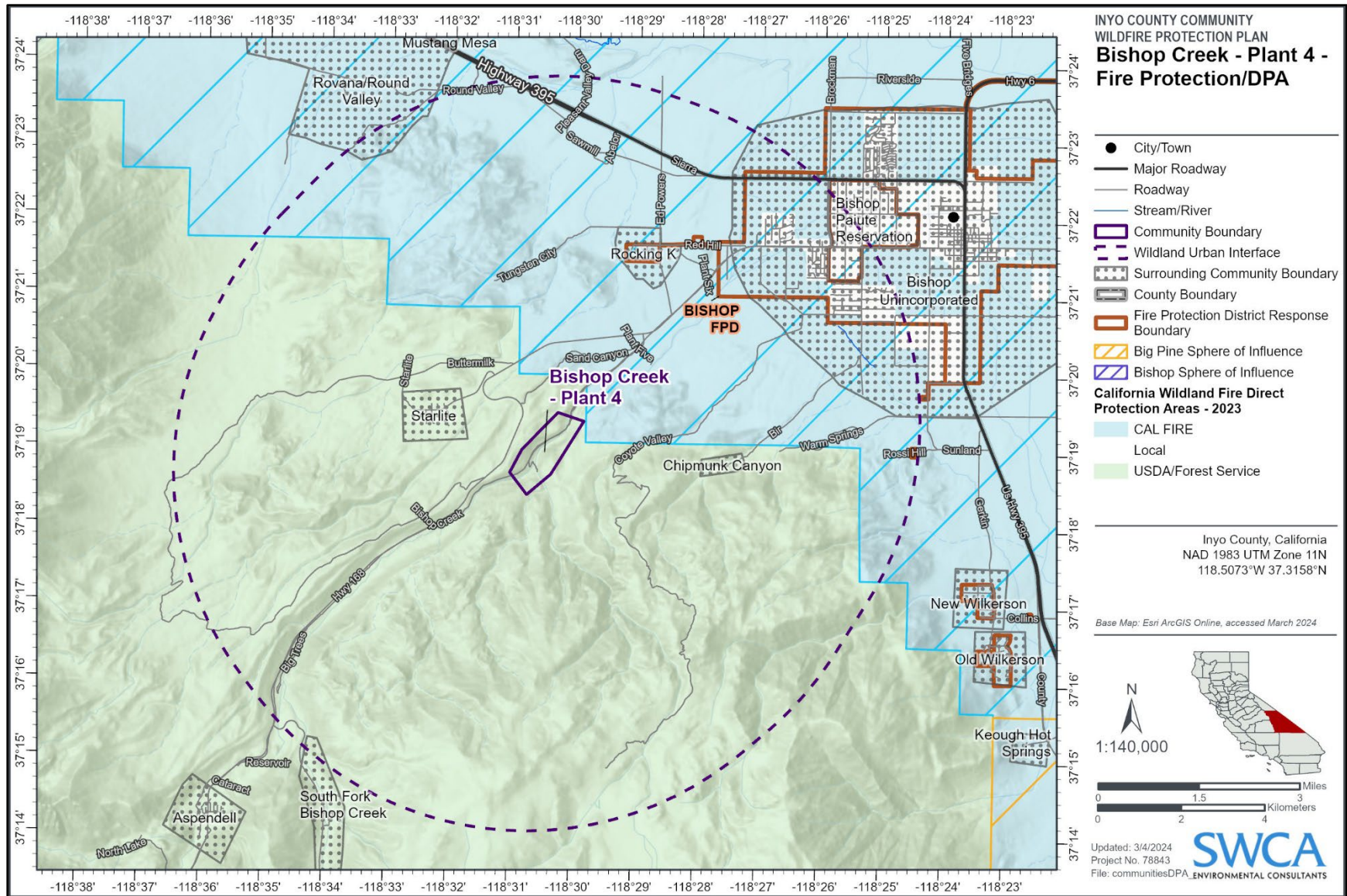


Figure D.8. Direct protection area and fire protection district boundary around Plant 4 (Bishop Creek).

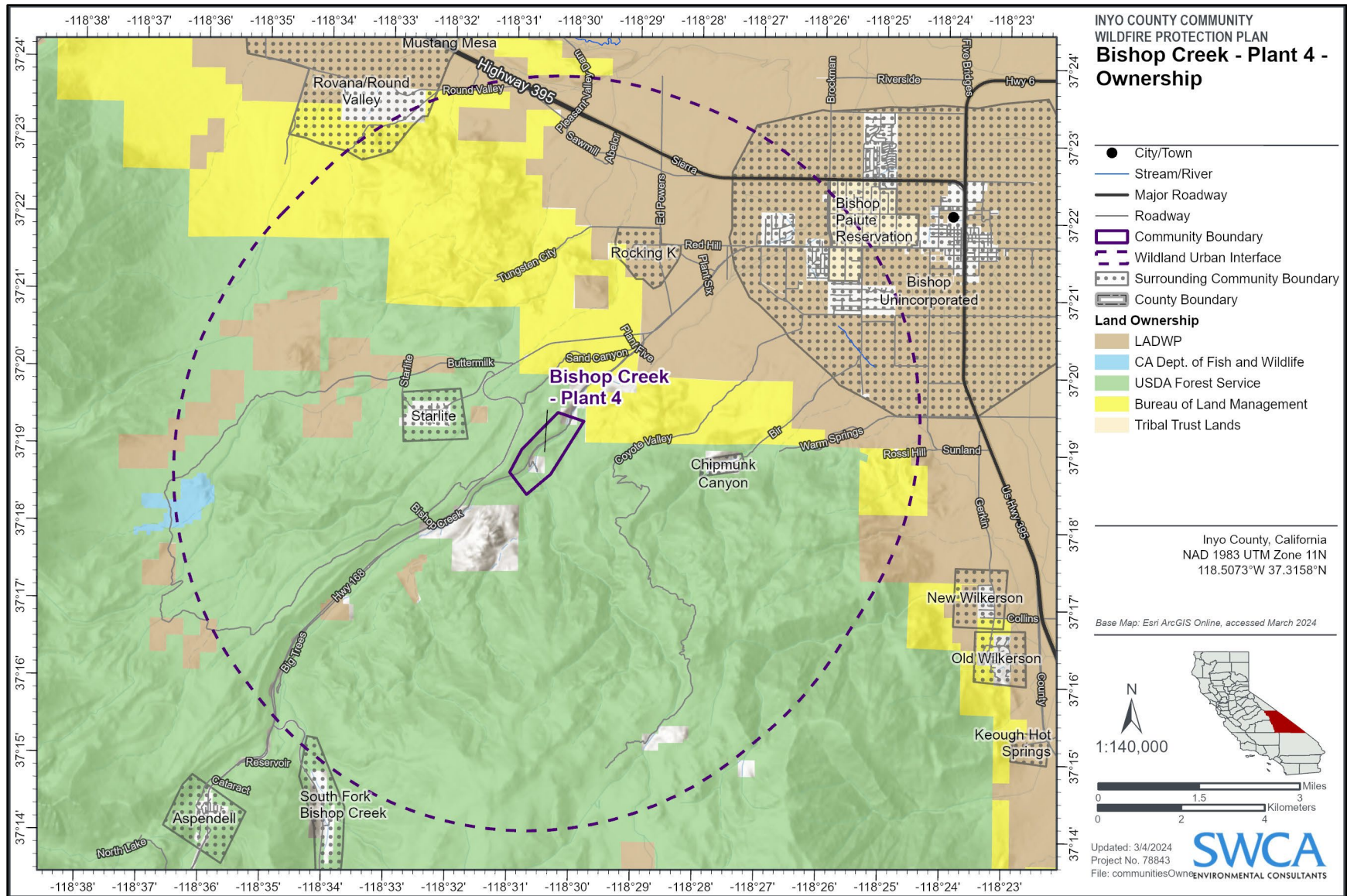


Figure D.9. Land ownership around Plant 4 (Bishop Creek).

ROVANA/ROUND VALLEY

Community Background

Community Name: Rovana/Round Valley **Total Score:** 79 (High) **Land Area (acres):** 8992

Fire Protection District Status: Within the jurisdiction of Bishop Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Reflective street signs
- Low angle slopes around structures
- Good water source (hydrants)
- Community is relatively close to a fire station

Negative Attributes (High Scores)

- Limited defensible space
- Limited separation of adjacent structures
- History of recent fire occurrence
- Complex topography/terrain
- Combustible deck/fencing, roof, and siding materials
- Gas and electric utilities are aboveground
- Dispersed camping occurs uphill of community in Pine Creek (wind is downcanyon)
- Community is exposed to uphill and downhill driven fires

Suggested Recommendations

- Maintain hydrants to ensure proper functioning
- Maintain Pine Creek Road fuel break
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Conduct outreach about evacuation planning procedures, defensible space, and home hardening
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)

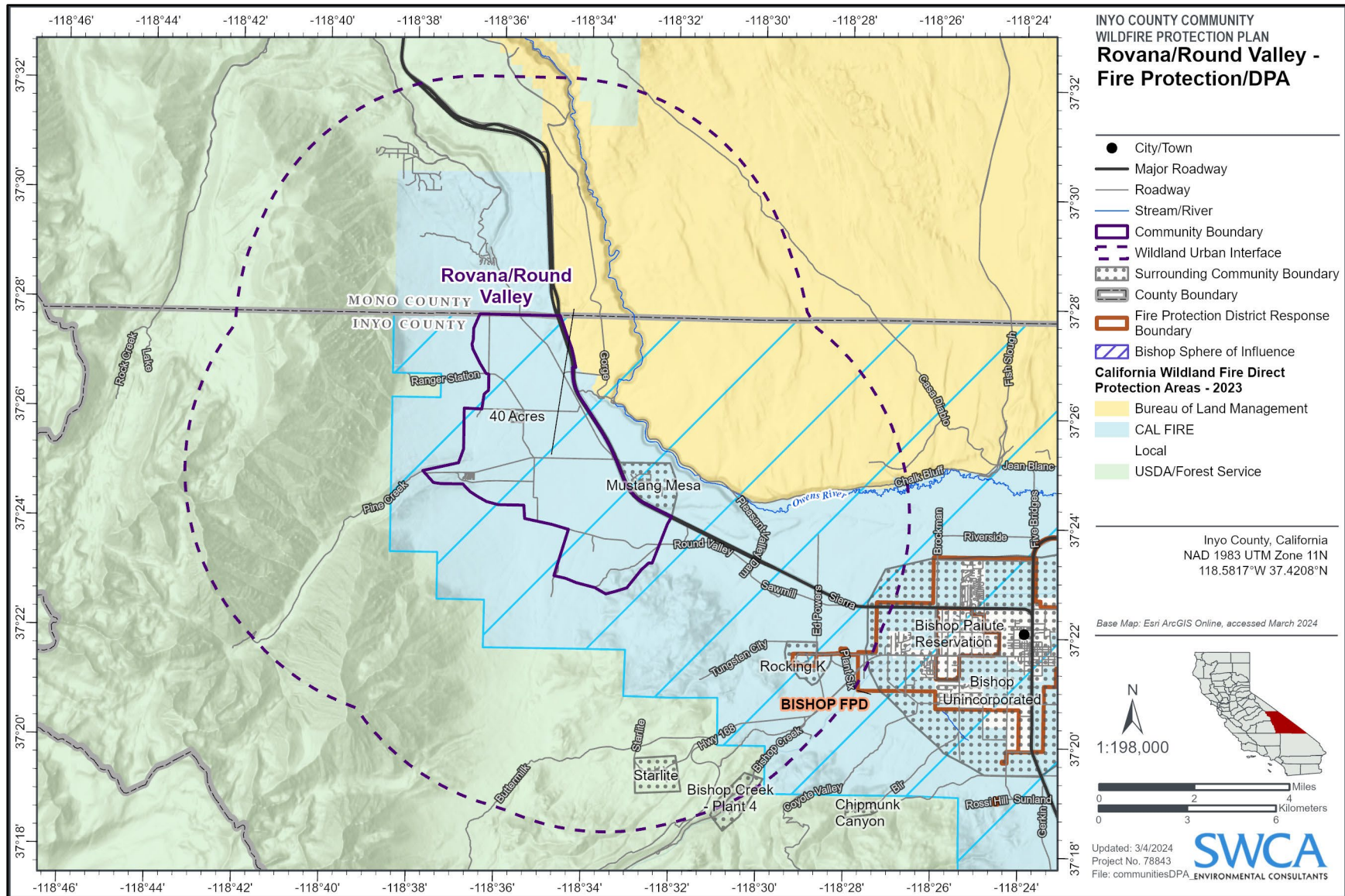


Figure D.10. Direct protection area and fire protection district boundary around Rovana/Round Valley.

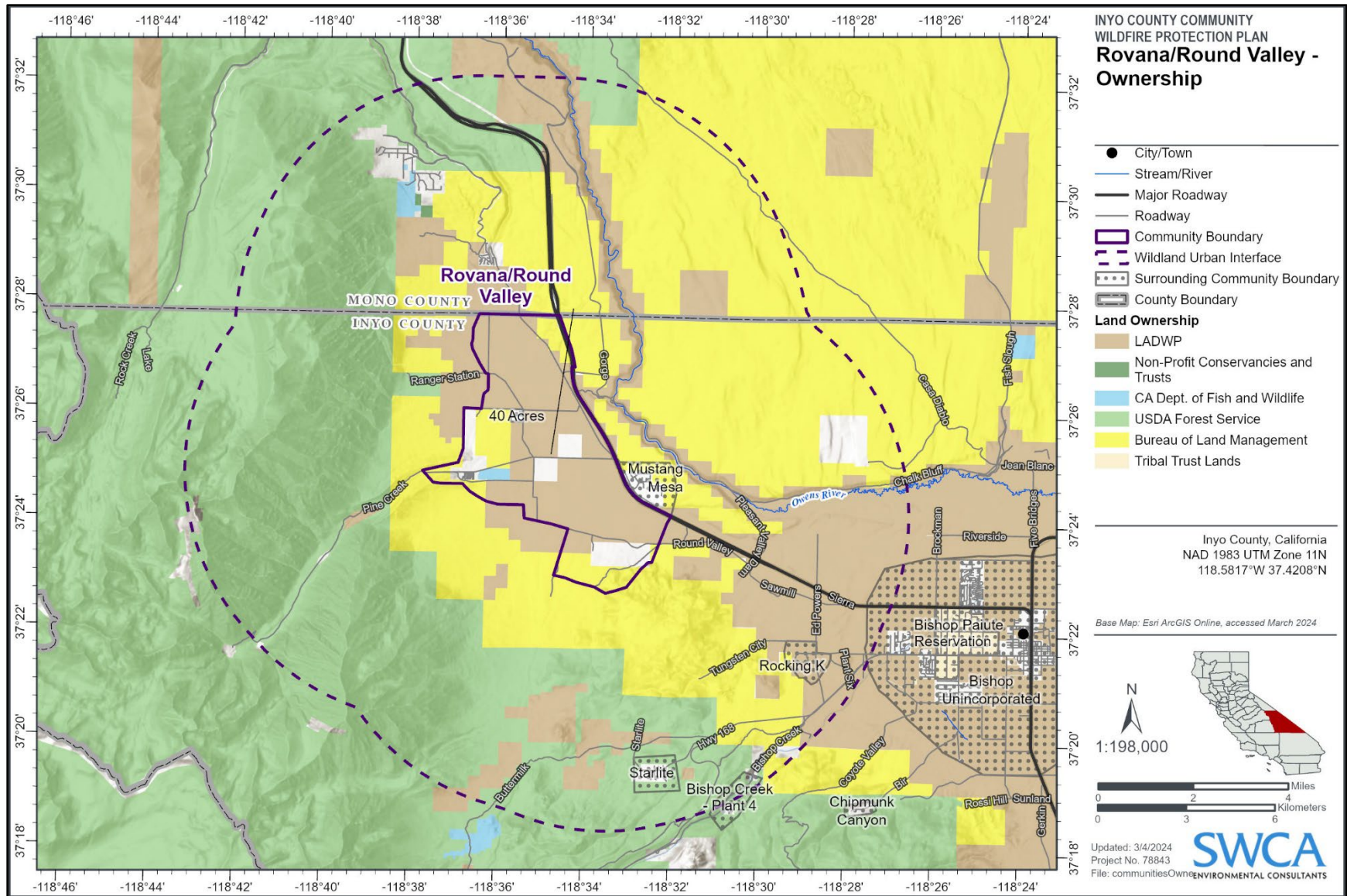


Figure D.11. Land ownership around Rovana/Round Valley.

SOUTH FORK BISHOP CREEK

Community Background

Community Name: South Fork Bishop Creek **Total Score:** 96 (High)

Land Area (acres): 1440

Fire Protection District Status: None

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Reflective street signs
- Hydrants present
- Some structures with hardened roofs

Negative Attributes (High Scores)

- Steep topography
- Long, unpaved driveways with heavy fuels
- Deck and fencing close proximity to slopes
- Combustible roof, deck, fencing, and house siding
- One road in and out
- Gas and electric utilities are aboveground
- Fire station far from community
- Community is situated in a canyon, subject to diurnal winds

Suggested Recommendations

- Conduct outreach to inform residents about defensible space, evacuation planning, and home hardening
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Develop a community evacuation plan
- Maintain clearance along local access roads
- Continue the planned Bishop Creek fuels treatment project (USFS); include USFS lessees or permit holders who operate businesses in the drainage
- Seek to establish fire protection agreements and strategies with the closest FPD or establish a nexus with the responding agency
- Collaborate with private property owners to reduce fuel loading along driveways
- Maintain and expand clearance along main evacuation corridors (e.g., South Lake Rd)
- Assess community capacity for defensible space implementation to determine needs
- Collaborate with local safety officials, fire departments, wildland fire agencies, and private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use
- Encourage homeowner implementation of defensible space standards (see Appendix J)

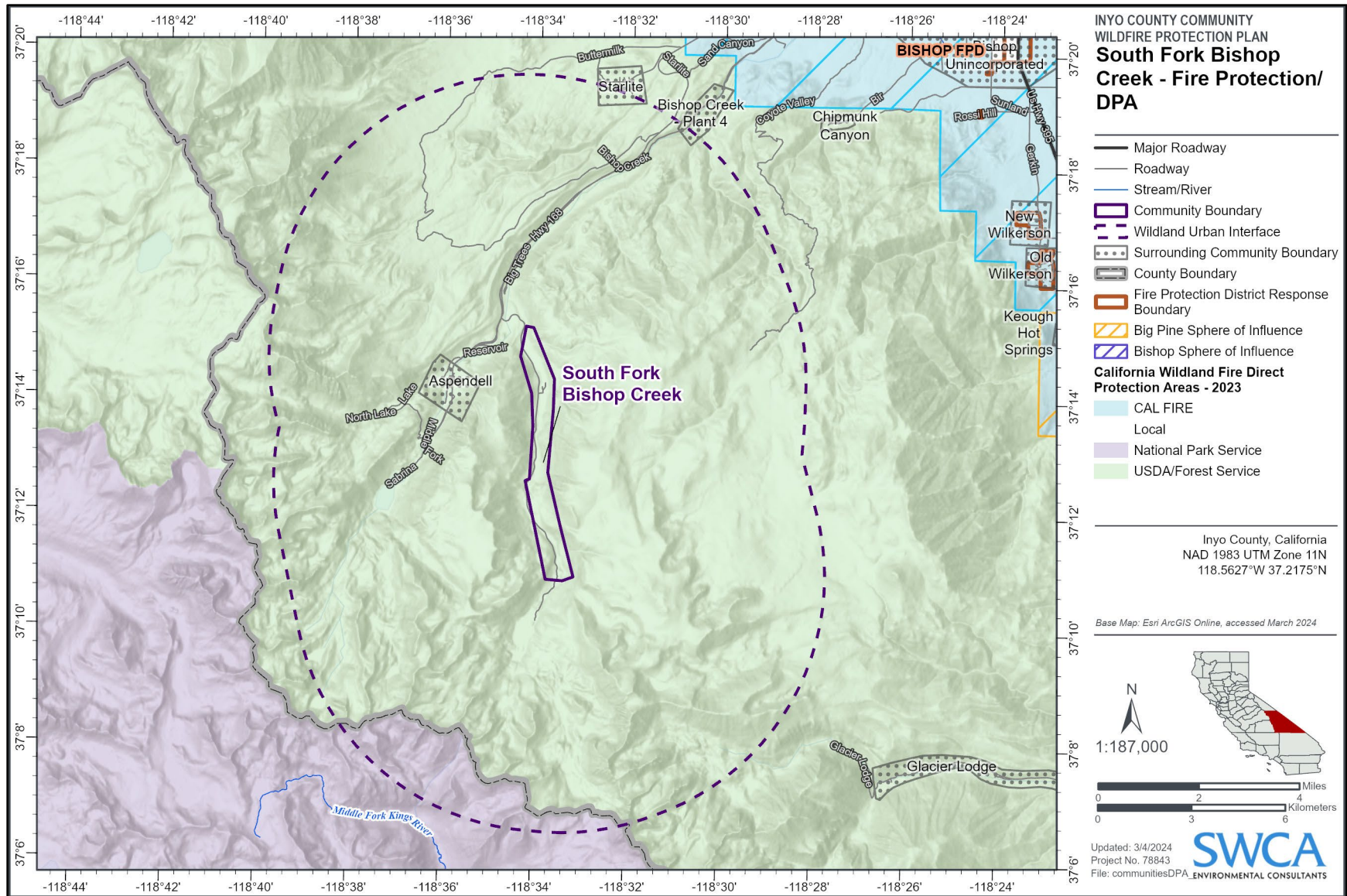


Figure D.12. Direct protection area and fire protection district boundary around South Fork Bishop Creek.

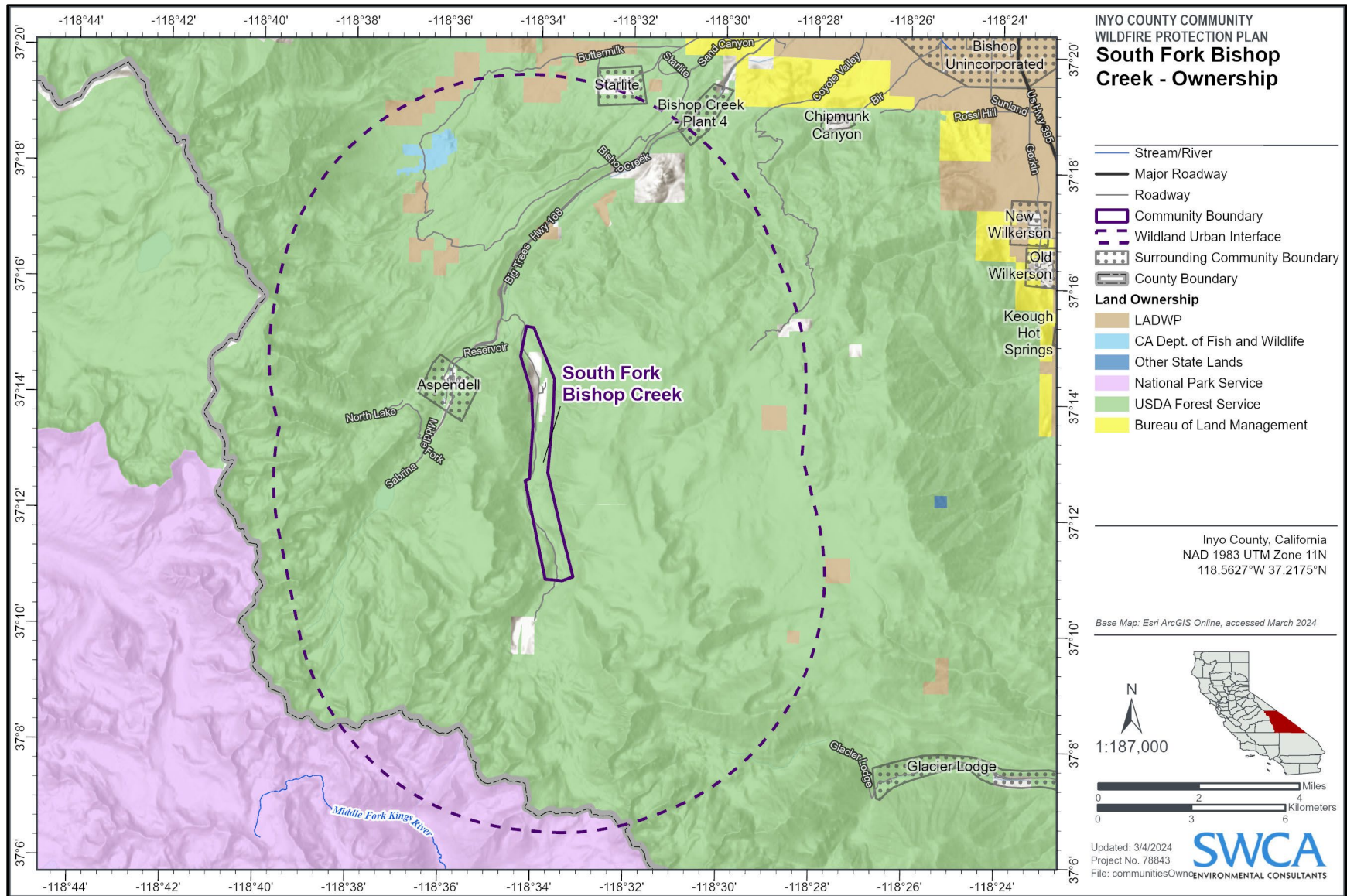


Figure D.13. Land ownership around South Fork Bishop Creek.

STARLITE

Community Background

Community Name: Starlite

Total Score: 74 (High)

Land Area (acres): 432

Fire Protection District Status: None

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Relatively flat, surfaced roads
- Low angle slopes around structures
- Hydrants and water tanks present
- Reflective address markers
- Defensible space acceptable (some branches touching roofs)
- Starlite community water system

Negative Attributes (High Scores)

- Combustible deck/fencing, roof and house siding
- One road in and out for whole community
- Gas and electric utilities are aboveground
- Fire station far from community
- Dispersed camping occurs in Buttermilk recreational area; community is exposed to downslope fires

Suggested Recommendations

- USFS to maintain perimeter fuel breaks
- Continue the planned Bishop Creek fuels treatment project (USFS)
- Conduct outreach to inform residents about home hardening and defensible space
- Conduct outreach to dispersed camping community regarding safe fire practices and leave no trace
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Seek to establish fire protection agreements and strategies with the closest FPD or establish a nexus with the responding agency
- Maintain water tanks full and ensure that fittings are accessible
- Assess community capacity for defensible space implementation to determine needs

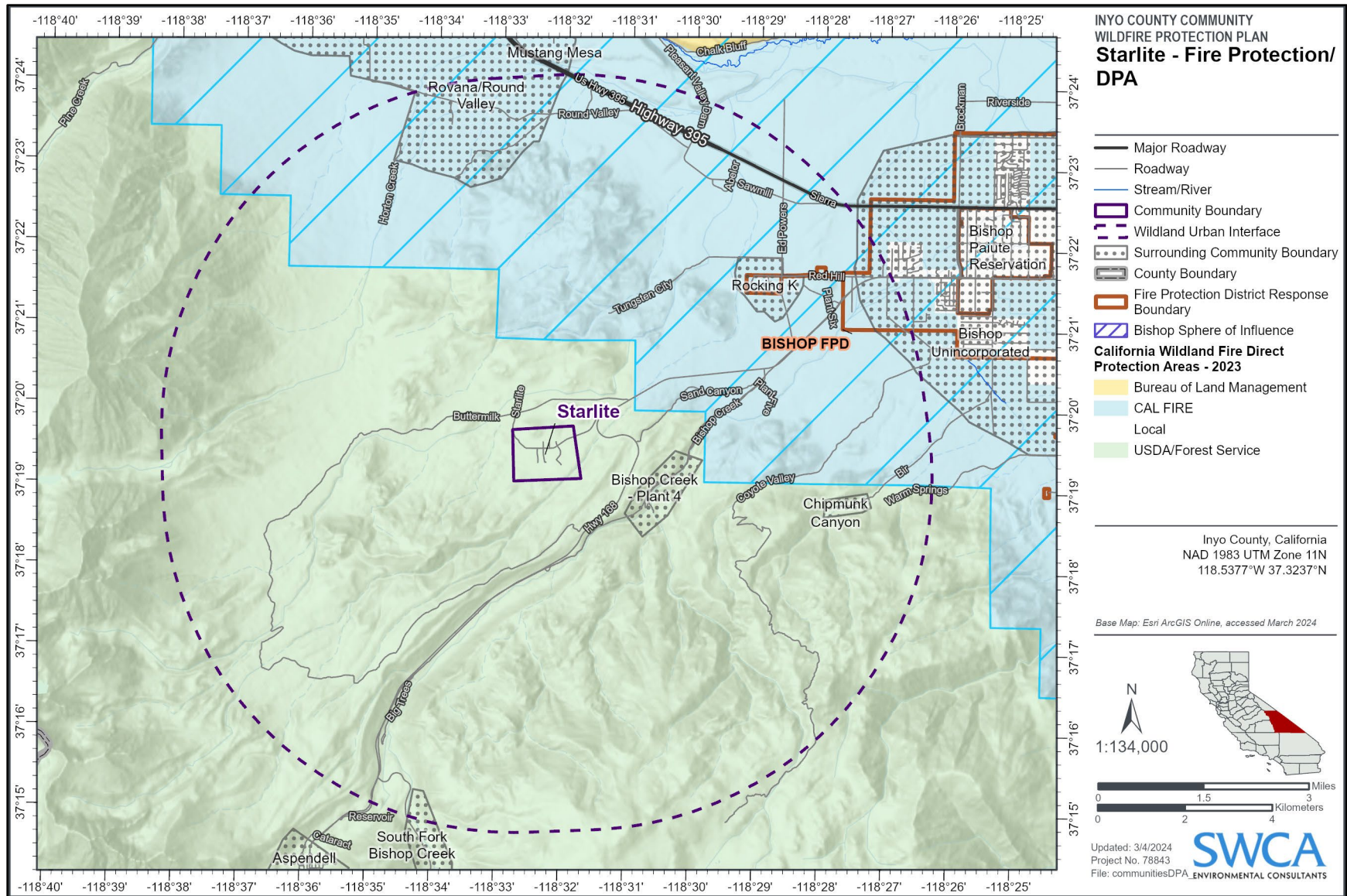


Figure D.14. Direct protection area and fire protection district boundary around Starlite.

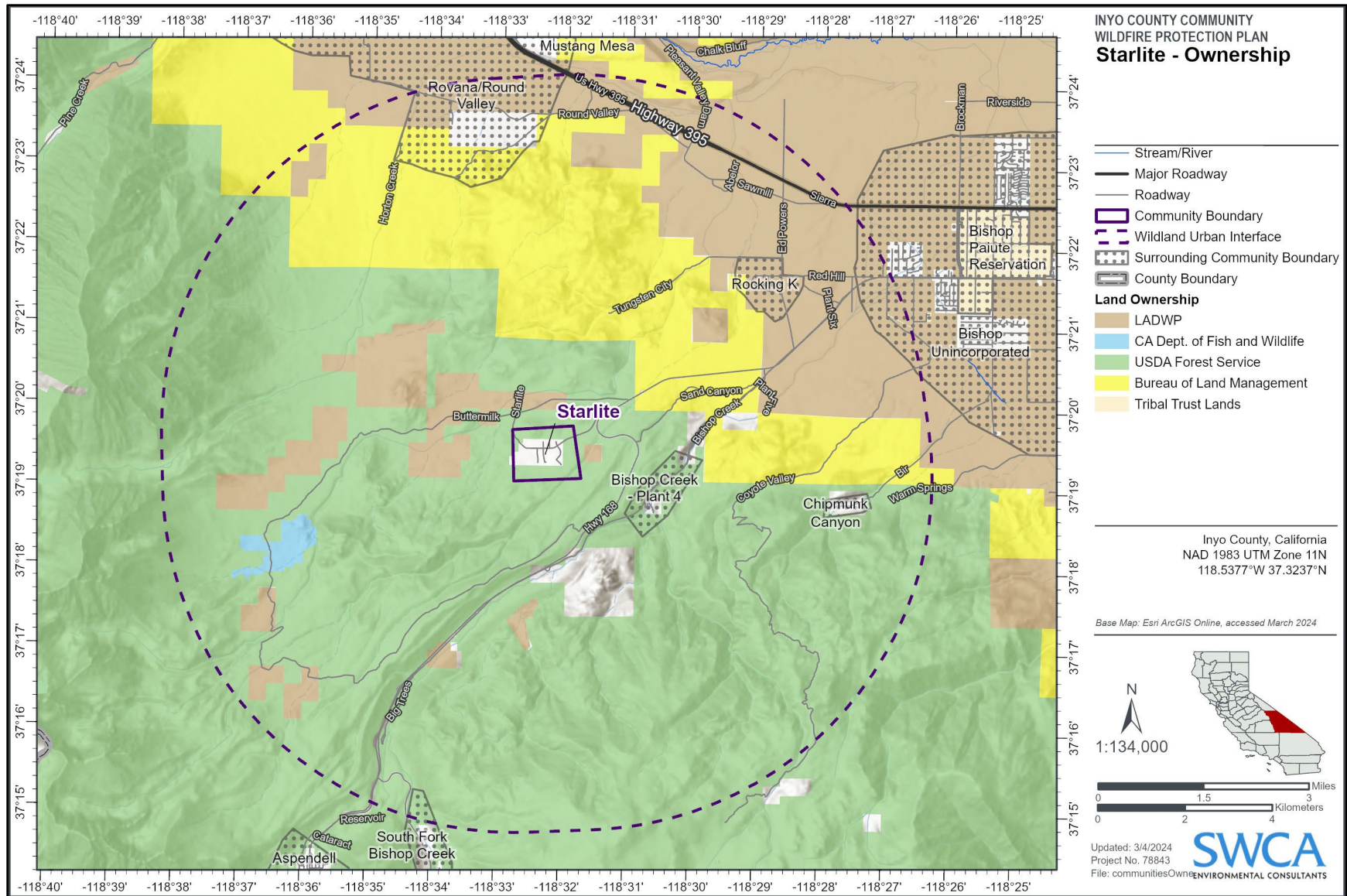


Figure D.15. Land ownership around Starlite.

GREATER BISHOP

BISHOP UNINCORPORATED*

Community Background

Community Name: Bishop Unincorporated **Total Score:** 71 (High) **Land Area (acres):** N/A

*The field survey was focused on areas with heavy vegetation loading, limited access, and large, open spaces (e.g., the perimeter of Bishop proper)

Fire Protection District Status: Within the jurisdiction of Bishop Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out in most areas
- Wide roads greater than 24 feet in width
- Relatively flat, surfaced roads
- Most areas have turnarounds
- Reflective street signs
- Fire station less than 5 miles from community
- Ponds and culverts can be used to draft

Negative Attributes (High Scores)

- Combustible siding, deck, and fencing
- Electric and gas utilities aboveground
- Limited defensible space
- Poor separation between structures
- Limited water availability/pressure in some areas
- Some areas have dead-end roads with only one access point and no turnarounds
- Cul-de-sacs present in some areas
- Problem areas: Reata Rd, See Vee Lane, Underwood, Dixon Lane, Shepard Lane, Watterson Rd, West of the Manor-Westridge neighborhood, west Bishop, west side of Brockman Lane (north of Line), and DWP land adjacent to Line St. and Mumy Lane

Areas without fire hydrants:

Highland Dr, Sunset Dr, Sunrise Dr, Longview Dr, McLaren Ln, South Mountain View, North Mountain View, Vista Rd, Mt Tom Rd, Ranch Rd, Shepard Ln, Desiderata Estates, Van Loon, Dixon Ln, Saniger Ln, West St, Glenwood Trailer Park, Old Wilkerson Fairview Ln, Rocking K

Suggested Recommendations

- Maintain rights-of-way clear of encroaching vegetation
- Create and maintain fuel breaks around perimeter of Bishop, beginning with high-risk areas
- Develop a substantial campaign to reduce the density and continuity of residential fuels, beginning with clearing "zone zero" around houses
- Expand hydrant coverage and/or supplement water resources in areas with insufficient water resources
- Conduct outreach to inform residents about evacuation, home hardening, and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Develop a community evacuation plan and conduct evacuation drills in areas with limited accessibility
- Identify alternative evacuation routes and/or temporary refuge areas
- Develop an evacuation plan for large animals, including large equestrian centers (e.g., Highway 6 and Reata Rd)
- Assess overgrown creeks with dead and dried vegetation to direct restoration efforts
- Develop agreements with LADWP to permit communities, fire safe councils, and private landowners to create and maintain fuel breaks on LADWP property
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)
- Collaborate with private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use on driveways and private roads longer than 300 feet

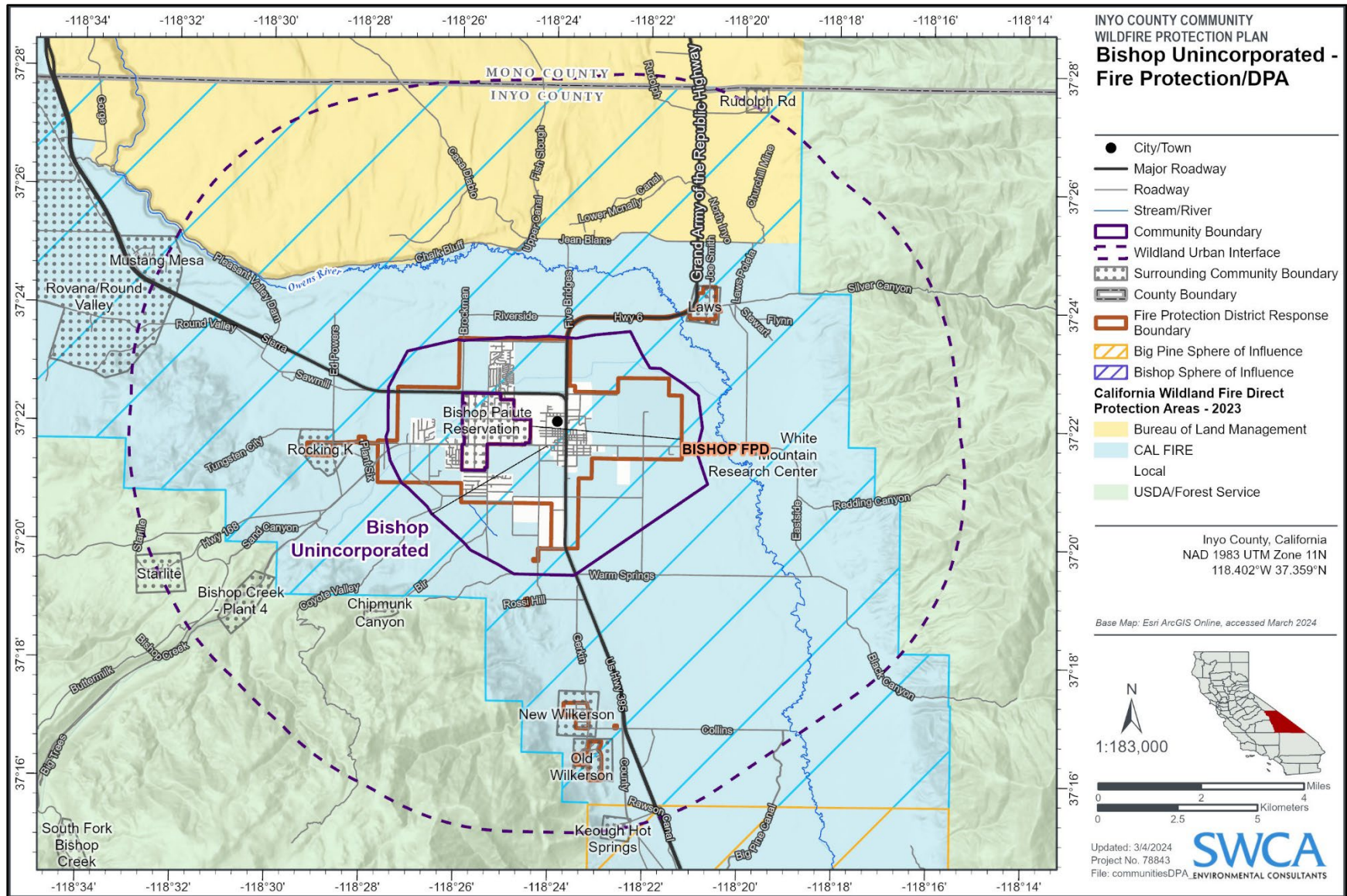


Figure D.16. Direct protection area and fire protection district boundary around Bishop.

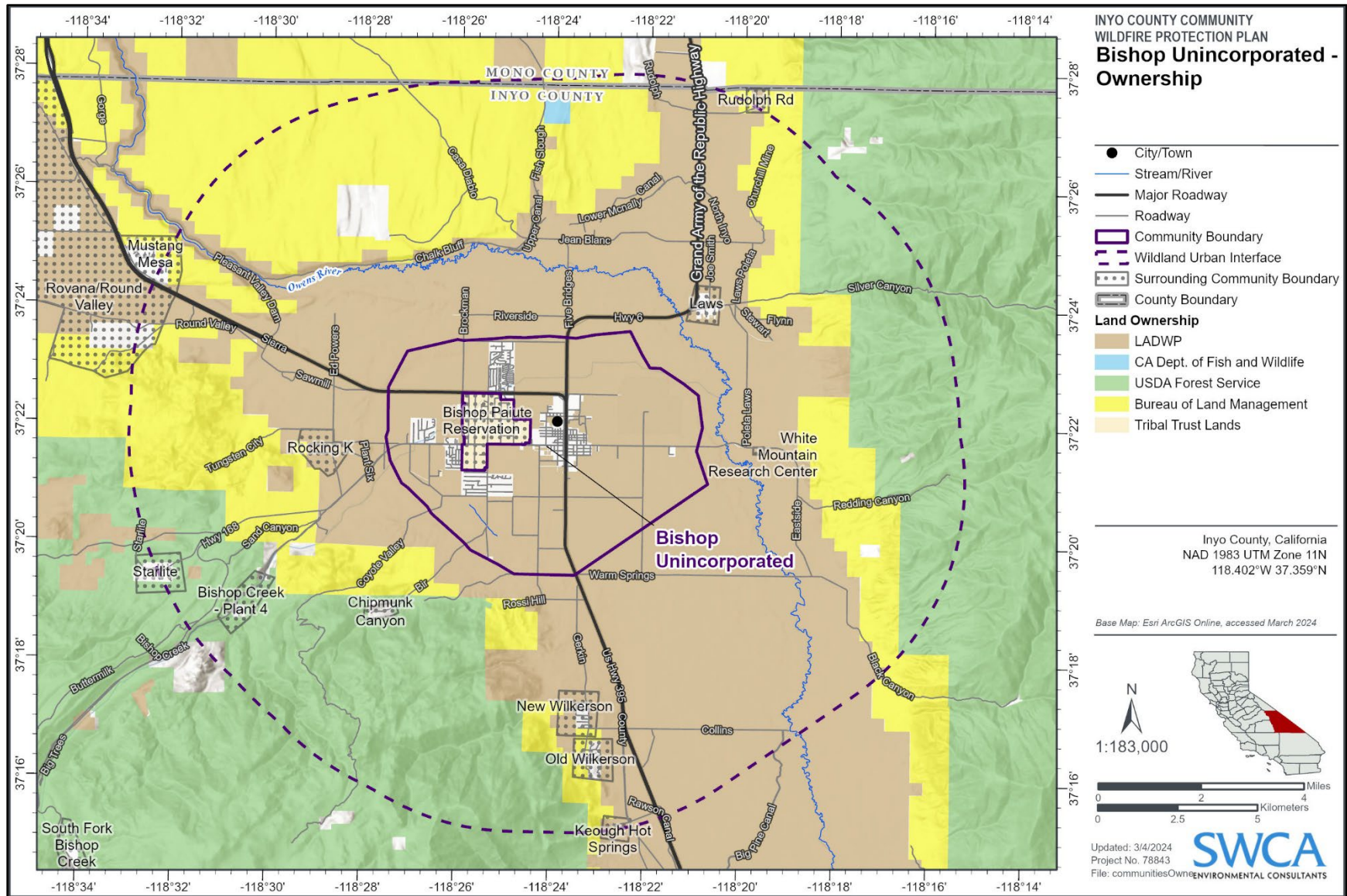


Figure D.17. Land ownership around Bishop.

BISHOP PAIUTE TRIBE

Community Background		
Community Name: Bishop Paiute Tribe	Total Score: 82 (High)	Land Area (acres): 875
Fire Protection District Status: Within the jurisdiction of Bishop Fire Department		

1144 Survey Summary Highlights	
<p><u>Positive Attributes (Low Scores)</u></p> <ul style="list-style-type: none"> • 2 or more roads in and out • Relatively flat, surfaced roads • Reflective street signs • Low angle slopes around structures • Fire station less than 5 miles from community 	<p><u>Negative Attributes (High Scores)</u></p> <ul style="list-style-type: none"> • Combustible home siding, decks, and fencing • Older properties with unmaintained yards • Heavy fuel loading within community • Gas and electric utilities aboveground • Some properties with poor defensible space • Limited water availability • Long driveways with fuels limiting access • Some properties with excessive yard debris

Suggested Recommendations
<ul style="list-style-type: none"> • Maintain rights-of-way clear of encroaching vegetation • Continue and expand current (2023-24) defensible space / fuel reduction project • Expand hydrant coverage and/or supplement water resources in areas with insufficient water resources • Engage with tribal representatives to bolster education about defensible space and the dangers of excess yard debris • Facilitate connections between residents and available funding streams and programs to support home hardening projects • Develop a community evacuation plan and conduct evacuation drills in areas with limited accessibility • Identify alternative evacuation routes and/or temporary refuge areas • Assess overgrown creeks with dead and dried vegetation to direct restoration efforts • Develop agreements with LADWP to permit communities, fire safe councils, and private landowners to create and maintain fuel breaks on LADWP property • Explore options to initiate debris cleanup events • Collaborate with property owners and assignment holders to maintain driveways clear of vegetation • Collaborate with private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use on driveways and private roads longer than 300 feet • Assess community capacity for defensible space implementation to determine needs • Encourage assignment holder implementation of defensible space standards (see Appendix J)

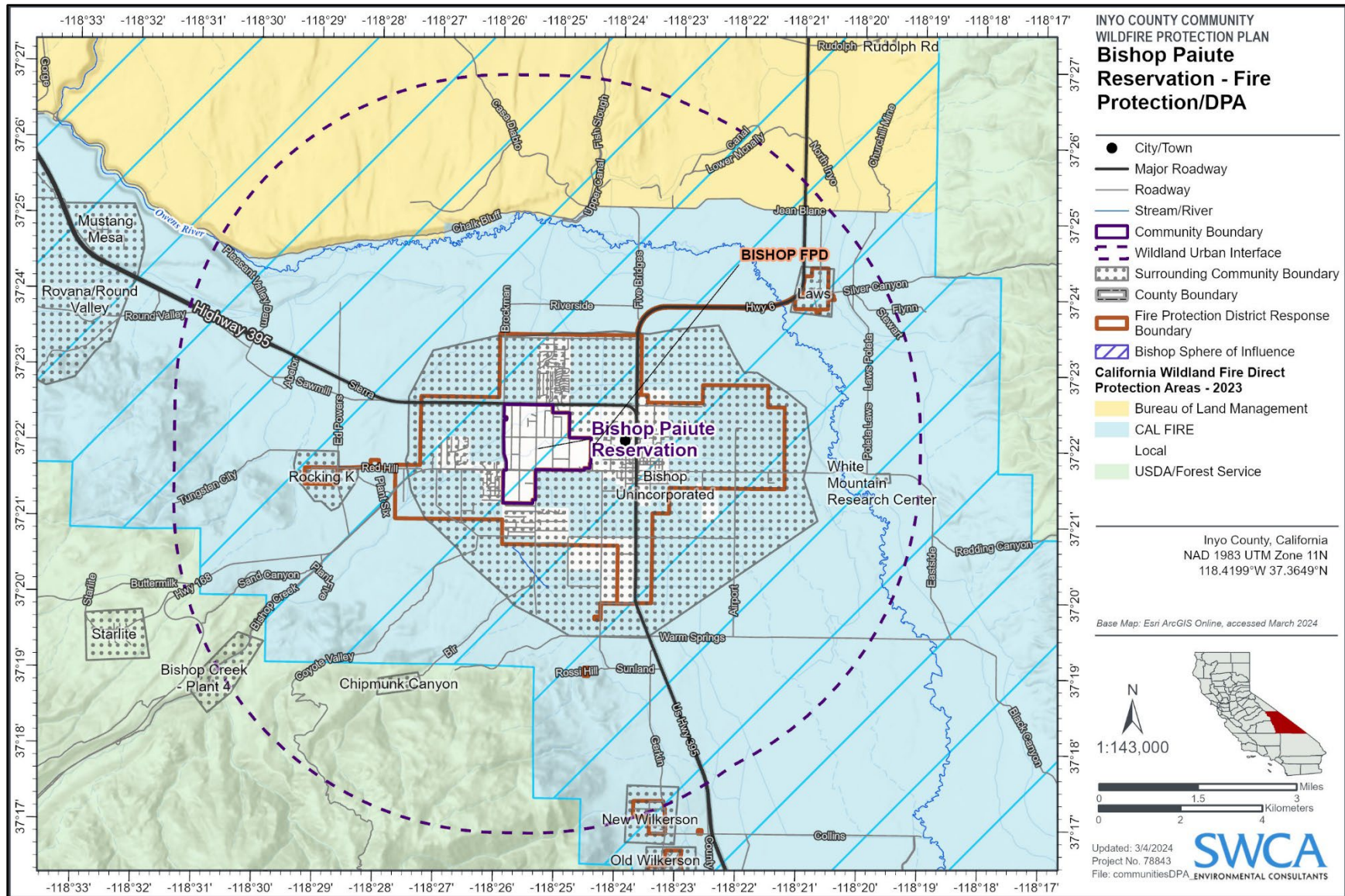


Figure D.18. Direct protection area and fire protection district boundary around Bishop Paiute.

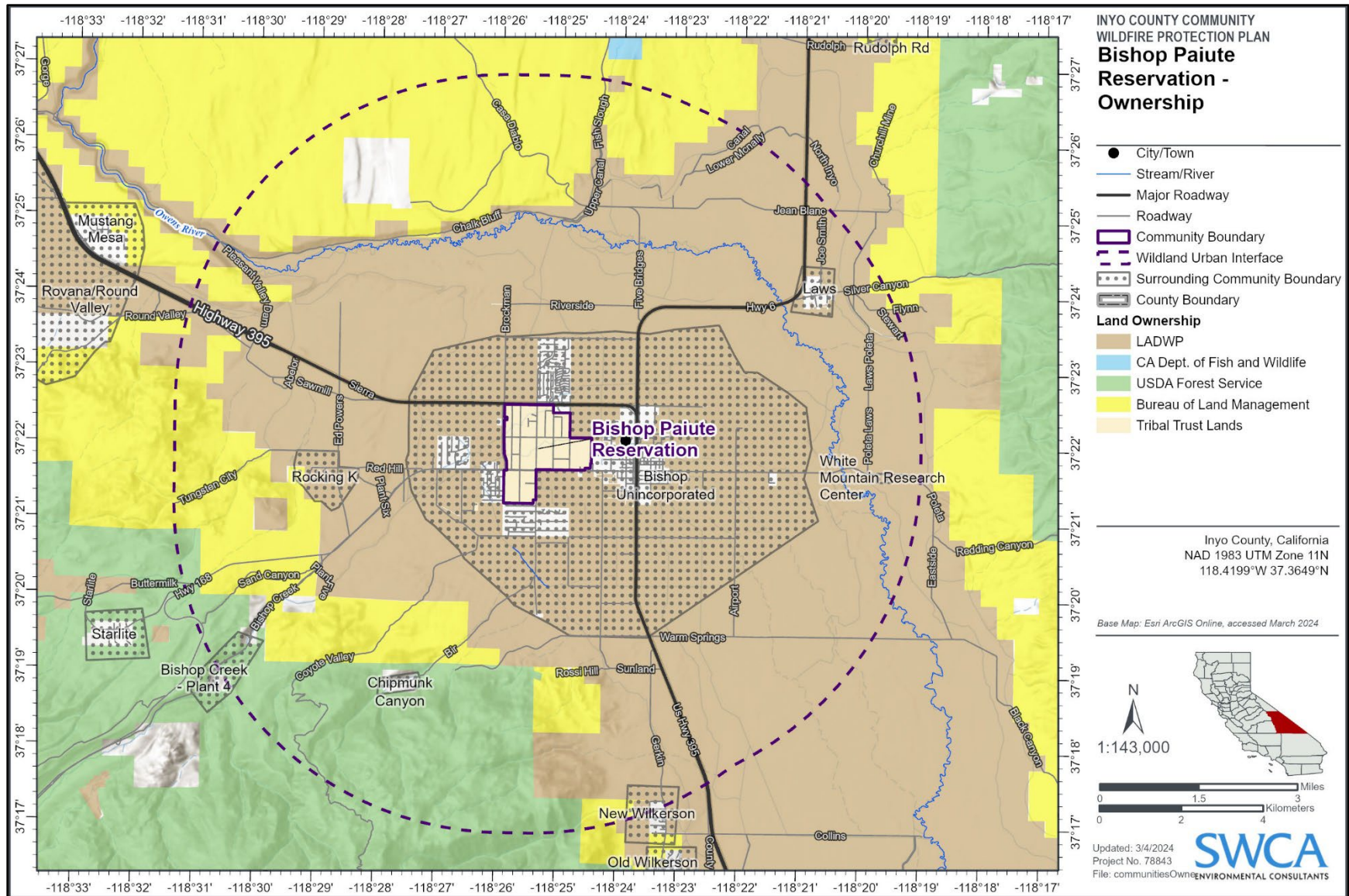


Figure D.19. Land ownership around Bishop Paiute.

LAWS

Community Background

Community Name: Laws* **Total Score:** 62 (Moderate) **Land Area (acres):** 259

Fire Protection District Status: Within the jurisdiction of Bishop Fire Department

*Note: community is mostly industrial and commercial, very little residential

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Reflective street signs
- Defensible space is acceptable
- Easily accessible to fire response with wide roads
- 2 or more roads in and out
- Flat, surfaced roads
- Water source present (water tank)

Negative Attributes (High Scores)

- Combustible siding materials
- Severe fire weather potential
- History of high fire occurrence
- Most of the community is far from the fire station
- Gas and electric utilities are aboveground

Suggested Recommendations

- Continue to maintain roadside clearance and defensible space around structures
- Maintain water tanks full and ensure that fittings are accessible
- Develop community (greater Bishop) service project to maintain zone zero around Laws Railroad Museum structures; use as educational opportunity for homeowners in Bishop

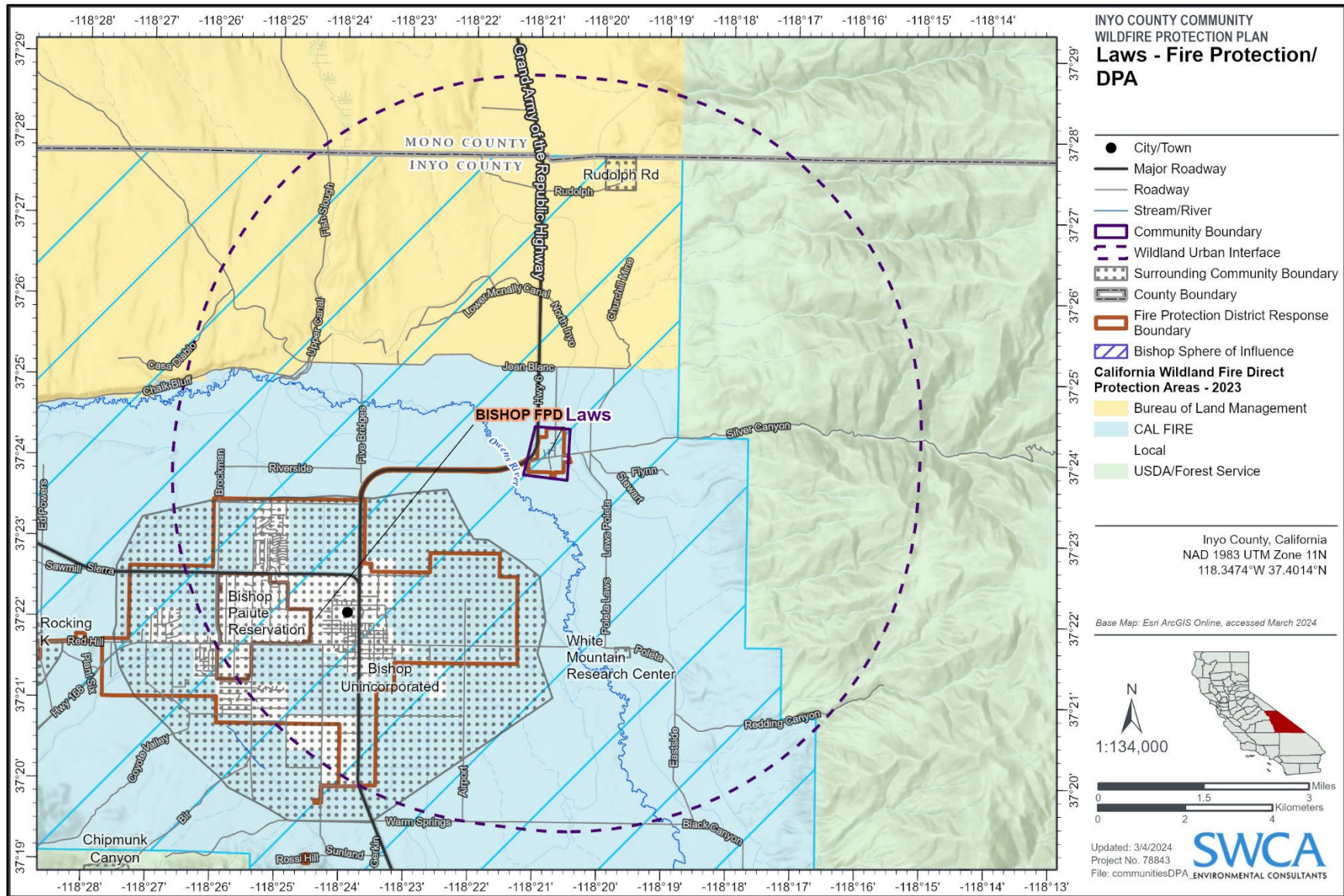


Figure D.20. Direct protection area and fire protection district boundary around Laws.

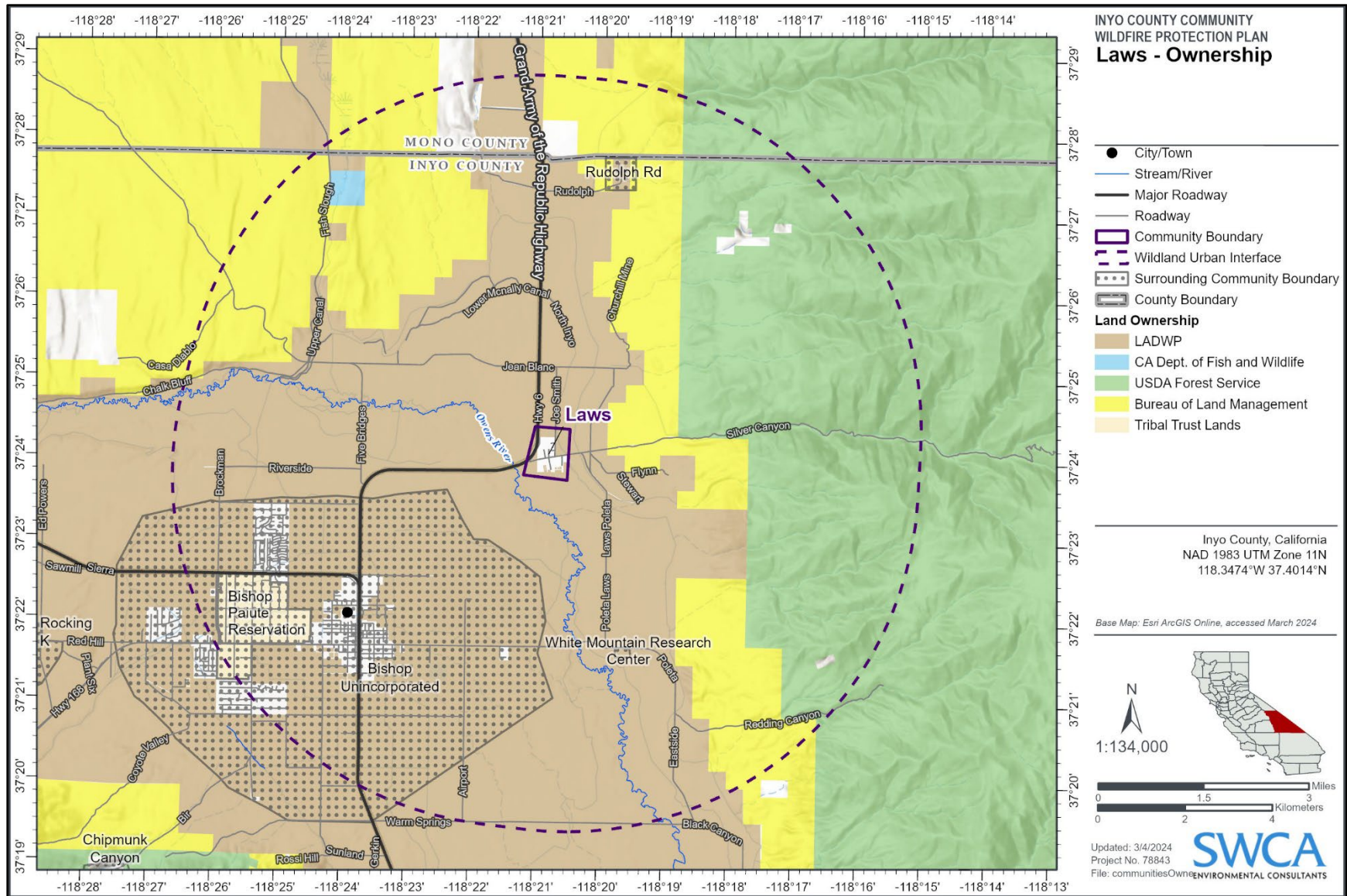


Figure D.21. Land ownership around Laws.

ROCKING K

Community Background

Community Name: Rocking K **Total Score:** 63 (Moderate) **Land Area (acres):** 378
Fire Protection District Status: Within the jurisdiction of Bishop Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Relatively flat, surfaced roads
- Reflective street signs and address markers
- Low angle slopes around structures
- Good water source (hydrants)
- Fire station near to community
- Existing fuel break to the north

Negative Attributes (High Scores)

- Limited of defensible space
- Combustible fencing, deck, roof, and siding materials
- Low separation of adjacent structures
- Gas and electric utilities are aboveground

Suggested Recommendations

- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Conduct outreach about defensible space and home hardening
- Establish a large animal evacuation plan
- Develop agreement with LADWP to create and maintain a northern perimeter fuel break on LADWP property
- Establish a western perimeter fuel break
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)

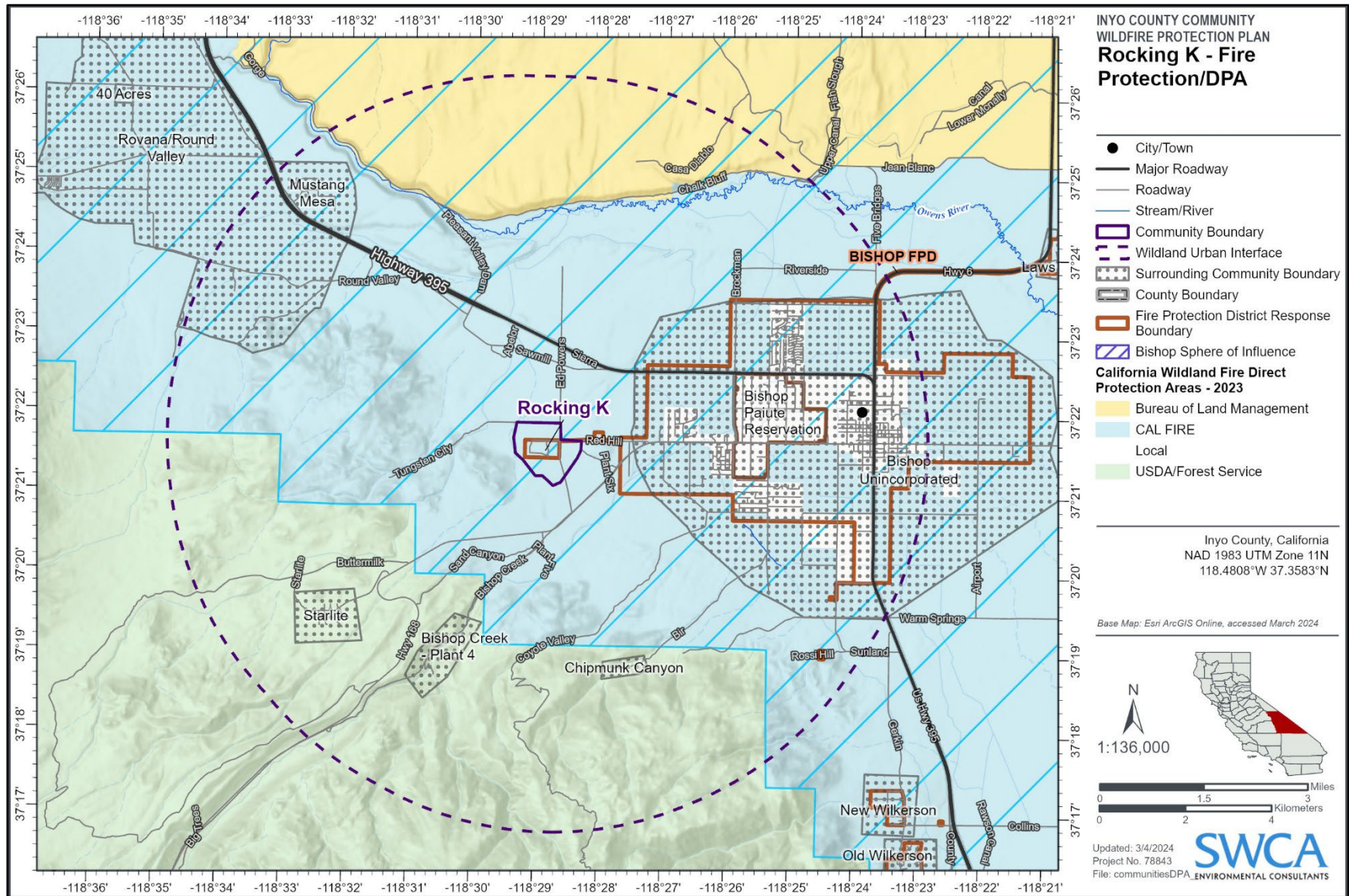


Figure D.22. Direct protection area and fire protection district boundary around Rocking K.

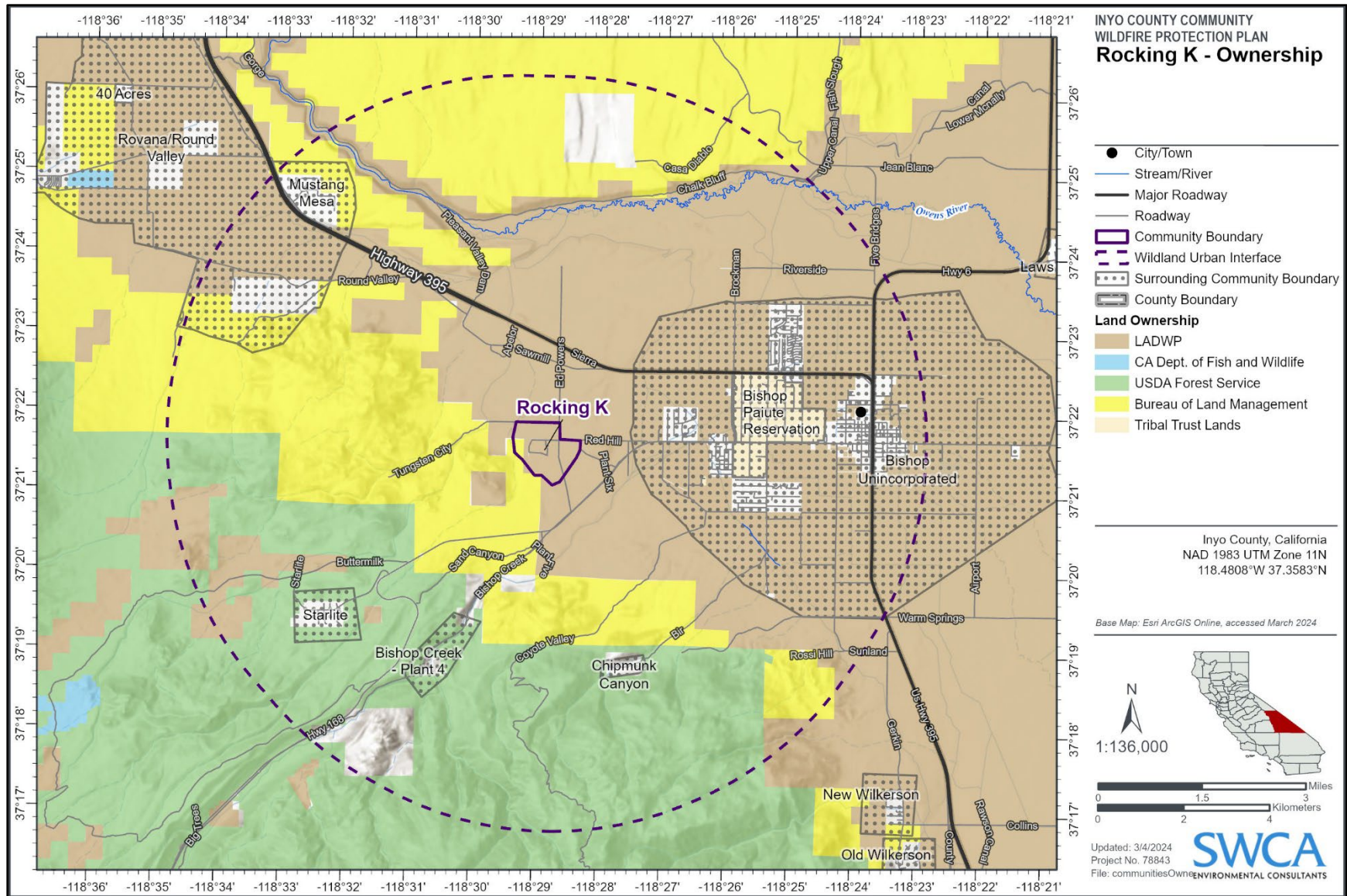


Figure D.23. Land ownership around Rocking K.

RUDOLPH

Community Background

Community Name: Rudolph

Total Score: 86 (High)

Land Area (acres): 127

Fire Protection District Status: Within the SOI of Bishop Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Wide roads
- Relatively flat, surfaced roads
- Reflective street signs
- Surrounding fuels are light and sparse
- Marked driveways

Negative Attributes (High Scores)

- Only 1 road in and out
- Limited defensible space; branches touching roofs
- Medium slopes in close proximity to structures
- No water sources
- Combustible roof and siding materials
- Limited setback
- Limited water supply
- Gas and electric utilities are aboveground

Suggested Recommendations

- Continue to maintain roadside clearance on main access road (Rudolph Rd)
- Explore options to install hydrants or strategic placement of additional water tanks
- Conduct outreach to inform residents about home hardening and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)

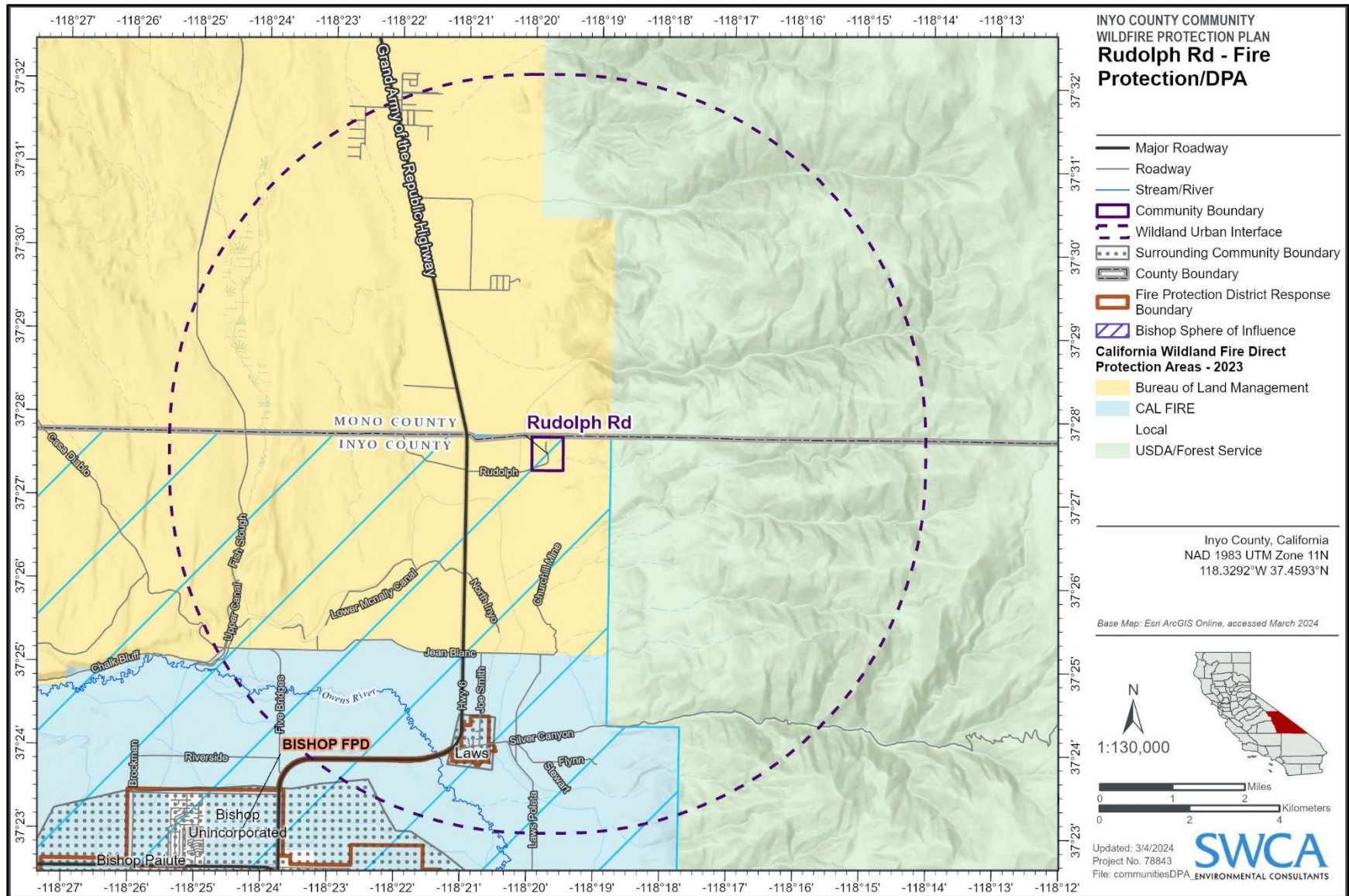


Figure D.24. Direct protection area and fire protection district boundary around Rudolph.

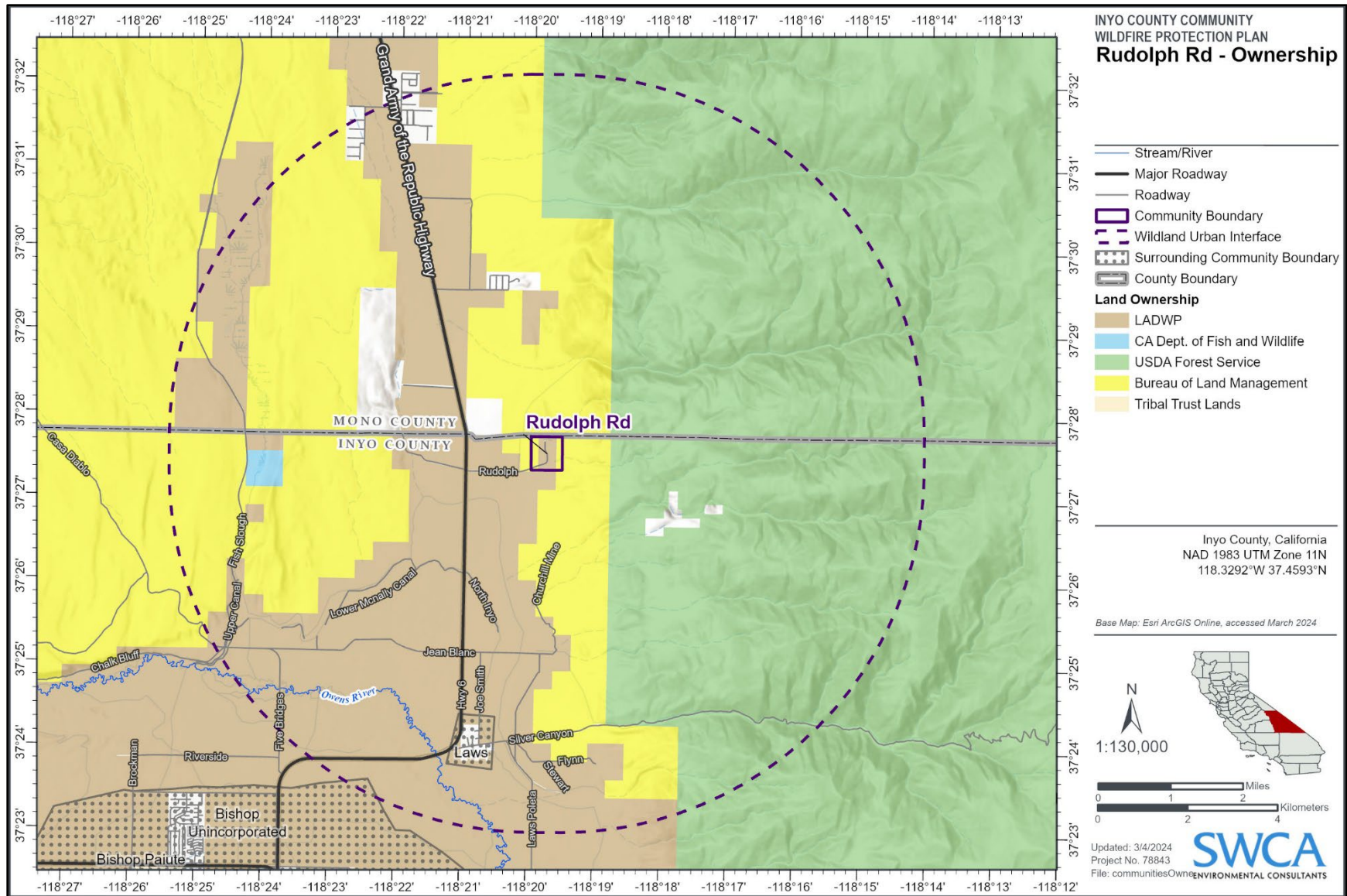


Figure D.25. Land ownership around Rudolph.

WHITE MOUNTAIN RESEARCH CENTER

Community Background

Community Name: White Mountain Research Center **Total Score:** 53 (Moderate) **Land Area (acres):** 19
Fire Protection District Status: Within the SOI of Bishop Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Relatively wide, flat, surfaced roads
- Reflective street signs
- Low angle slopes around structures
- Good separation of adjacent structures
- Non-combustible roof and fence
- Fire station nearby
- Defensible space is ok

Negative Attributes (High Scores)

- Combustible structure siding
- No water sources
- Gas and electric utilities are aboveground
- Fuels on the east and west perimeter are dense

Suggested Recommendations

- Continue maintenance of defensible space
- Engage owners/administrators to explore options for water resource development

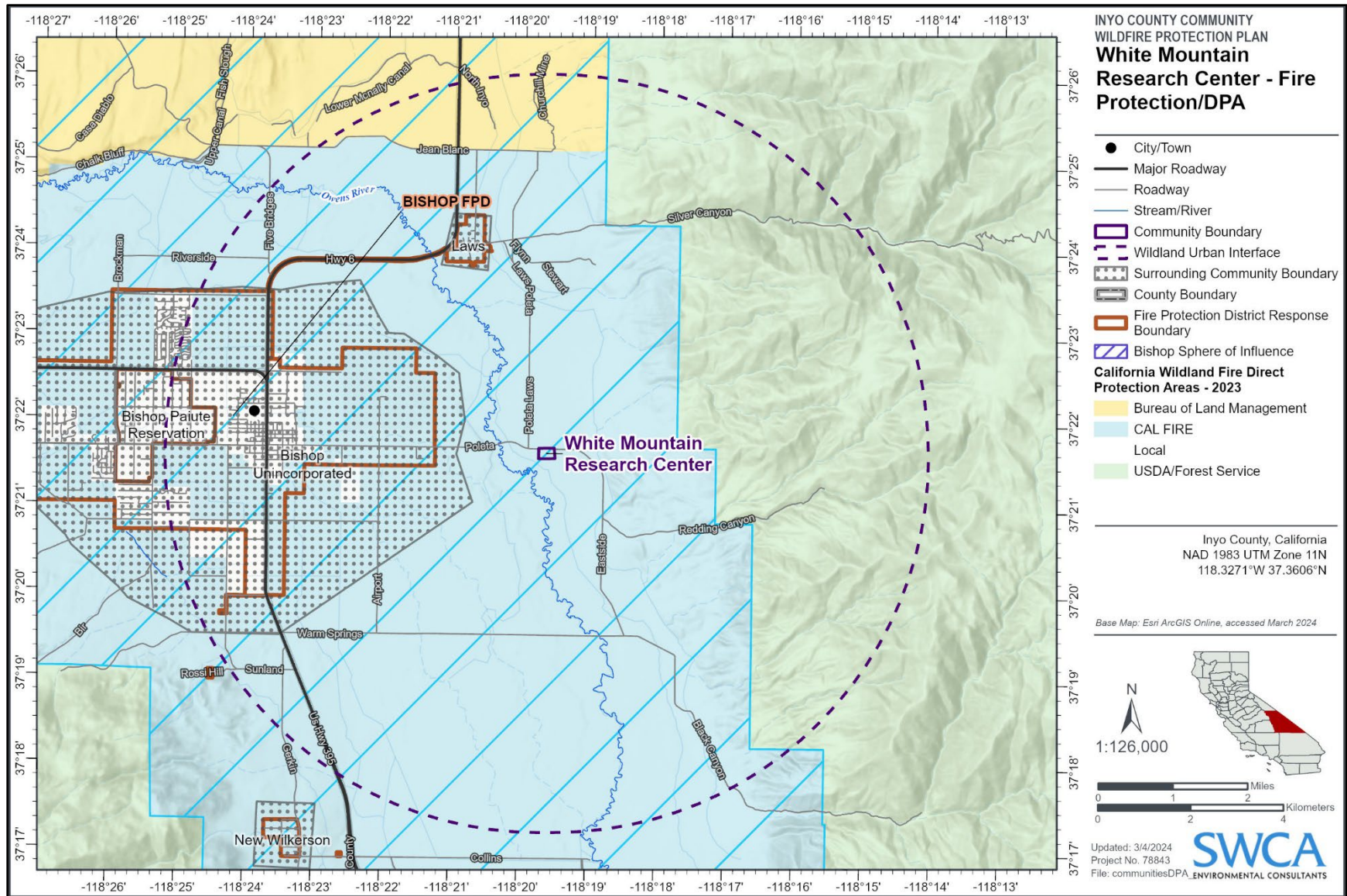


Figure D.26. Direct protection area and fire protection district boundary around White Mountain Research Center

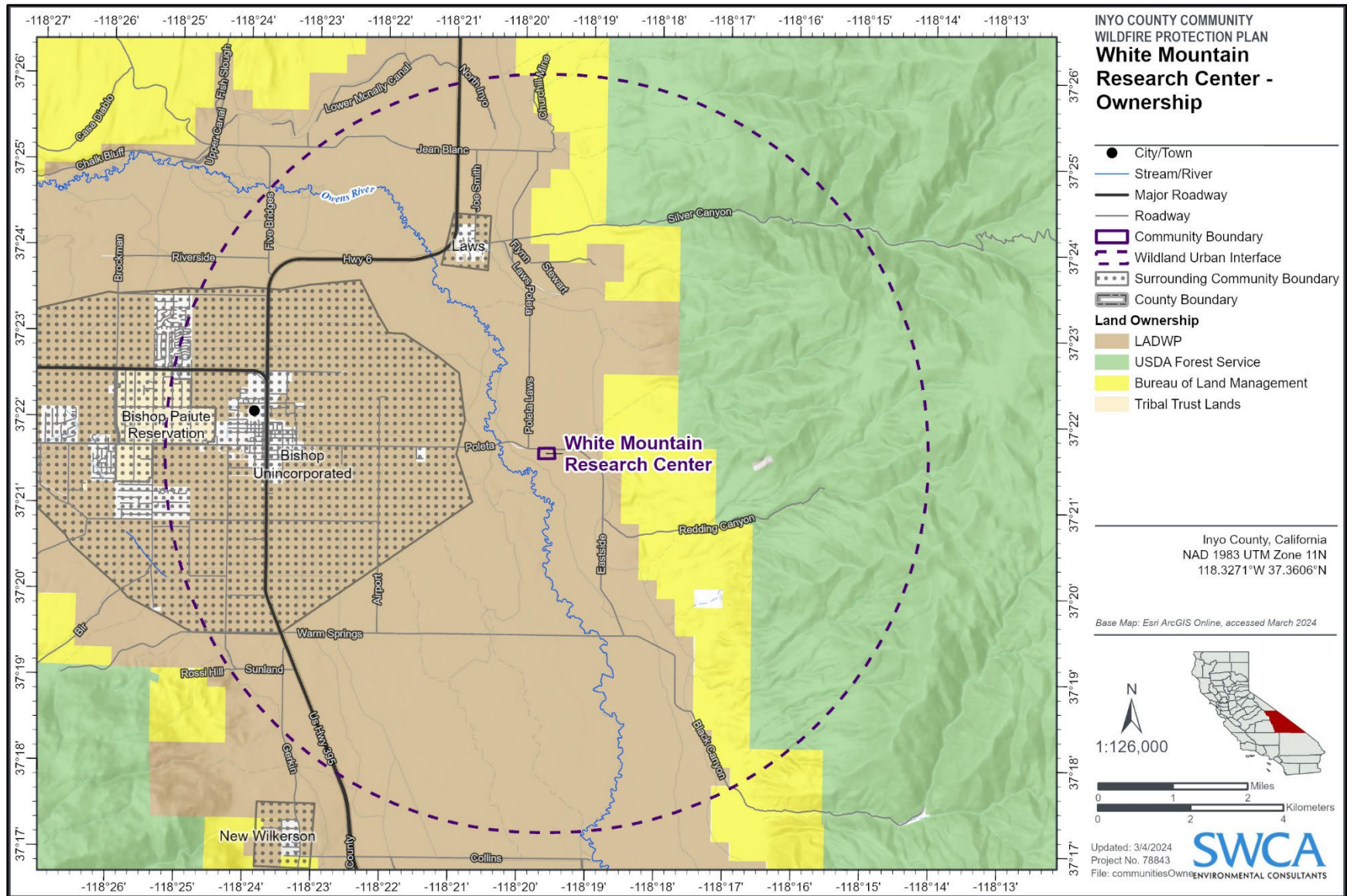


Figure D.27. Land ownership around White Mountain Research Center.

ALONG OR NEAR U.S. 395 BETWEEN BISHOP AND LONE PINE

ABERDEEN

Community Background

Community Name: Aberdeen **Total Score:** 61 (Moderate) **Land Area (acres):** 212
Fire Protection District Status: Within the SOI of Independence Volunteer Fire Department and Big Pine Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Relatively flat, surfaced roads
- Wide roads
- Reflective street signs
- Defensible space is acceptable

Negative Attributes (High Scores)

- Water source not present
- Predominantly combustible deck, fence, siding, and roofing materials
- Potential for severe fire weather
- A couple of dead-end local access roads within community

Suggested Recommendations

- Continue to maintain perimeter fuel breaks (east, west, north, and south)
- Continue to maintain fuel levels low along main access roads (Goodale Road and Tinnemaha Road)
- Engage community to explore options for water resource development
- Consider mapping and utilizing perennial flowing streams to supplement firefighting water resources
- Conduct outreach to inform residents about home hardening and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Seek to establish fire protection agreements and strategies with the closest FPD or establish a nexus with the responding agency

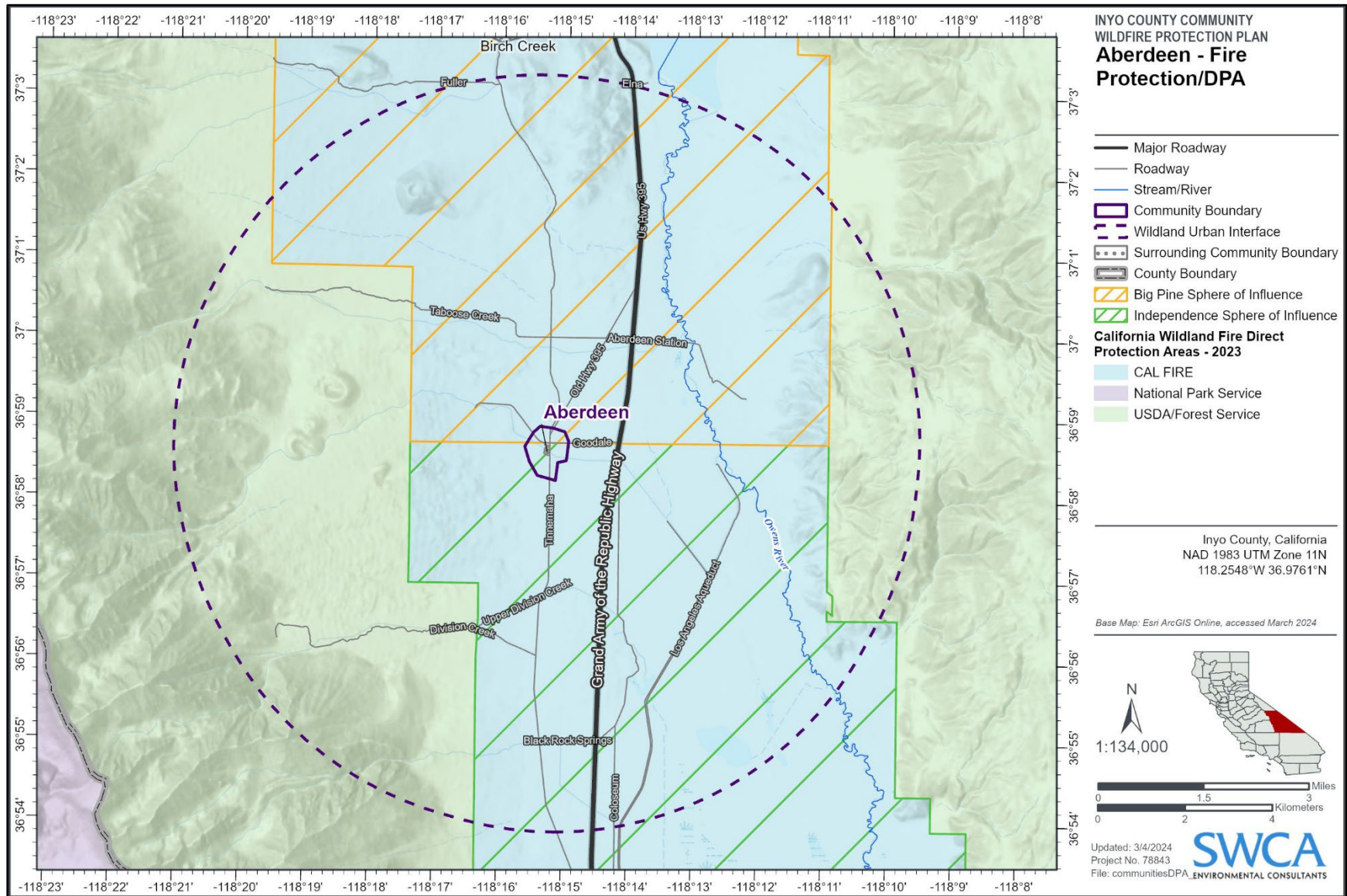


Figure D.28. Direct protection area and fire protection district boundary around Aberdeen.

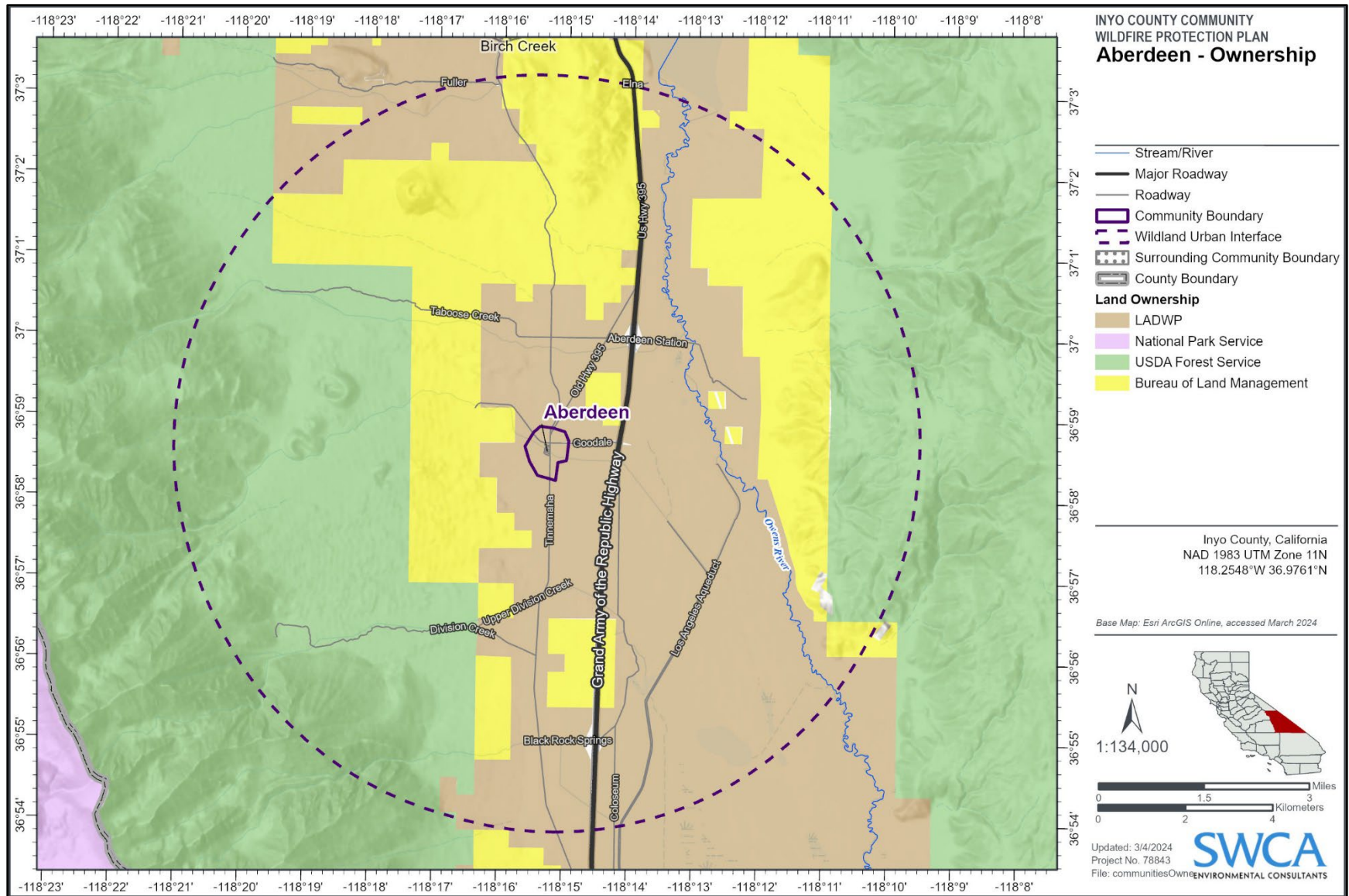


Figure D.29. Land ownership around Aberdeen.

BIG PINE

Community Background

Community Name: Big Pine

Total Score: 52 (Moderate)

Land Area (acres): 1,698

Fire Protection District Status: Within the jurisdiction of Big Pine Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Relatively flat, surfaced, and wide roads
- Easily accessible to fire response
- Reflective street signs
- Low angle slopes around structures
- Hydrants present throughout community
- Fire station within the community
- Generally good defensible space
- West perimeter is bordered by a wide road and brick wall for most of its length
- Fuel break on the north end of “The Track”

Negative Attributes (High Scores)

- Combustible deck, siding, and fencing
- Electric and gas utilities aboveground
- Defensible space is limited in a few areas (some structures have branches resting on the rooftop)

Suggested Recommendations

- Continue to maintain perimeter fuel breaks
- Continue to maintain roadside clearance
- Develop agreements with LADWP to permit communities, fire safe councils, and private landowners to create and maintain fuel breaks on LADWP property.
- Manage fuel loads within LADWP lots or vacant lots within the community
- Conduct outreach to inform residents about home hardening and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Encourage homeowner implementation of defensible space standards (see Appendix J)

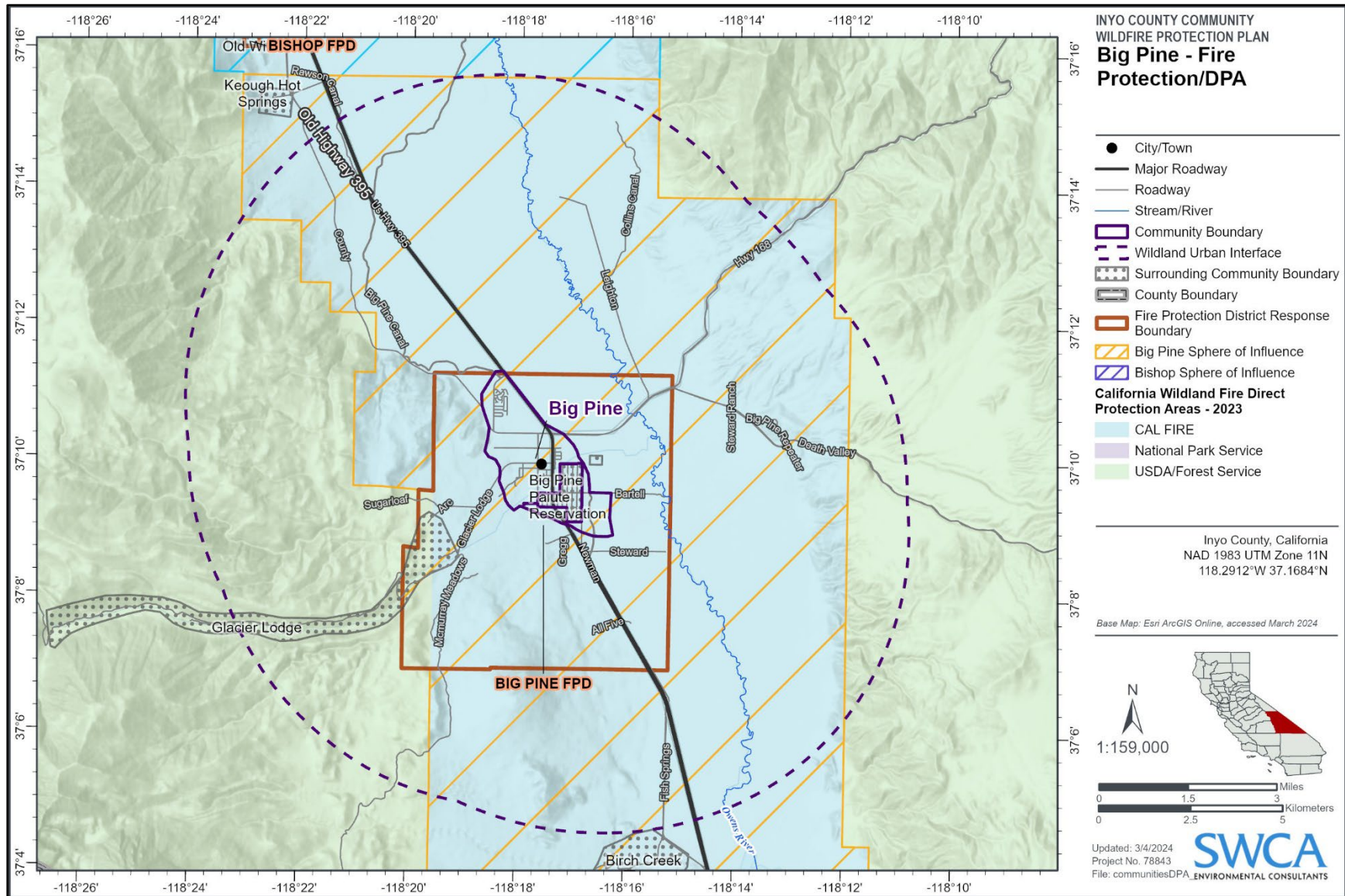


Figure D.30. Direct protection area and fire protection district boundary around Big Pine

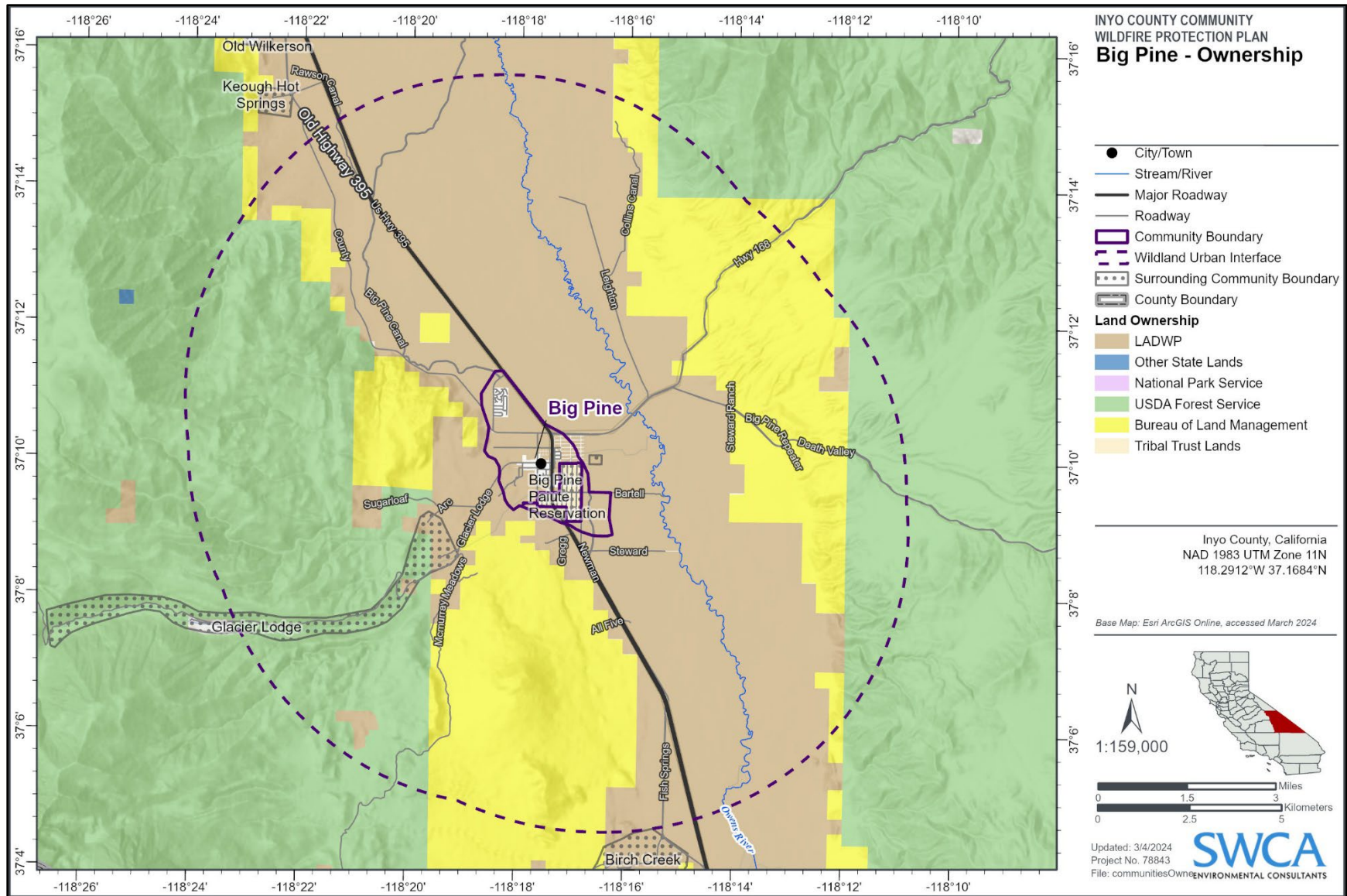


Figure D.31. Land ownership around Big Pine.

BIG PINE PAIUTE TRIBE

Community Background

Community Name: Big Pine Paiute Tribe **Total Score:** 74 (High) **Land Area (acres):** 862

Fire Protection District Status: Within the jurisdiction of Big Pine Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out score
- Relatively flat, surfaced roads
- Easily accessible to fire response
- Reflective street signs
- Low angle slopes around structures
- Hydrants present
- Fire station less than 5 miles from community

Negative Attributes (High Scores)

- Combustible siding, deck, and fencing
- Electric and gas utilities aboveground
- Poor defensible space
- Many properties with excess yard debris and rubbish
- Community perimeter fuel breaks not maintained

Suggested Recommendations

- Develop agreements with LADWP to permit communities, fire safe councils, and private landowners to create and maintain fuel breaks on LADWP property
- Maintain clearance along local access roads
- Engage with tribal representatives to bolster education about defensible space and the dangers of excess yard debris
- Explore options to initiate debris cleanup events
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Assess community capacity for defensible space implementation to determine needs
- Encourage assignment holder implementation of defensible space standards (see Appendix J)
- Evaluate feasibility of using LADWP-provided water resources from the tribe to keep water storage tanks at capacity

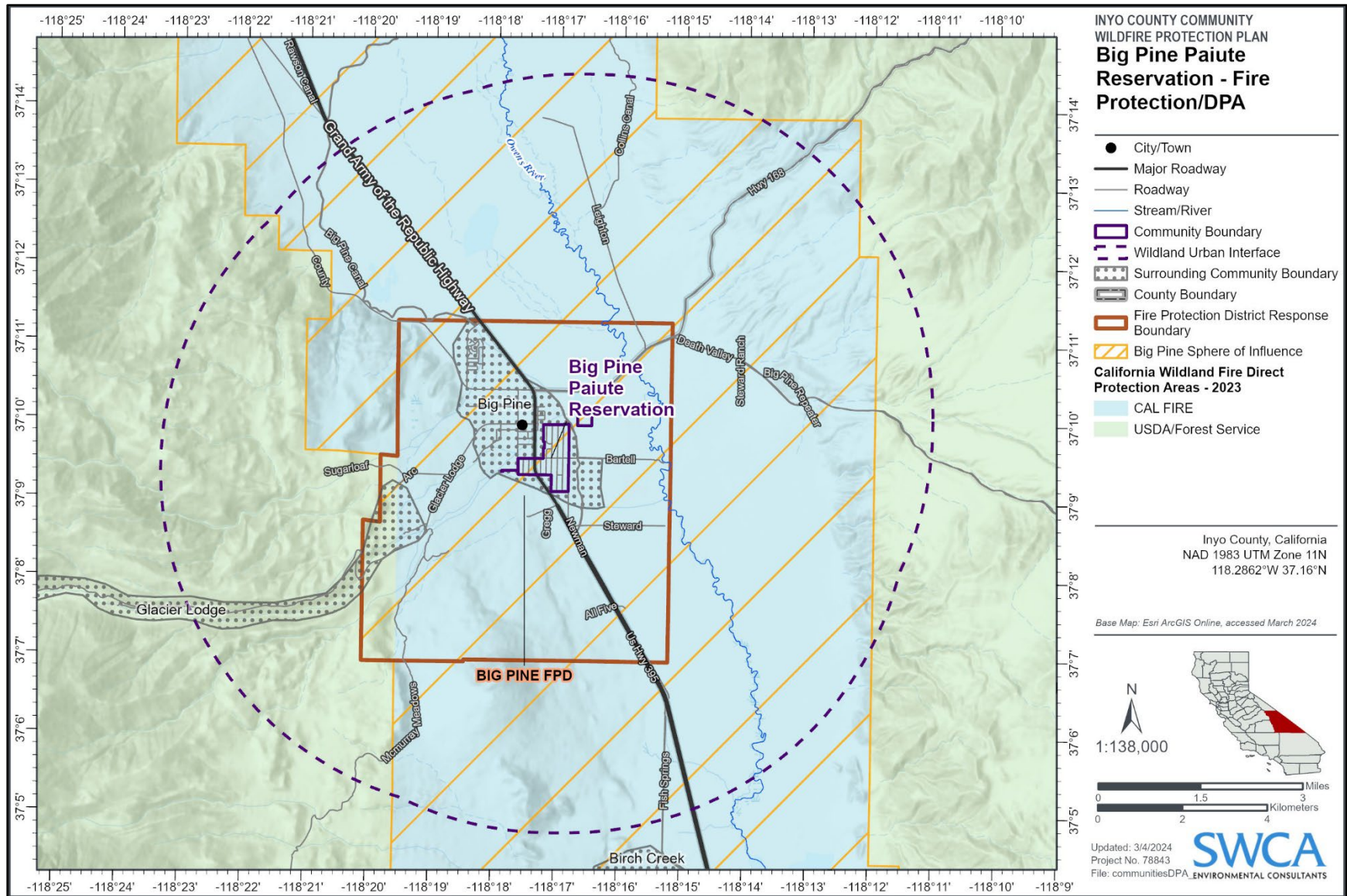


Figure D.32. Direct protection area and fire protection district boundary around Big Pine Paiute.

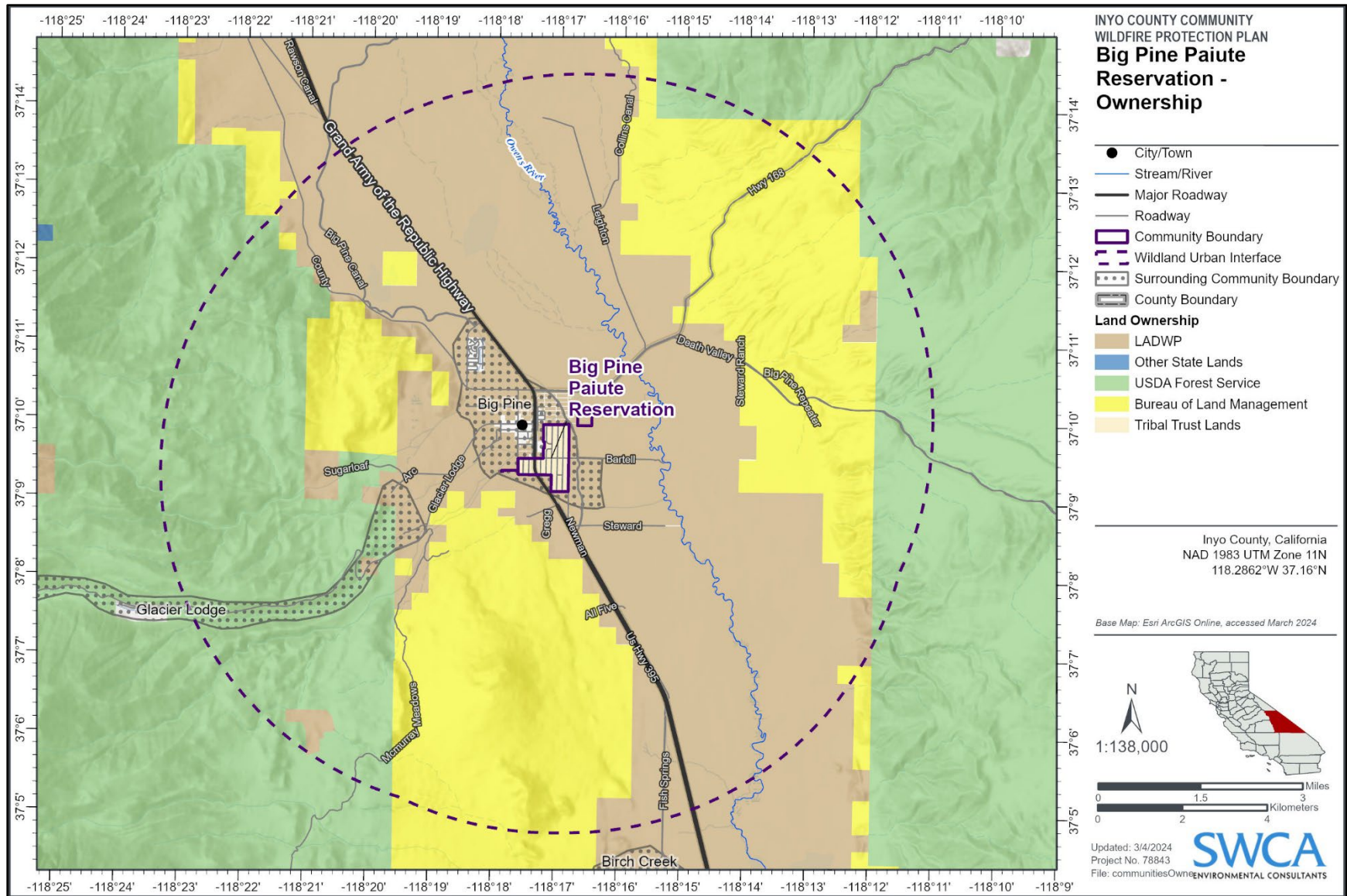


Figure D.33. Land ownership around Big Pine Paiute.

BIRCH CREEK

Community Background

Community Name: Birch Creek

Total Score: 92 (High)

Land Area (acres): 749

Fire Protection District Status: Within the SOI of Big Pine Fire Protection District (they are not able to respond due to narrow roads with heavy fuels)

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Structures have good separation
- Some structures are hardened
- A couple of properties with non-combustible fencing

Negative Attributes (High Scores)

- 1 road in and out
- Severely limited turnarounds
- Limited defensible space
- Electric and gas utilities aboveground
- Street signs not present
- Complex topography/terrain (e.g., creeks with heavy fuels, limited setback from structures)
- Limited water resources
- Heavy fuel loading along narrow roads
- Dense riparian vegetation intersects community
- No water, other than private water tanks

Suggested Recommendations

- Clear and/or reduce fuels along Birch Creek Rd
- Install directional signage
- Engage community to explore options for water resource development
- Conduct outreach to inform residents about evacuation, home hardening, and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Develop a community evacuation plan
- Conduct evacuation drills
- Identify alternative evacuation routes and/or temporary refuge areas
- Investigate opportunities to create breaks in the continuity of riparian fuels both upstream and downstream of Birch Creek
- Install reflective street signs
- Install reflective address markers
- Thin and reduce fuels on slopes immediately adjacent to properties
- Assess community capacity for defensible space implementation to determine needs
- Collaborate with local safety officials, fire departments, wildland fire agencies, and private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use
- Encourage homeowner implementation of defensible space standards (see Appendix J)

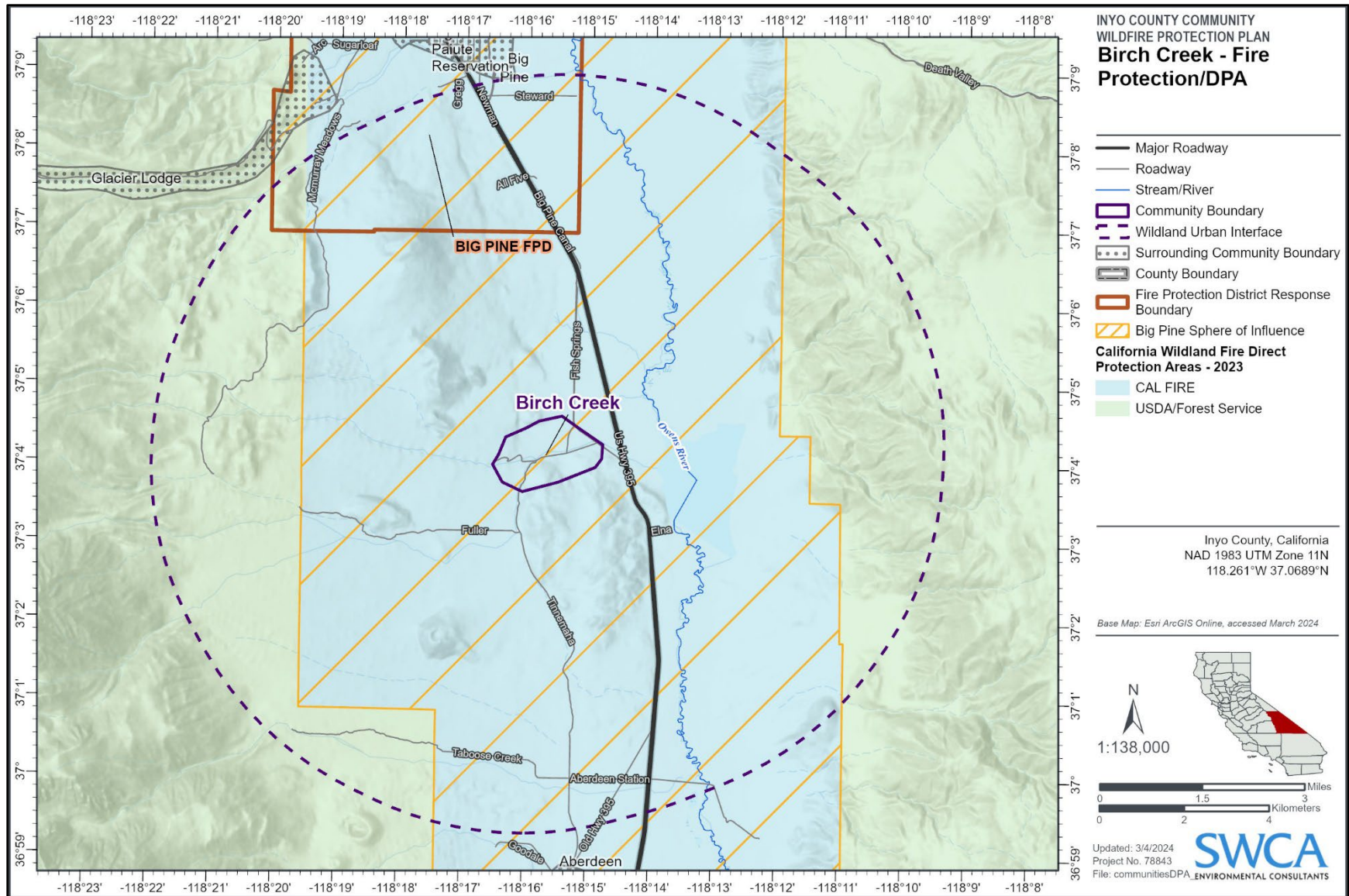


Figure D.34. Direct protection area and fire protection district boundary around Birch Creek.

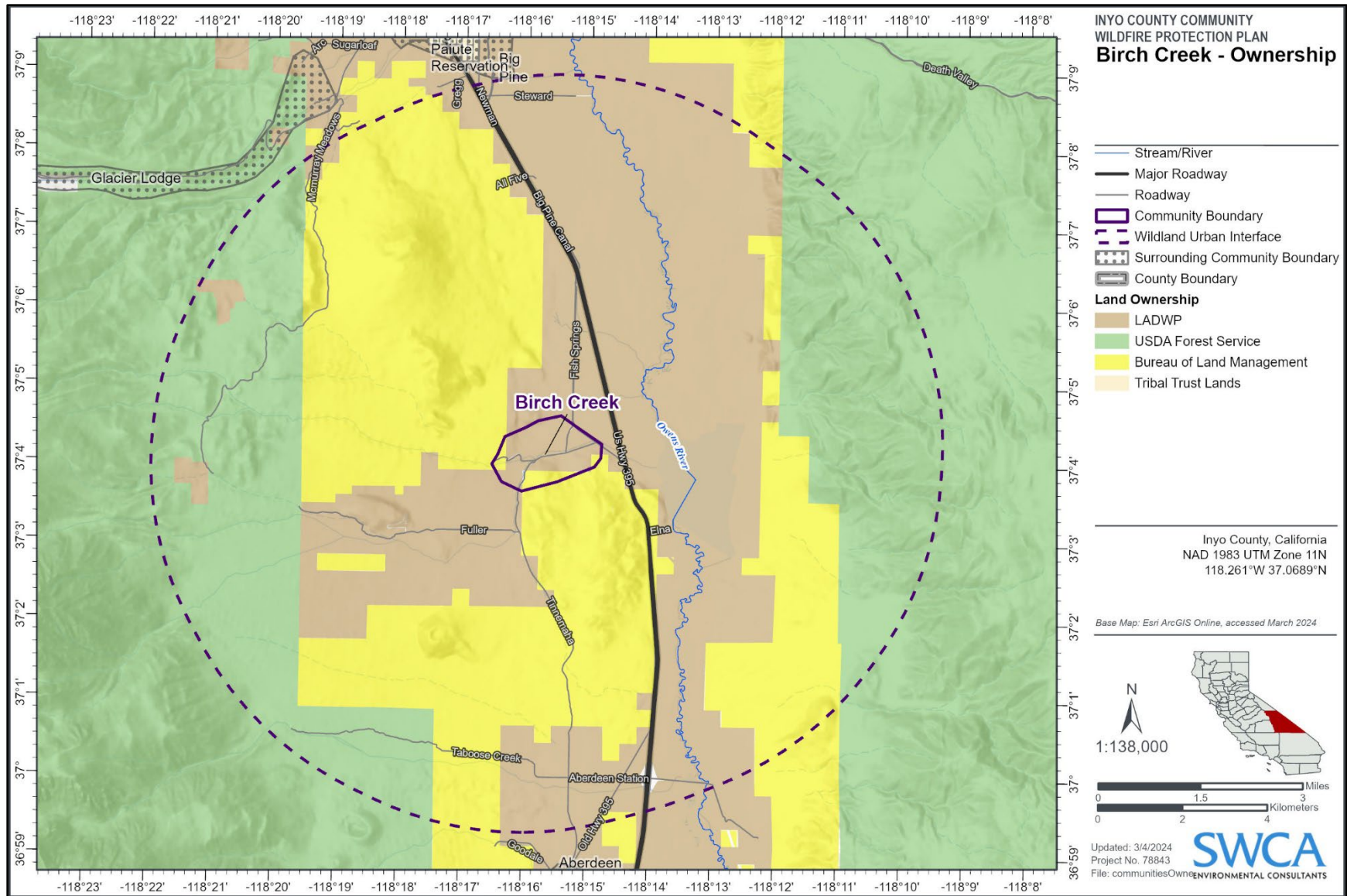


Figure D.35. Land ownership around Birch Creek.

GLACIER LODGE

Community Background

Community Name: Glacier Lodge **Total Score:** 116 (Extreme) **Land Area (acres):** 1885

Fire Protection District Status: Within the jurisdiction of Big Pine Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Good separation of adjacent structures

Negative Attributes (High Scores)

- Street signs not present
- Extremely limited turnarounds
- Narrow and steep roads with tight corners
- Limited defensible space
- Most structures are situated in a canyon with heavy riparian vegetation
- Extremely limited setback; homes are surrounded by steep slopes
- Combustible siding and roofing materials
- Lack of water resources
- Community is far away from fire response resources
- Electric and gas utilities aboveground
- Private properties along the creek are difficult to access due to very steep and narrow, unpaved driveways
- Dense vegetation encircles structures
- Bridges with unknown weight capacities

Suggested Recommendations

- Engage community to explore options for water resource development
- Investigate opportunities to create breaks in the continuity of upstream and downstream riparian fuels
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Conduct outreach about evacuation planning procedures, defensible space, and home hardening
- Identify alternative evacuation routes and/or temporary refuge areas
- Collaborate with residents to investigate opportunities for installing turnarounds or widening the road
- Conduct an assessment of bridge capacities for all bridges with unknown capacities to determine if upgrades are needed; post signage on bridges of weight limits
- Target visitor education efforts (e.g., Camp Like a Pro program materials) at Glacier Lodge cabin rental center
- Maintain and expand clearance along main evacuation corridors (e.g., Glacier Lodge Road)
- Install reflective street signs and directional signage
- Thin and reduce fuels on slopes immediately adjacent to properties
- Develop a community evacuation plan
- Assess community capacity for defensible space implementation to determine needs
- Collaborate with local safety officials, fire departments, wildland fire agencies, and private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use
- Encourage homeowner implementation of defensible space standards (see Appendix J)
- Ensure communication and collaboration for fire mitigation work in the area includes the USFS and all lessees and permit holders who operate businesses in the area

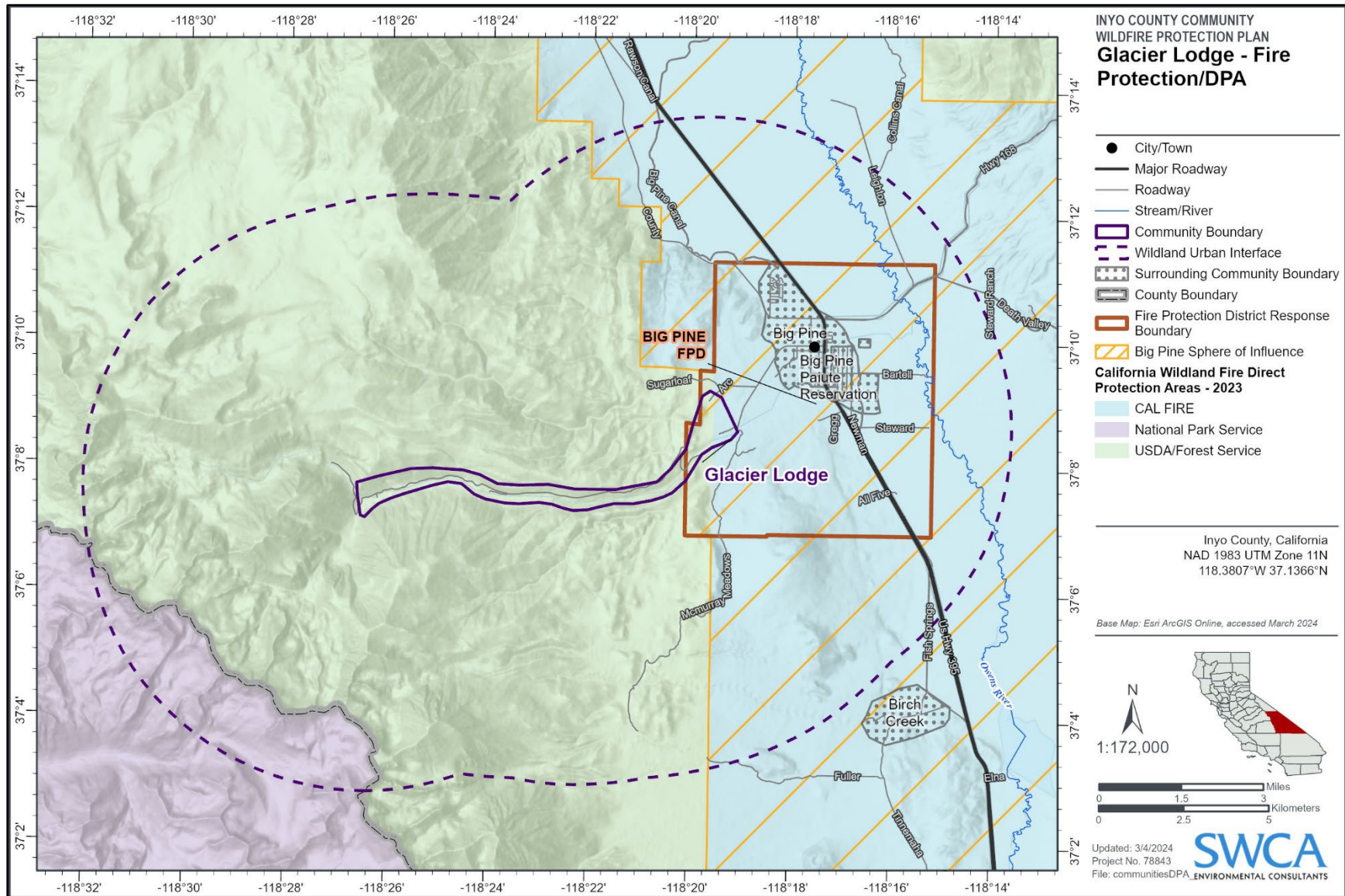


Figure D.36. Direct protection area and fire protection district boundary around Glacier Lodge.

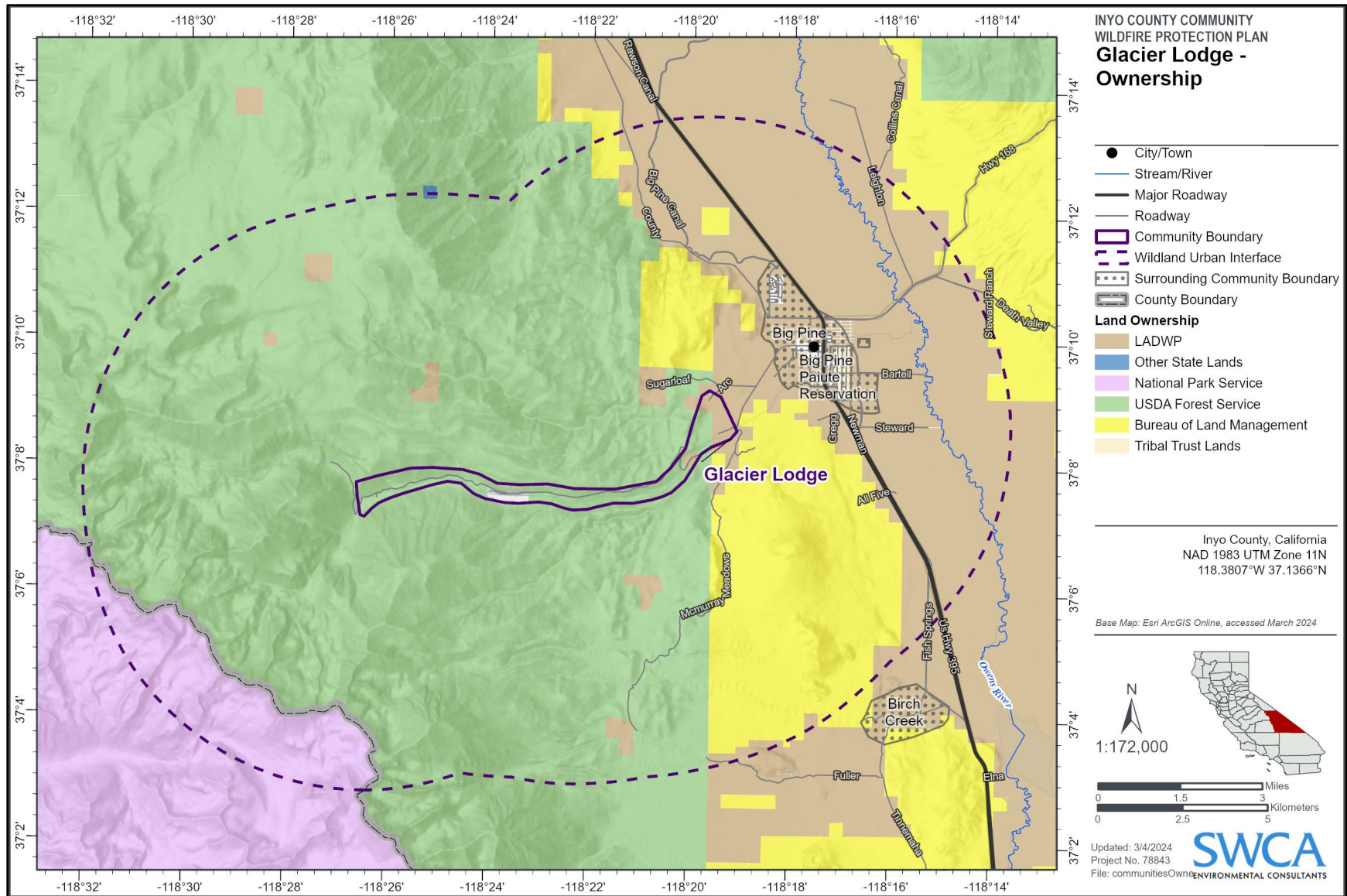


Figure D.37. Land ownership around Glacier Lodge.

KEOUGH HOT SPRINGS

Community Background

Community Name: Keough Hot Springs **Total Score:** 77 (High) **Land Area (acres):** 150

Fire Protection District Status: Within the SOI of Big Pine Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Main access road is relatively wide and surfaced
- Light fuel loading on the west side
- Easily accessible to fire response with wide roads for trucks to turn around
- Reflective street signs
- Defensible space is acceptable
- Low angle slopes around structures
- Water tanks present

Negative Attributes (High Scores)

- Exposed to heavy shrub fuels to the east, north, and south
- One road in and out
- Complex topography
- Combustible roofing and siding material
- Limited setback
- Station is far from community
- Both electric and water utilities are aboveground
- No water

Suggested Recommendations

- Maintain roadside clearance along Keough Hot Springs Rd
- Develop agreements with LADWP to permit communities, fire safe councils, and private landowners to expand and maintain fuel breaks around the east, north, and south perimeters on LADWP property
- Conduct outreach about defensible space
- Assess community capacity for defensible space implementation to determine needs
- Maintain water tanks full and ensure that fittings are accessible
- Encourage homeowner/property owner implementation of defensible space standards (see Appendix J)

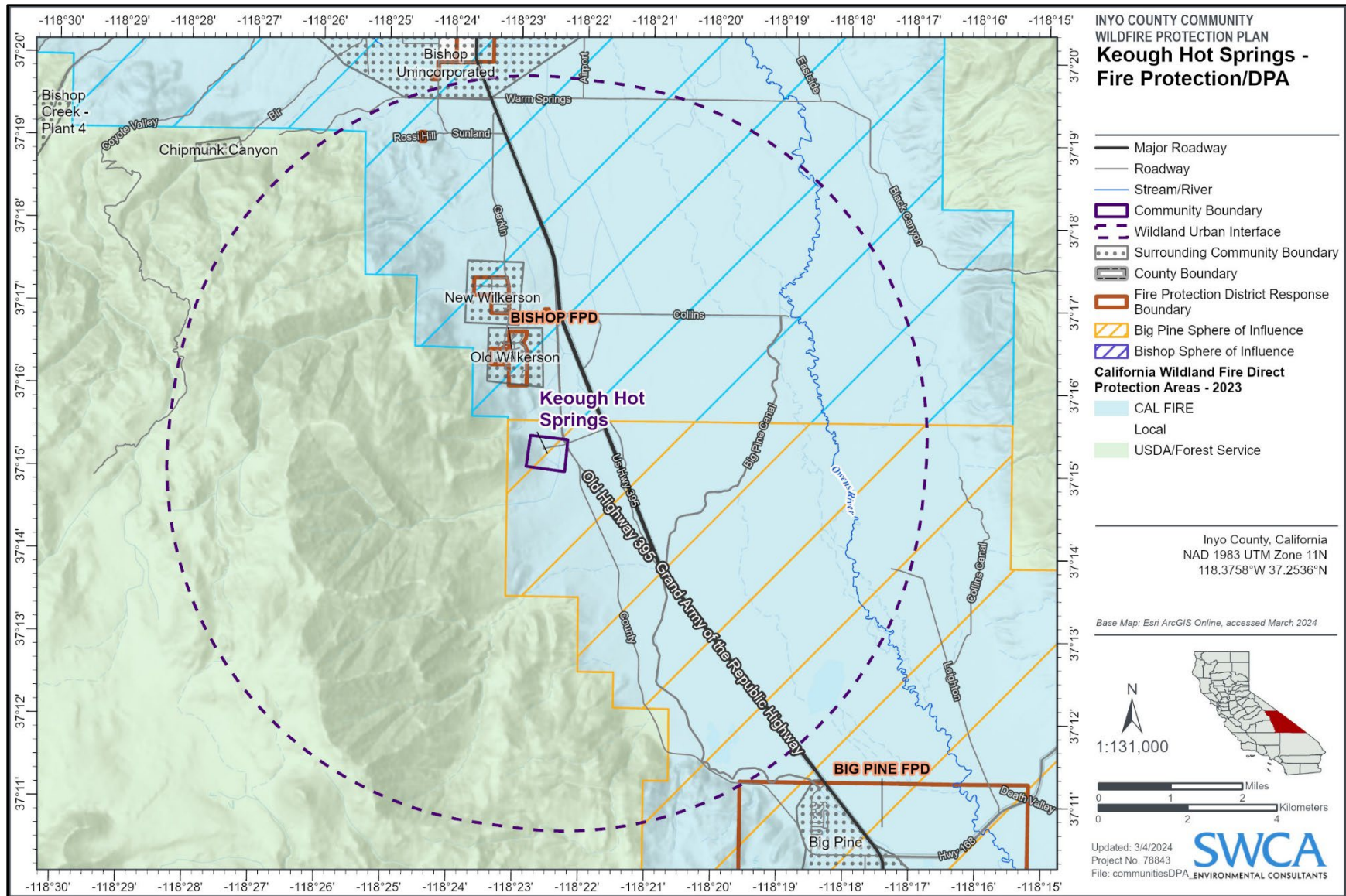


Figure D.38. Direct protection area and fire protection district boundary around Keough Hot Springs.

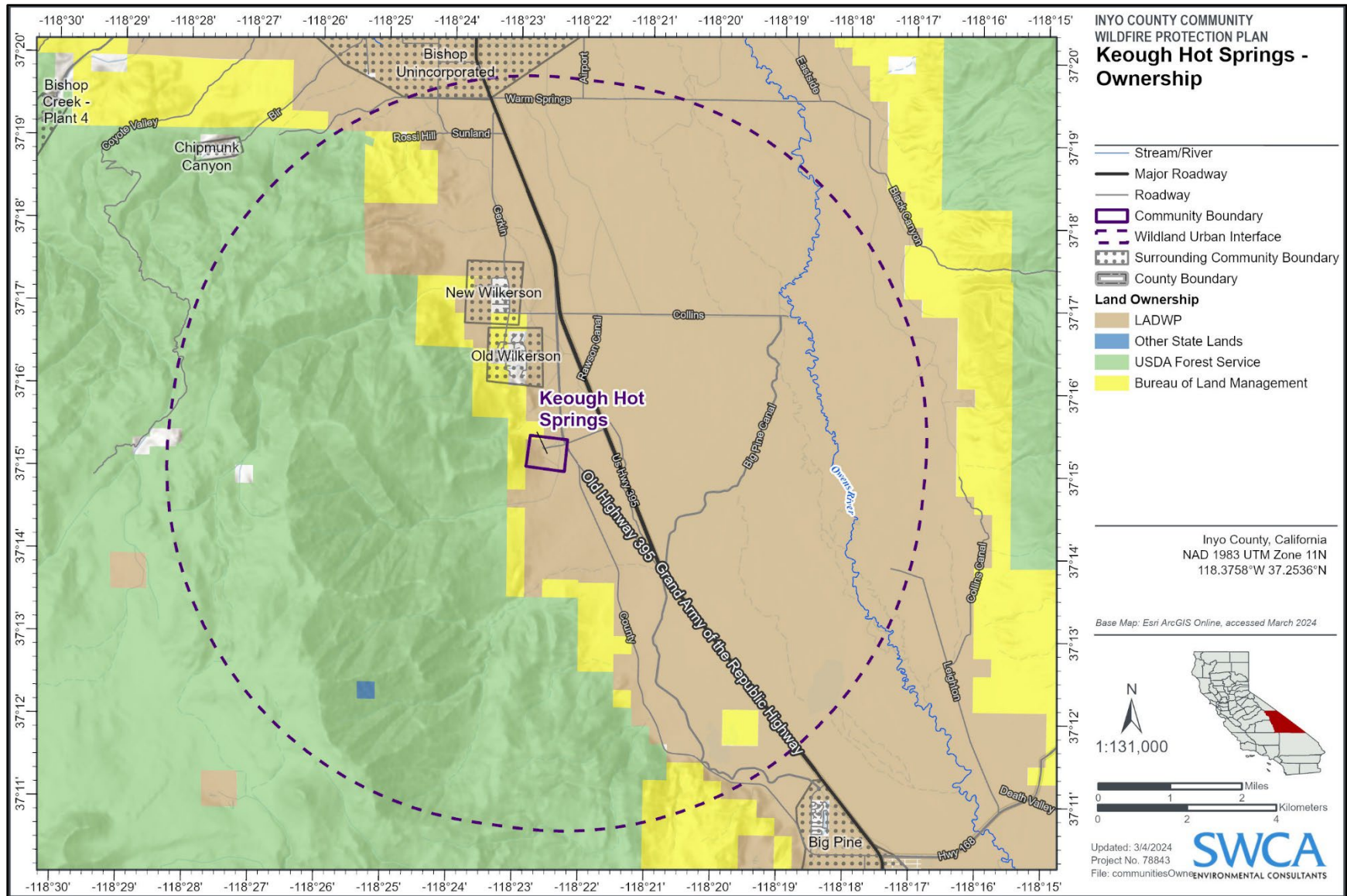


Figure D.39. Land ownership around Keough Hot Springs.

NEW WILKERSON

Community Background

Community Name: New Wilkerson **Total Score:** 59 (Moderate) **Land Area (acres):** 382
Fire Protection District Status: Within the jurisdiction of Bishop Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)	Negative Attributes (High Scores)
<ul style="list-style-type: none"> • 2 or more roads in and out • Relatively flat and wide surfaced roads • Easily accessible to fire response, allowing for vehicles to turn around • Reflective street signs • Low angle slopes around structures • Hydrants present (3 total; 1 is not working, the other two have low flow rates) • Maintained yards • Mowed fuel break on one side 	<ul style="list-style-type: none"> • Limited defensible space for most structures • Combustible roof, deck, fencing, and siding materials • Structures in proximity to slope • Fire station >5 miles from community • Gas and electric lines are aboveground • Dead ends within community • Dispersed camping in prevalent in the area • Exposed to downslope and upslope riparian fuels

Suggested Recommendations

- Repair defective hydrant and assess feasibility of increasing flow rate
- Investigate opportunities to create breaks in the continuity of downstream riparian fuels (Rawson Creek)
 - Rawson Creek is on LADWP property; CDFW has jurisdiction in riparian areas
- Engage community to explore options for water resource development
- Fix the leaking water storage tank on Gerkin Rd
- Identify alternative evacuation routes and/or temporary refuge areas
- Reestablish the Wilkerson Fire Safe Council
- BLM to maintain existing community perimeter fuel breaks
- Develop agreements with LADWP to permit communities, fire safe councils, and private landowners to create and maintain fuel breaks on LADWP property
- Conduct outreach to inform residents about home hardening and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)

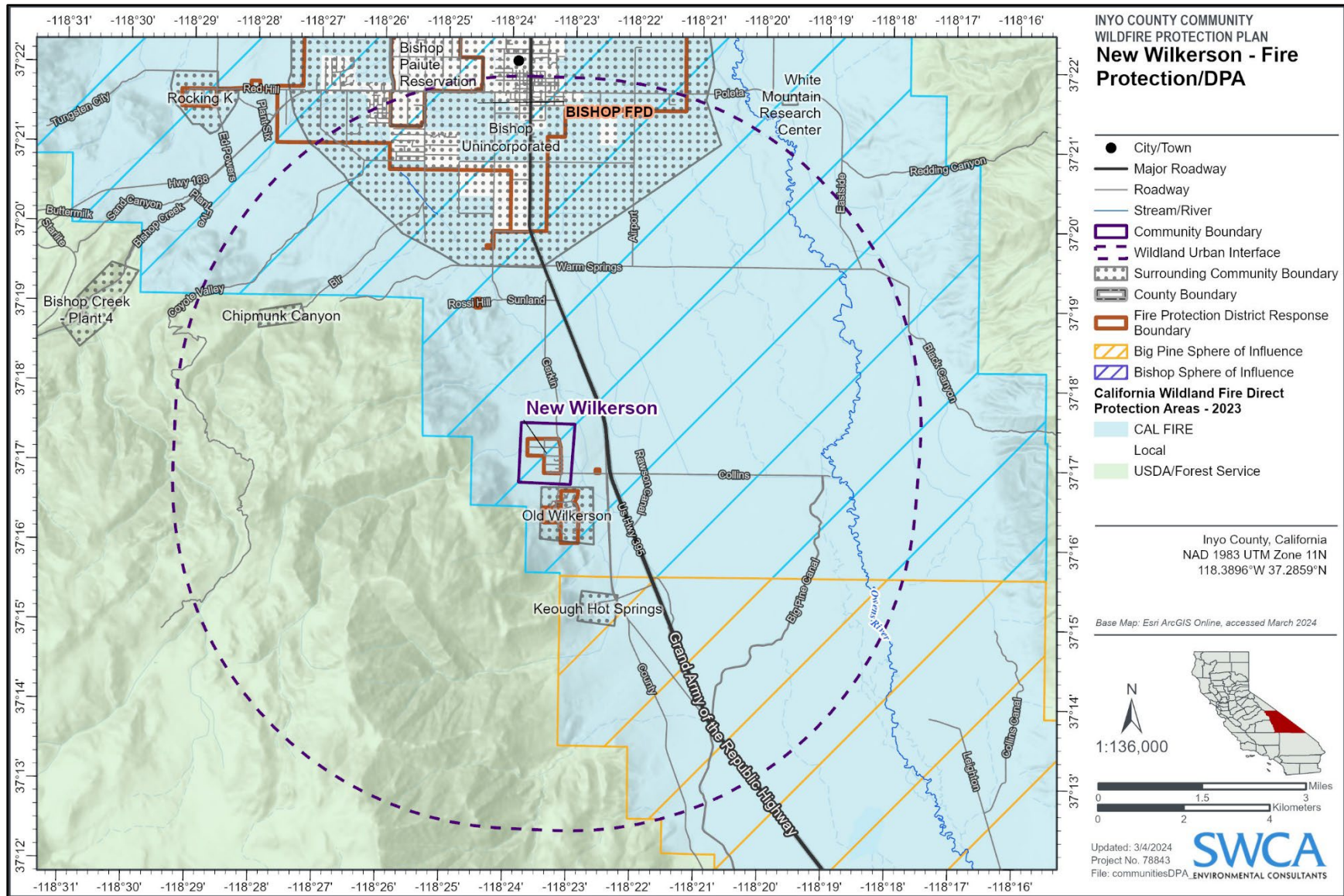


Figure D.40. Direct protection area and fire protection district boundary around New Wilkerson.

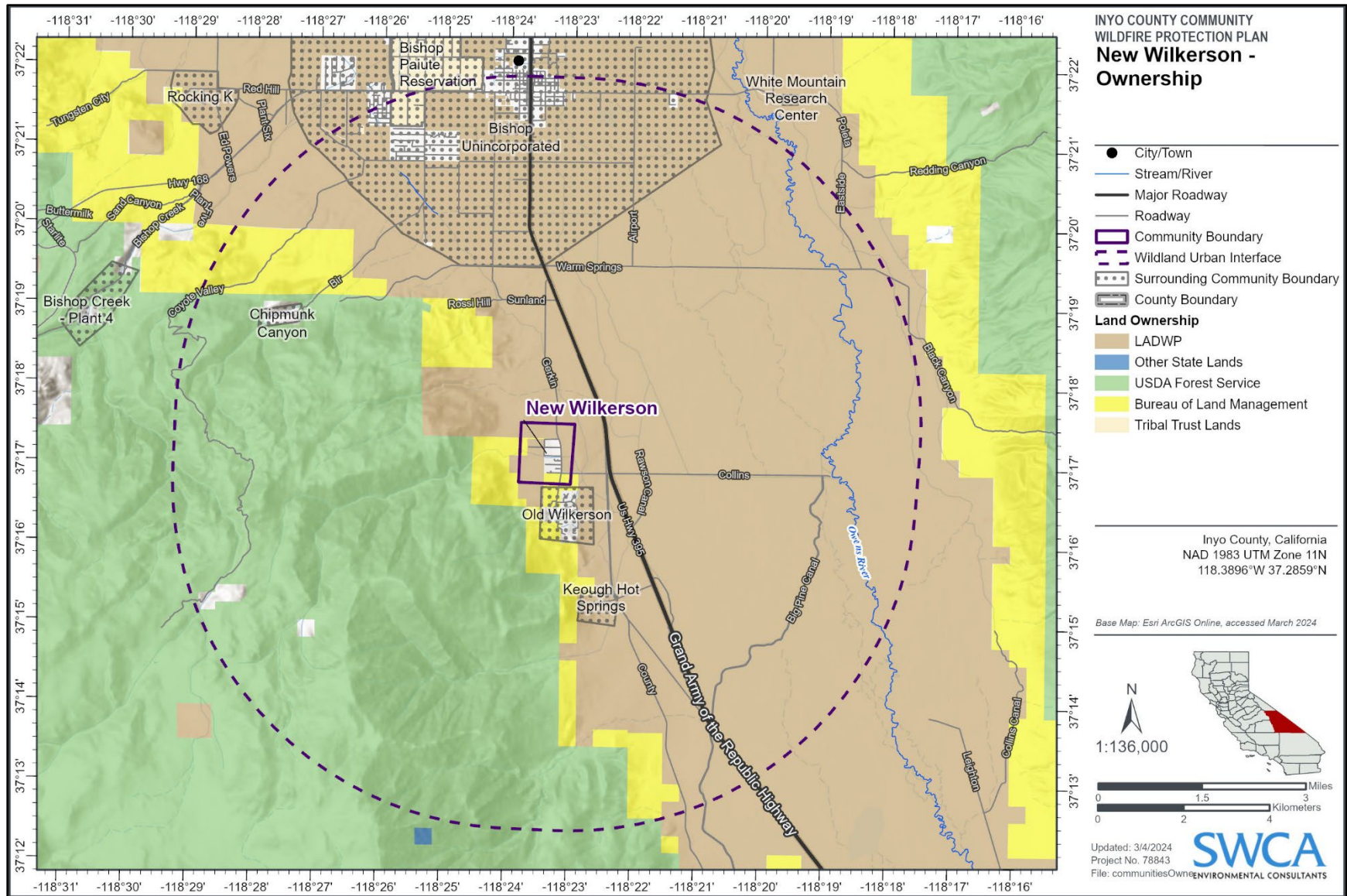


Figure D.41. Land ownership around New Wilkerson.

OLD WILKERSON

Community Background

Community Name: Old Wilkerson **Total Score:** 76(High) **Land Area (acres):** 424
Fire Protection District Status: Within the jurisdiction of Bishop Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Reflective street signs
- Low angle slopes around structures
- 2 Cisterns with uncertain condition; accessible ponds

Negative Attributes (High Scores)

- 1 road in and out
- Limited defensible space for most structures
- Long, narrow driveways
- Community is situated at the base of a mountain
- Many dead-end dirt roads within the community
- Low separation of adjacent structures
- Combustible roof, deck, fencing, and house siding
- Limited setback
- No hydrants or water tanks
- Fire station is >5 miles from the community
- Dispersed camping is prevalent in the area
- Exposed to upslope and downslope fuels

Suggested Recommendations

- Maintain cisterns full and ensure that fittings are accessible
- Engage community to explore options for water resource development
- Identify alternative evacuation routes and/or temporary refuge areas
- Reestablish the Wilkerson Fire Safe Council
- BLM to maintain existing community perimeter fuel breaks
- Develop agreements with LADWP to permit communities, fire safe councils, and private landowners to create and maintain fuel breaks on LADWP property
- Conduct outreach to inform residents about home hardening and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)

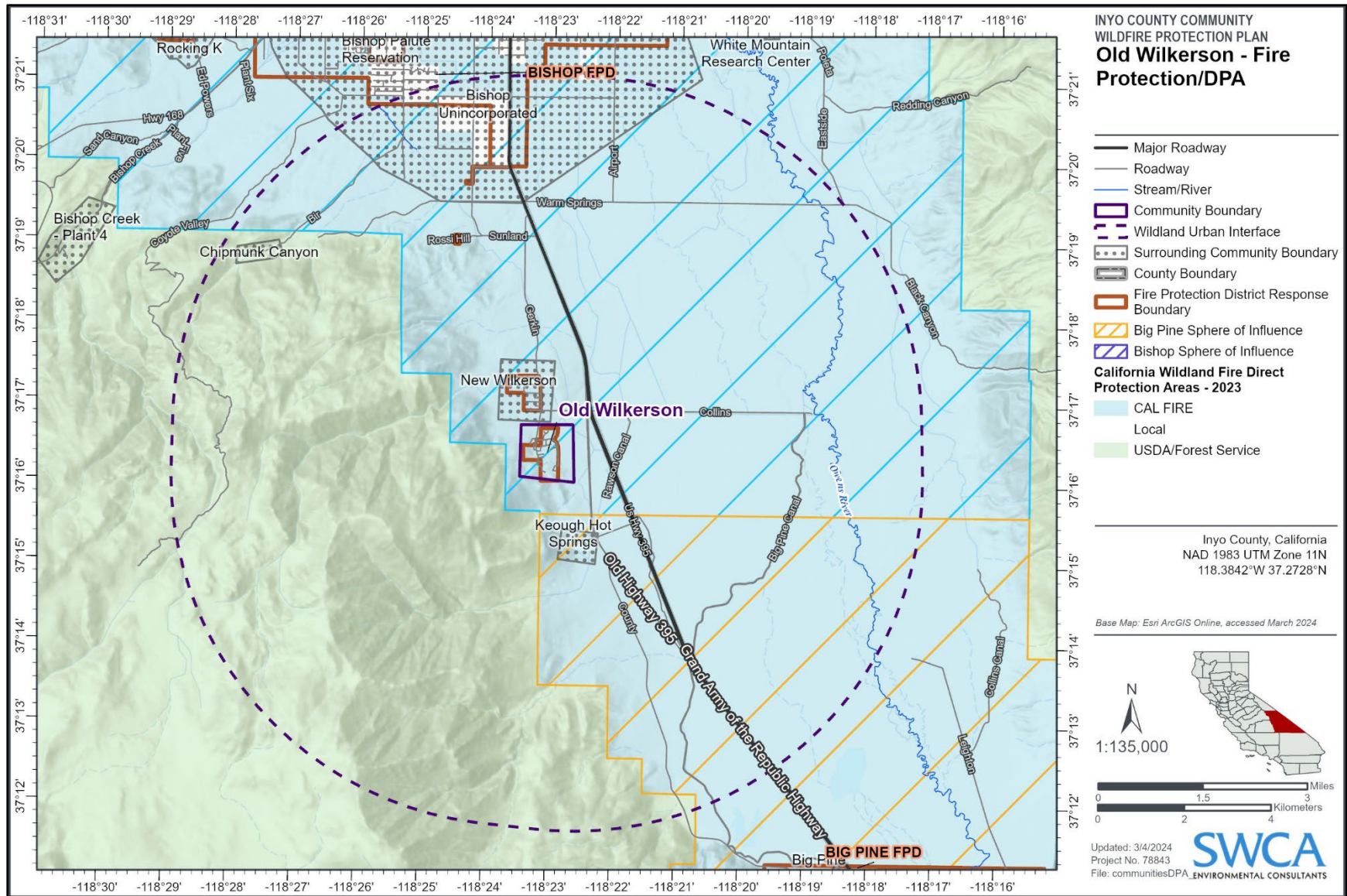


Figure D.42. Direct protection area and fire protection district boundary around Old Wilkerson.

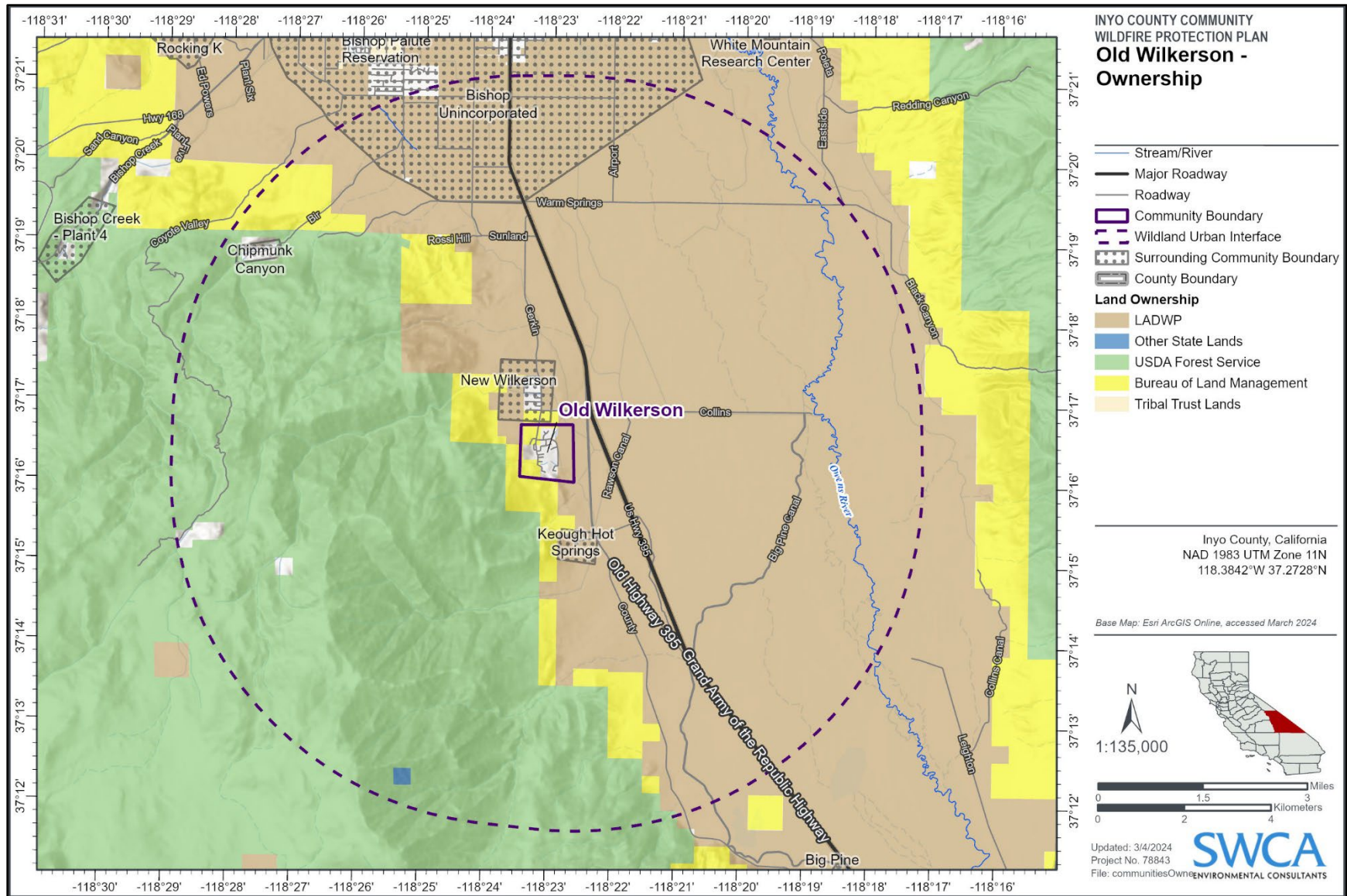


Figure D.43. Land ownership around Old Wilkerson.

GREATER LONE PINE

ALABAMA HILLS

Community Background

Community Name: Alabama Hills **Total Score:** 84 (High) **Land Area (acres):** 1,800
Fire Protection District Status: Within the jurisdiction of Lone Pine Volunteer Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Reflective street signs
- Good separation of adjacent structures
- Defensible space is acceptable

Negative Attributes (High Scores)

- Predominantly combustible deck, fence, siding, and roofing materials
- Medium to high angle slopes around structures
- Electric and gas utilities aboveground
- Complex topography
- Limited water availability
- A couple of dead-end roads within the community

Suggested Recommendations

- Continue to maintain roadside clearance on main access roads
- Explore options to install hydrants or strategic placement of additional water tanks
- Conduct outreach to inform residents about home hardening
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Install directional signage for local access dead-end roads
- Investigate opportunities to create breaks in the continuity of upstream riparian fuels
- Lavender Farm:
 - Maintain fuel breaks
 - Clear out all the dead and down vegetation in the gully to the west of the farm
 - Collaborate with farm owner to host classes on evacuation, readiness, and defensible space

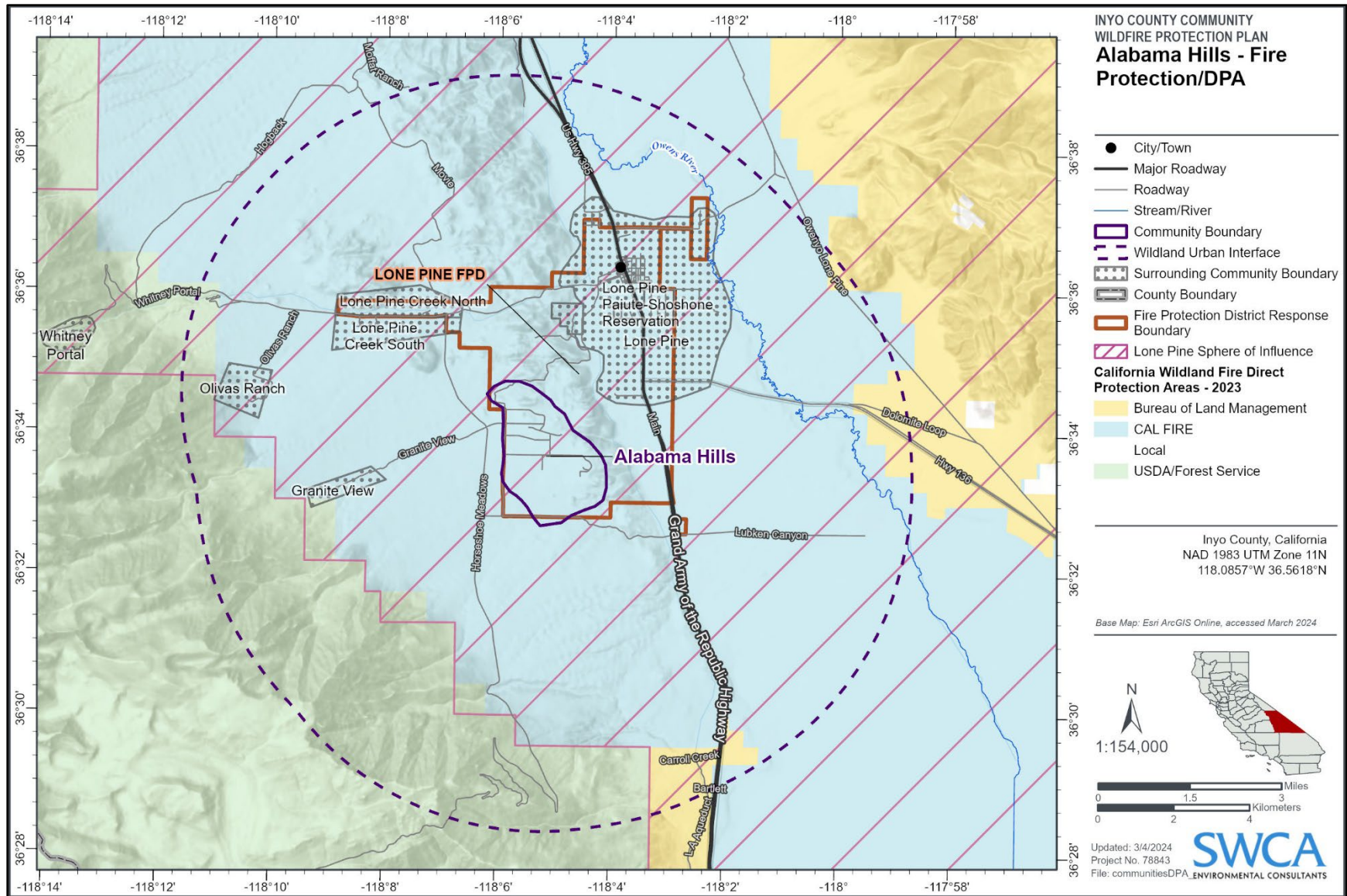


Figure D.44. Direct protection area and fire protection district boundary around Alabama Hills.

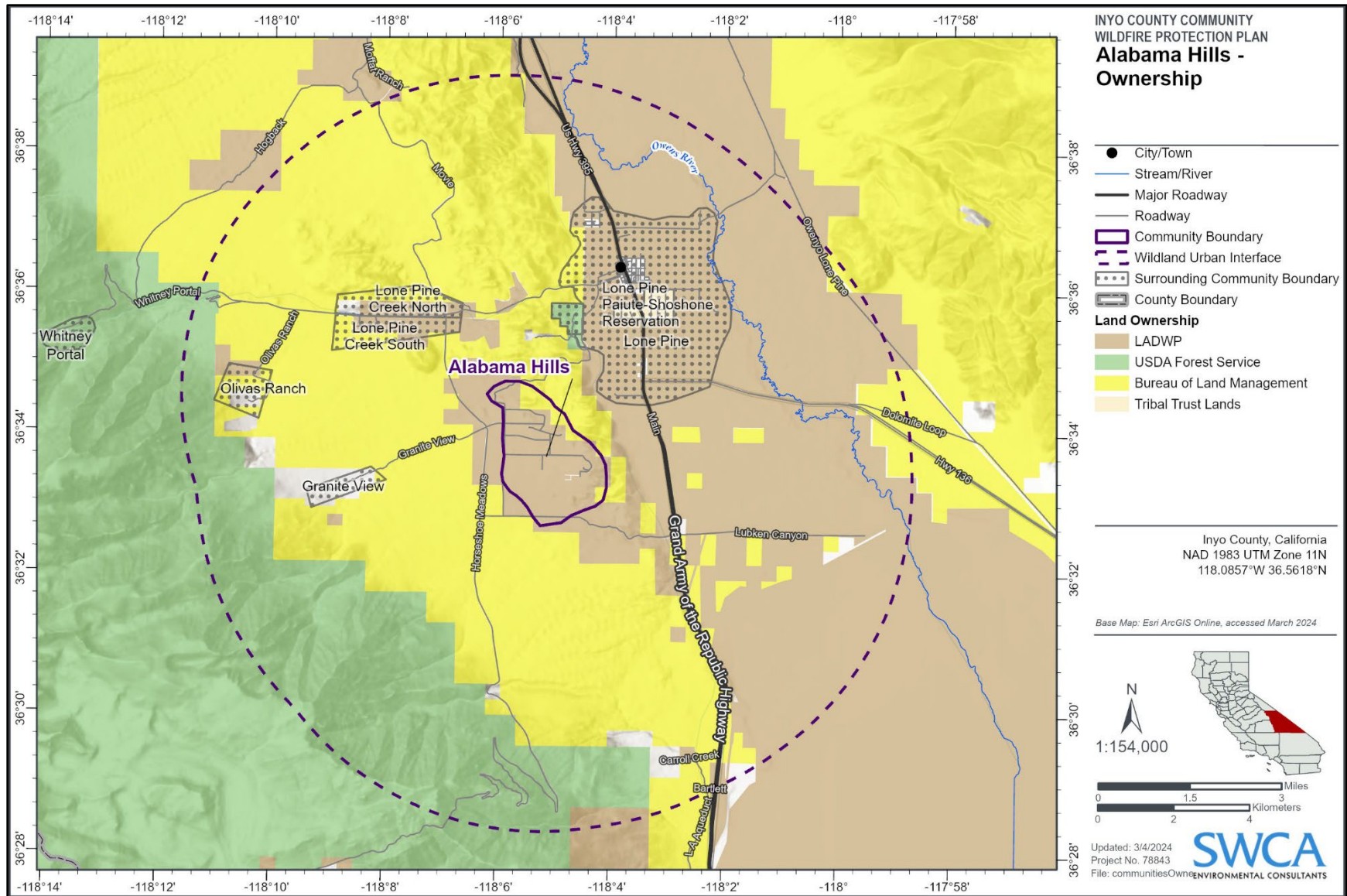


Figure D.45. Land ownership around Alabama Hills.

GRANITE VIEW

Community Background

Community Name: Granite View **Total Score:** 81 (high) **Land Area (acres):** 228
Fire Protection District Status: Within the SOI of Lone Pine Volunteer Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)	Negative Attributes (High Scores)
<ul style="list-style-type: none"> • Good separation of adjacent structures • Some structures with metal roofs • Reflective street signs present • Recent fuel breaks around the community and residences • Community has established an agreement to allow the FPD to use private water tanks for fire protection • Defensible space is acceptable 	<ul style="list-style-type: none"> • 1 road in and out • Medium to high angle slopes around structures • Complex topography • Combustible house siding • Community is far away from fire response resources • Gas utilities aboveground • Limited water resources • Community is situated at the base of mountains

Suggested Recommendations

- Continue fuel reduction efforts within and around the community
- Maintain the fuel break treated in 2023
- Continue to host green waste disposal (chipper) days
- Continue and expand existing water agreements and efforts
- Continue community meetings and defensible space efforts
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Identify alternative evacuation routes and/or temporary refuge areas
- Develop a community evacuation plan
- Reduce fuel loading along private driveways
- Maintain water tanks full and ensure that fittings are accessible
- Collaborate with local safety officials, fire departments, wildland fire agencies, and private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use

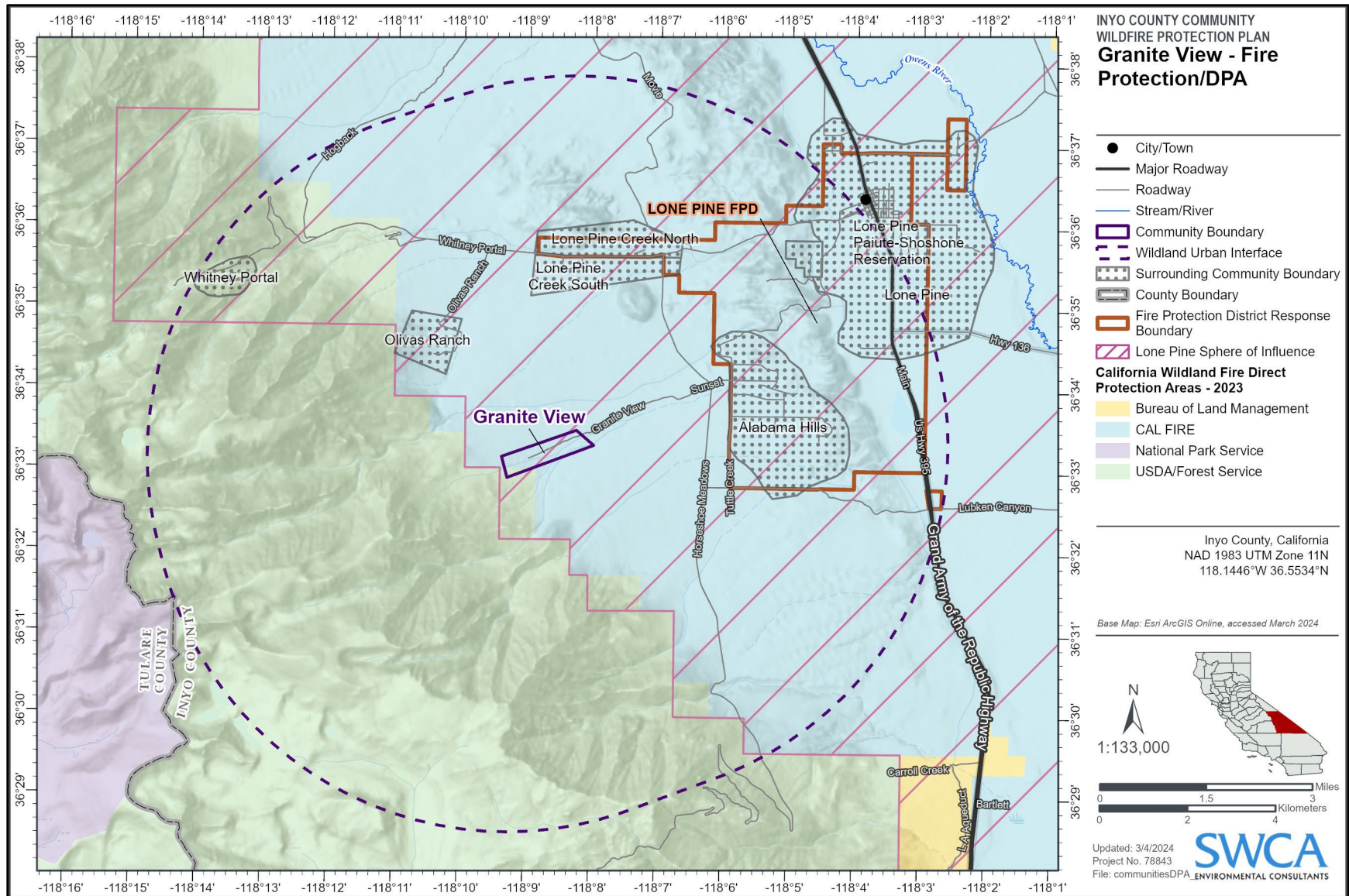


Figure D.46. Direct protection area and fire protection district boundary around Granite View.

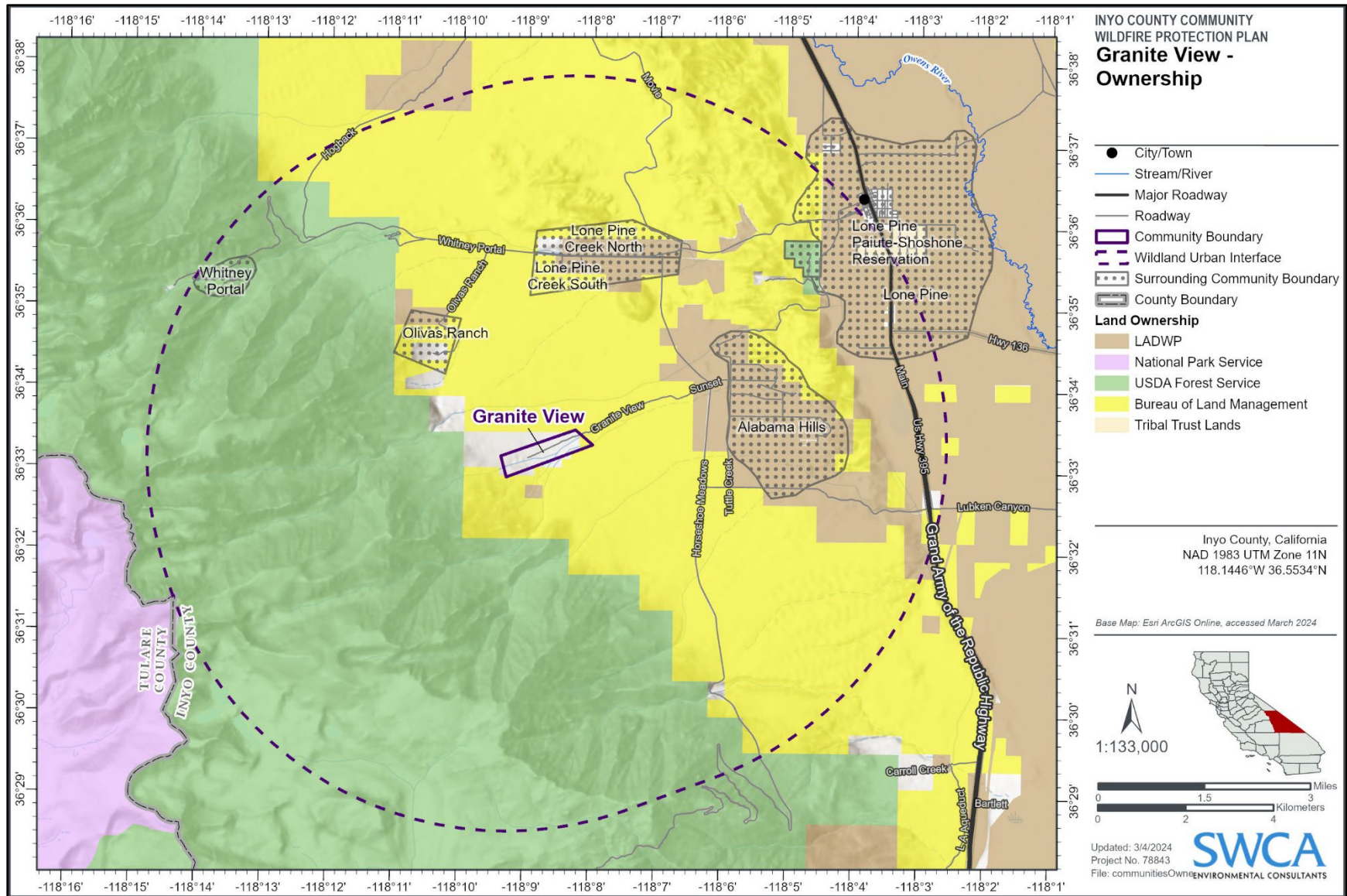


Figure D.47. Land ownership around Granite View.

LONE PINE

Community Background

Community Name: Lone Pine **Total Score:** 71 (High) **Land Area (acres):** 4216

Fire Protection District Status: Within the jurisdiction of Lone Pine Volunteer Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Relatively flat, wide, surfaced roads
- Reflective street signs
- 2 or more roads in and out
- Low angle slopes around structures
- Good setback
- Hydrants present
- Fire station within the community

Negative Attributes (High Scores)

- Defensible space could use improvement (branches resting on rooftops)
- Combustible roof, deck, fence and siding materials
- Poor separation of structures
- Gas and electric lines are aboveground

Suggested Recommendations

- Develop agreements with LADWP to permit communities, fire safe councils, and private landowners to create and maintain perimeter fuel breaks on LADWP property
- Continue to maintain roadside clearance
- Conduct outreach to inform residents about home hardening and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Investigate opportunities to create breaks in the continuity of riparian fuels (Lone Pine Creek) in the west side of the community
 - Lone Pine Creek is on LADWP property; CDFW has jurisdiction in riparian areas
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)

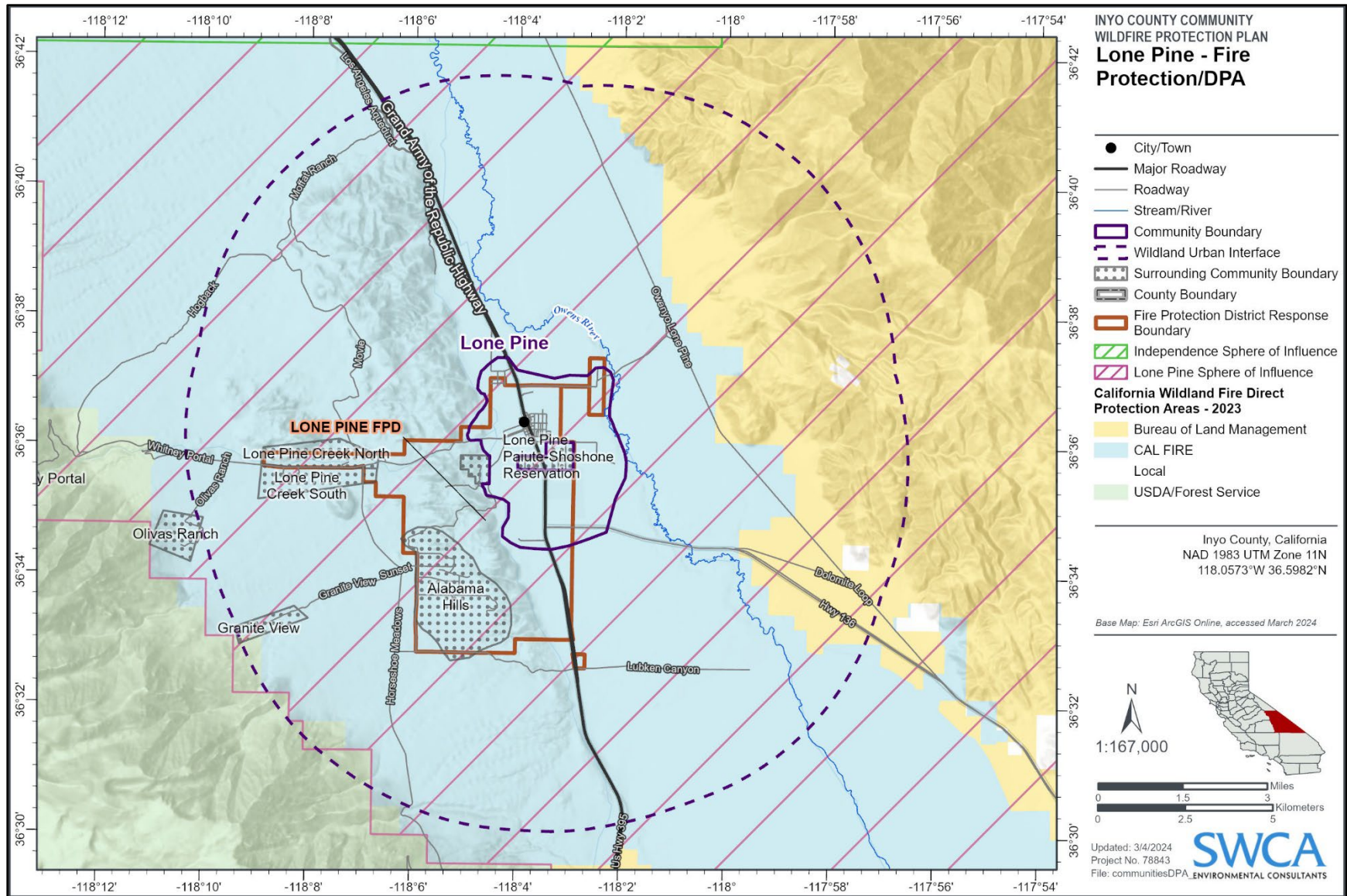


Figure D.48. Direct protection area and fire protection district boundary around Lone Pine.

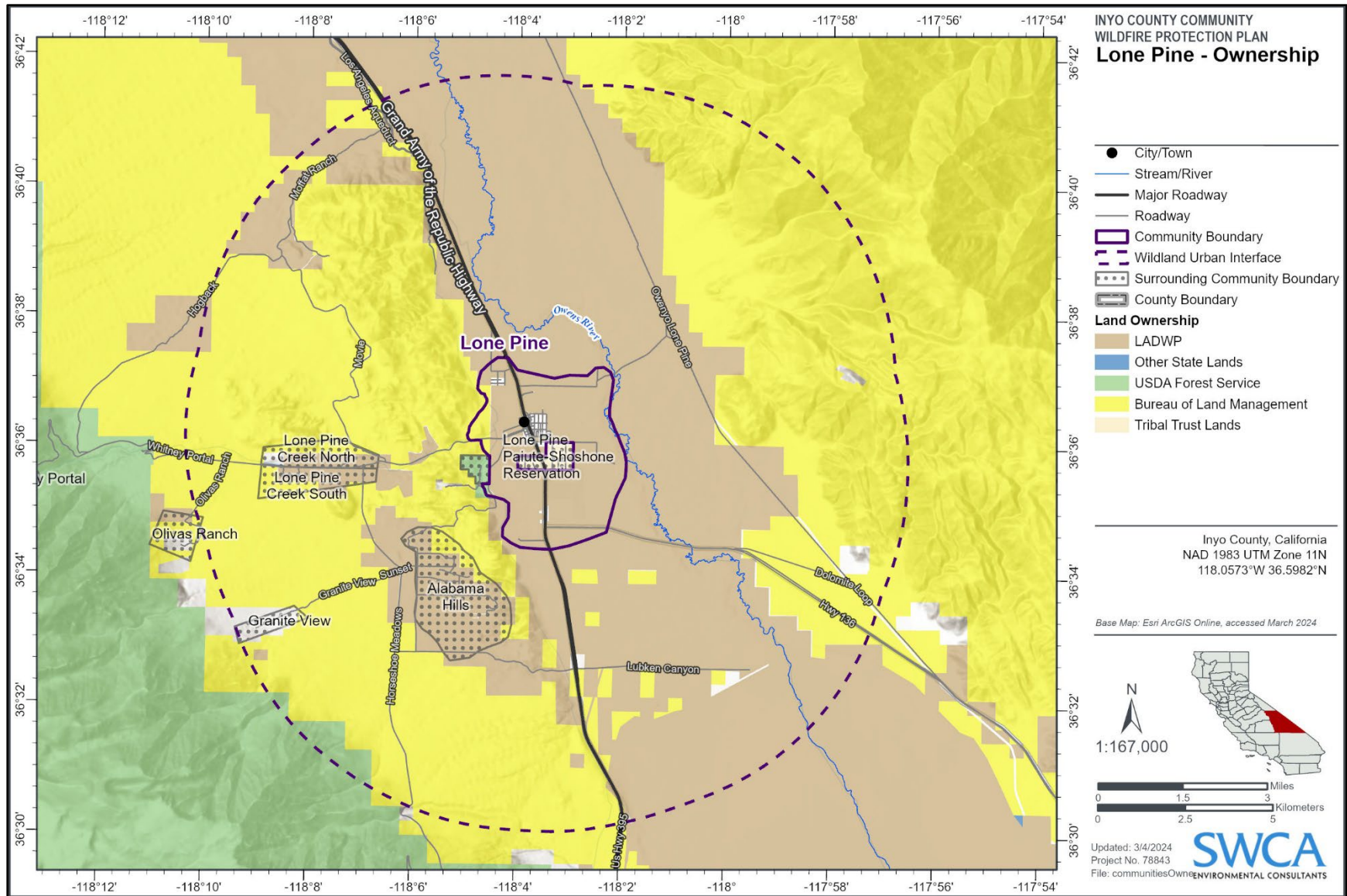


Figure D.49. Land ownership around Lone Pine.

LONE PINE CREEK NORTH

Community Background

Community Name: Lone Pine Creek North **Total Score:** 116 (Extreme) **Land Area (acres):** 1071

Fire Protection District Status: Within the jurisdiction of Lone Pine Volunteer Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Reflective street signs
- 2 or more roads in and out
- Fire station near community
- Good separation of structures

Negative Attributes (High Scores)

- Properties are situated along the creek with dense riparian fuels
- Poor defensible space for most structures
- Medium to high angle slopes around structures
- Combustible roof, deck/fence, and house siding materials
- Limited setback
- Gas and electric lines are aboveground
- Narrow roads making vehicle access difficult
- No developed water source

Suggested Recommendations

- Investigate opportunities to create breaks in the continuity of upstream and downstream riparian fuels
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Identify alternative evacuation routes and/or temporary refuge areas
- Develop a community evacuation plan
- Thin and reduce fuels on slopes immediately adjacent to properties (targeting areas with higher fuel loads)
- Engage community to explore options for water resource development
- Conduct outreach to inform residents about evacuation, home hardening, and defensible space
- Assess community capacity for defensible space implementation to determine needs
- Collaborate with local safety officials, fire departments, wildland fire agencies, and private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use
- Encourage homeowner implementation of defensible space standards (see Appendix J)

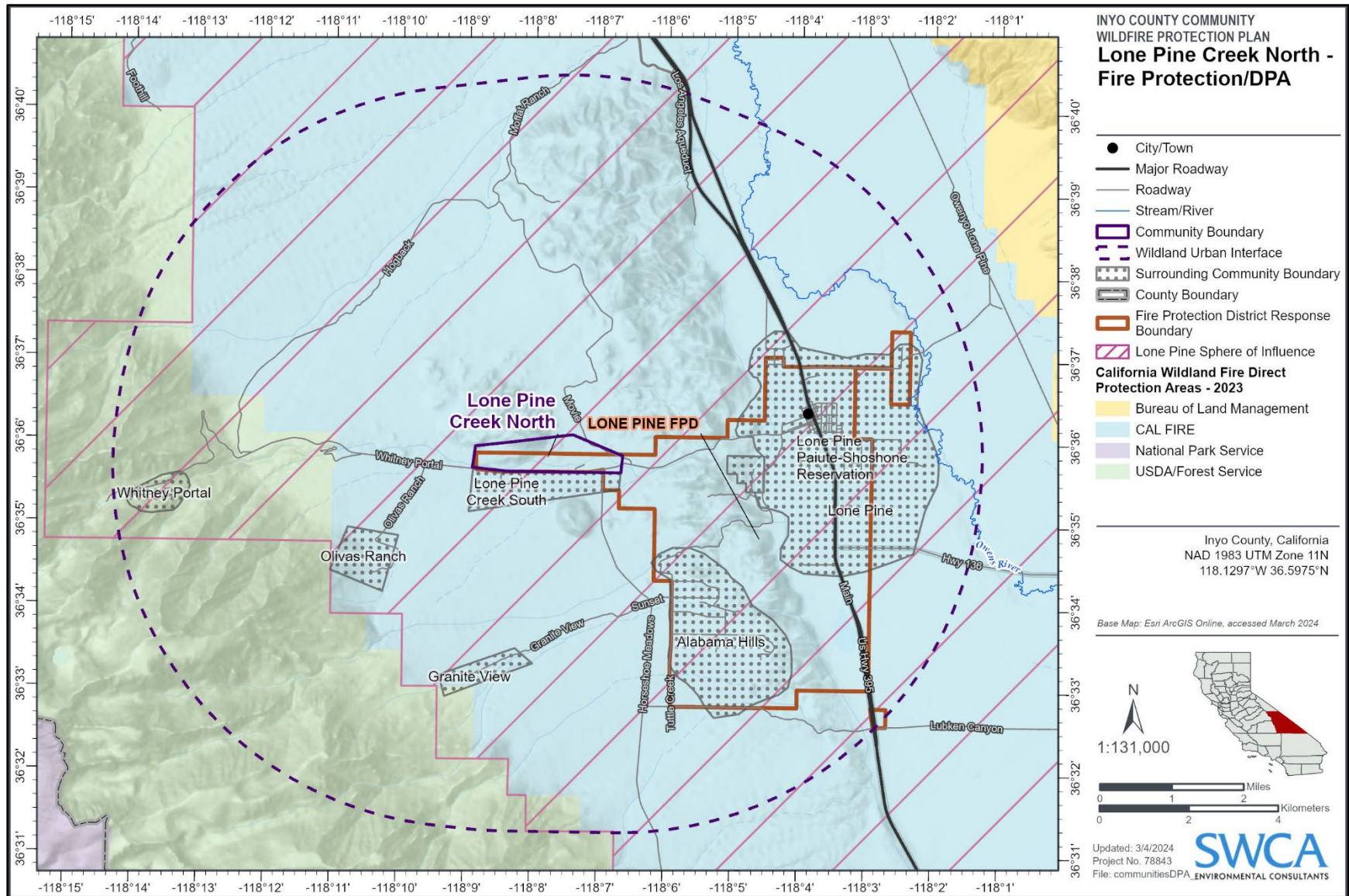


Figure D.50. Direct protection area and fire protection district boundary around Lone Pine Creek North.

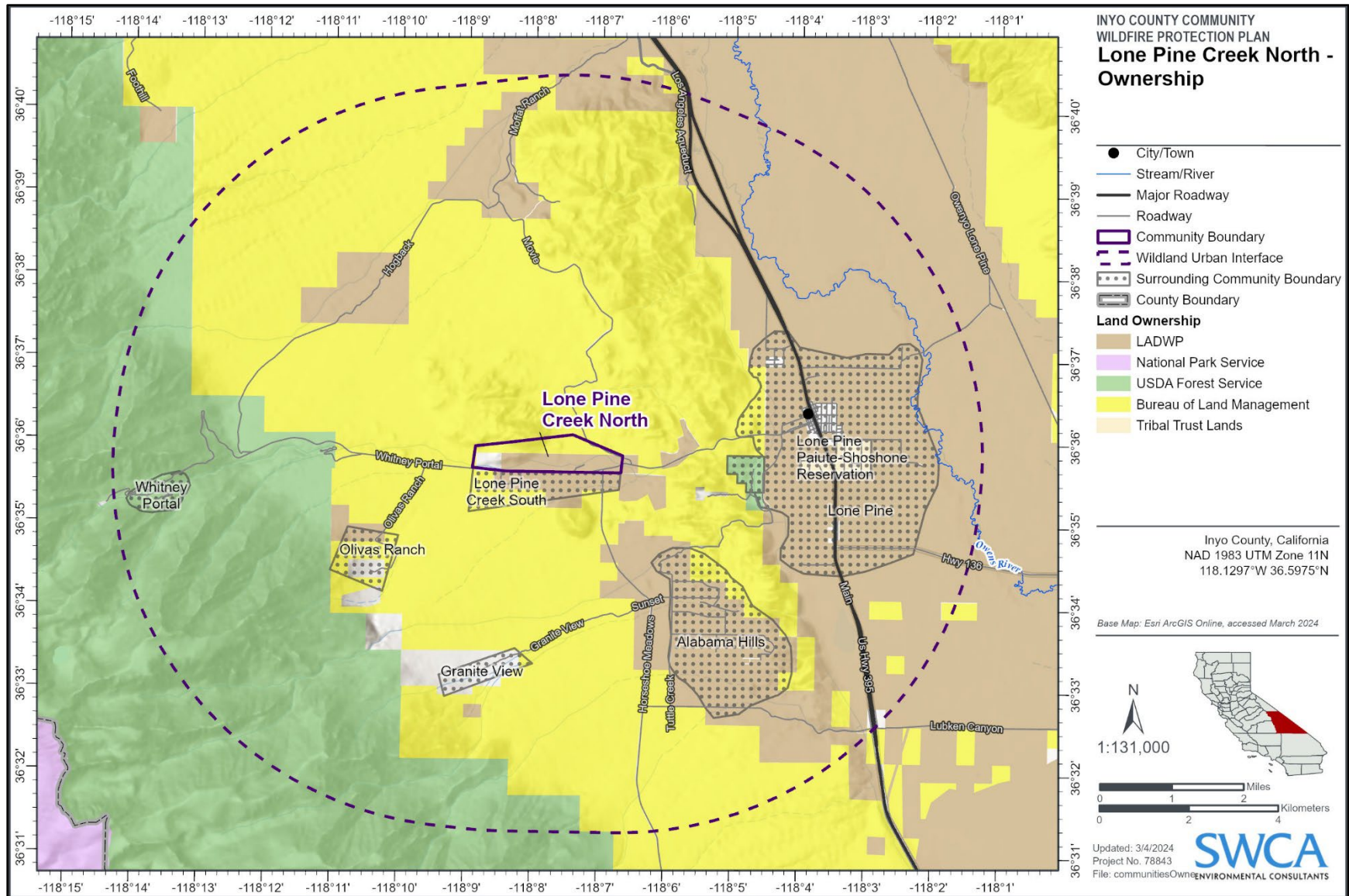


Figure D.51. Land ownership around Lone Pine Creek North.

LONE PINE CREEK SOUTH

Community Background

Community Name: Lone Pine Creek South **Total Score:** 53 (Moderate) **Land Area (acres):** 1071

Fire Protection District Status: Within the jurisdiction of Lone Pine Volunteer Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Water source present (water tank)
- Light fuel loading (shrub)
- Newer construction (hardened)
- Relatively wide, flat, and paved roads
- Reflective street signs
- Good defensible space

Negative Attributes (High Scores)

- Electric and gas utilities aboveground

Suggested Recommendations

- Continue to encourage the use of hardened construction materials for all new development
- Continue to maintain defensible space
- Maintain full water tanks and ensure that fittings are accessible

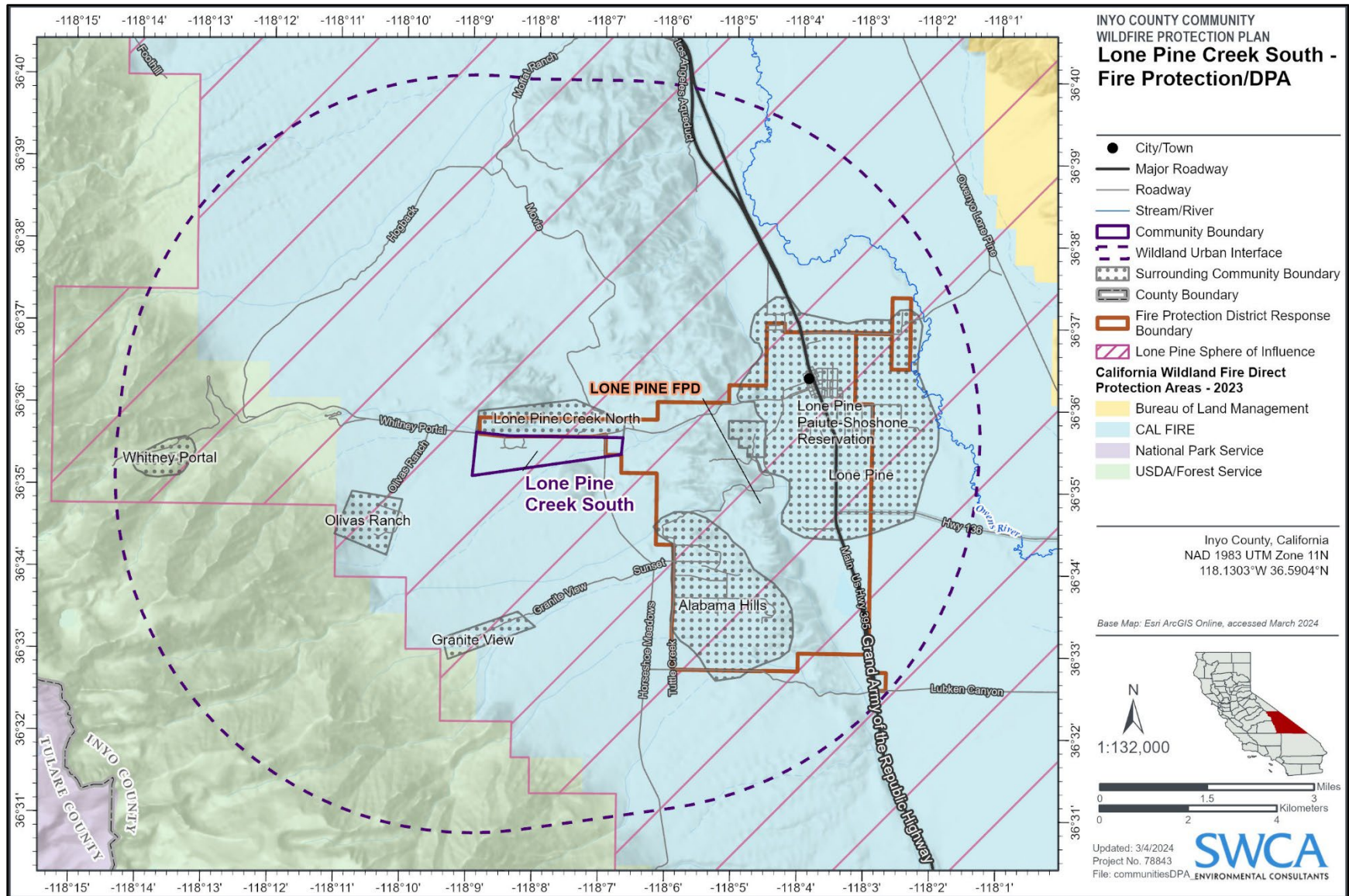


Figure D.52. Direct protection area and fire protection district boundary around Lone Pine Creek South.

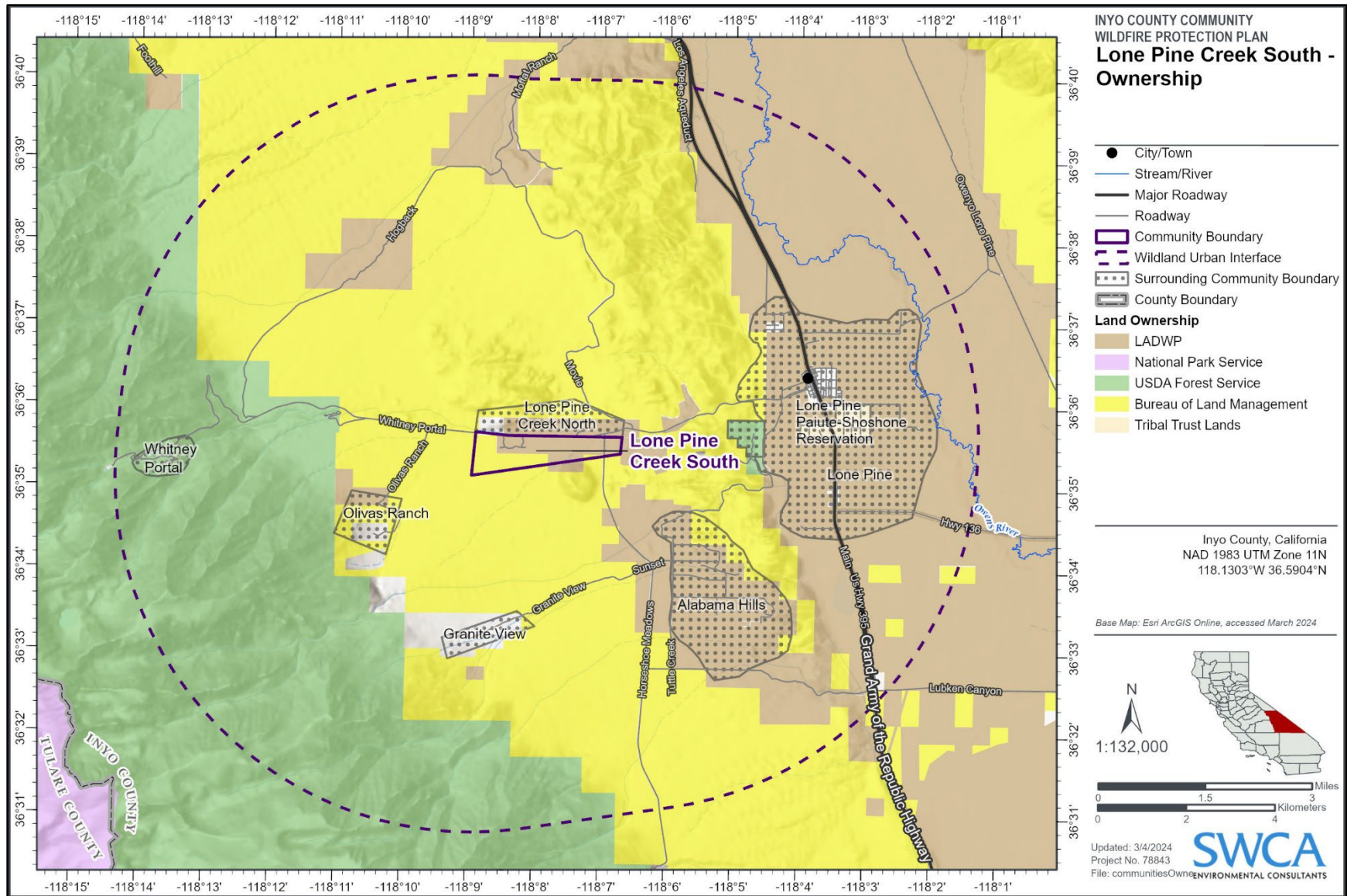


Figure D.53. Land ownership around Lone Pine Creek South.

LONE PINE PAIUTE-SHOSHONE TRIBE

Community Background

Community Name: Lone Pine Paiute-Shoshone Tribe **Total Score:** 79 (High) **Land Area (acres):** 361
Fire Protection District Status: Within the jurisdiction of Lone Pine Volunteer Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Relatively flat, wide, and surfaced roads
- Low angle slopes around structures
- Good separation of structures
- Fire station near community

Negative Attributes (High Scores)

- Poor defensible space for most structures; ladder fuels
- Complex topography/terrain
- Gas and electric lines are aboveground
- Combustible roof and siding materials
- A couple of dead end streets within community
- Some properties with excess rubbish and debris
- Hydrants
- 2 or more roads in and out
- Reflective street signs
- Inadequate fire flows

Suggested Recommendations

- Maintain rights-of-way clear of encroaching vegetation
- Engage with tribal representatives to bolster education about defensible space and the dangers of excess yard debris
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Explore options to initiate debris cleanup events
- Develop agreements with LADWP to permit communities, fire safe councils, and private landowners to create and maintain perimeter fuel breaks on LADWP property
- Assess community capacity for defensible space implementation to determine needs
- Encourage assignment holder implementation of defensible space standards (see Appendix J)
- Upgrade home addressing
- Investigate and address inadequate fire flows

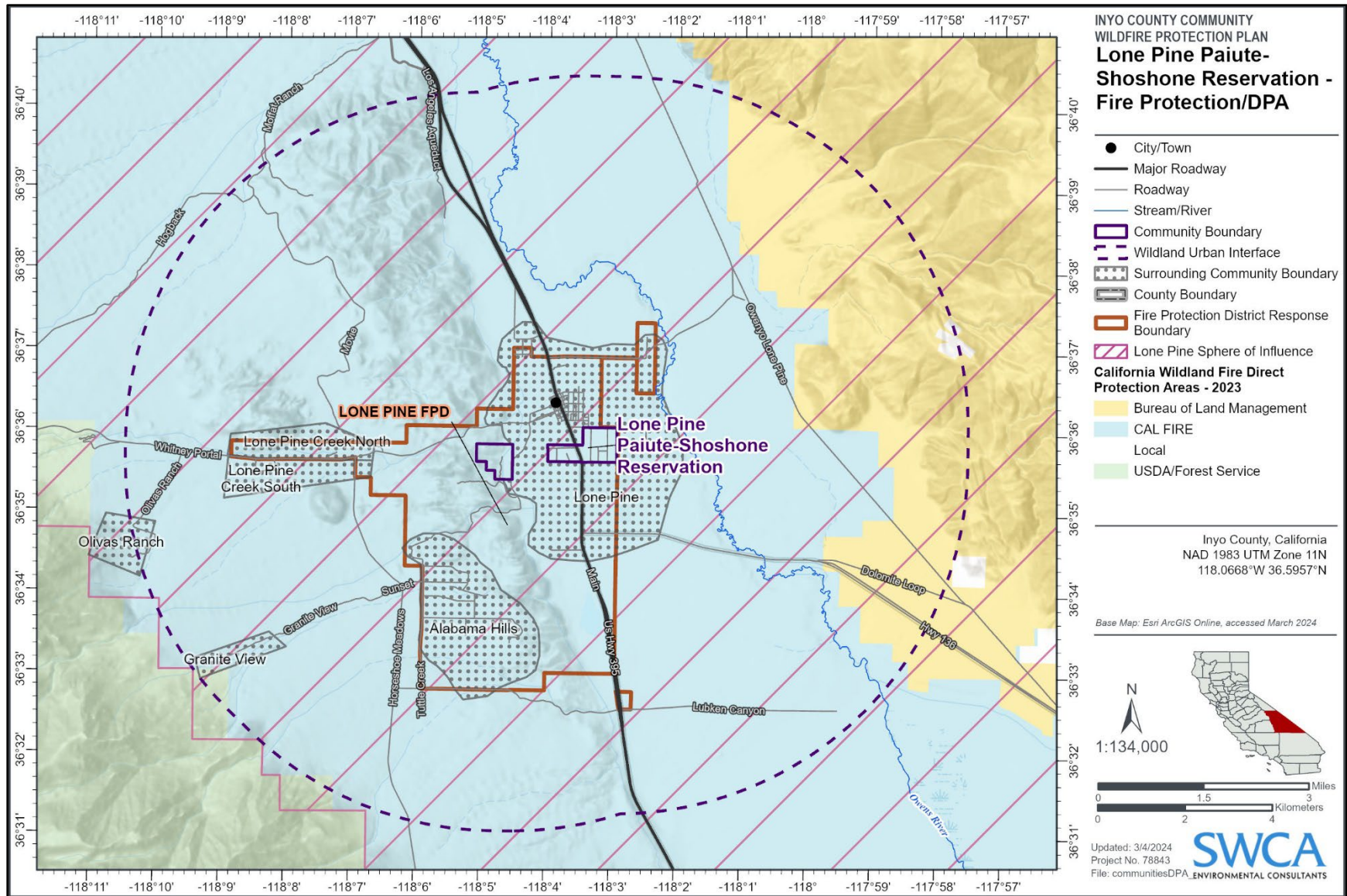


Figure D.54. Direct protection area and fire protection district boundary around Lone Pine Paiute-Shoshone Tribe.

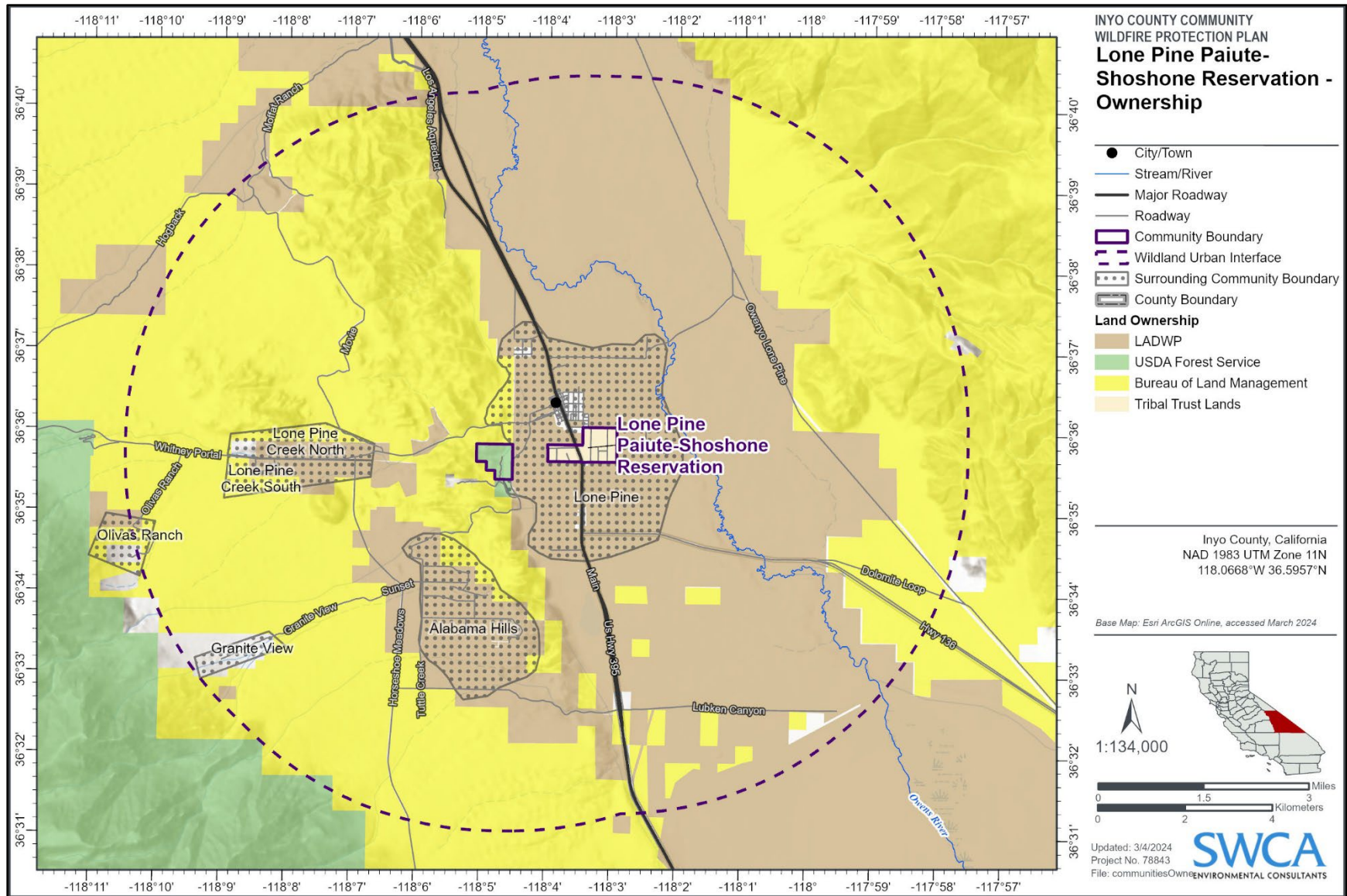


Figure D.55. Land ownership around Lone Pine Paiute-Shoshone Tribe.

OLIVAS RANCH

Community Background

Community Name: Olivas Ranch

Total Score: 95 (High)

Land Area (acres): 346

Fire Protection District Status: None

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Reflective street signs

Negative Attributes (High Scores)

- 1 road in and out, unpaved and narrow
- Properties are located along stream bed with riparian fuels
- Combustible roof, deck, fencing, and house siding materials
- Limited defensible space
- Limited setback
- No water sources
- Community is remote and isolated; far away from a fire station

Suggested Recommendations

- Engage community to explore options for water resource development
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Conduct outreach about evacuation planning procedures, defensible space, and home hardening
- Identify alternative evacuation routes and/or temporary refuge areas
- Collaborate with residents to investigate opportunities for installing turnarounds or widening the road
- Maintain and expand clearance along main evacuation corridors (Olivas Ranch Rd)
- Thin and reduce fuels on slopes immediately adjacent to properties
- Seek to establish fire protection agreements and strategies with the closest FPD or establish a nexus with the responding agency
- Assess community capacity for defensible space implementation to determine needs
- Collaborate with local safety officials, fire departments, wildland fire agencies, and private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use
- Encourage homeowner implementation of defensible space standards (see Appendix J)

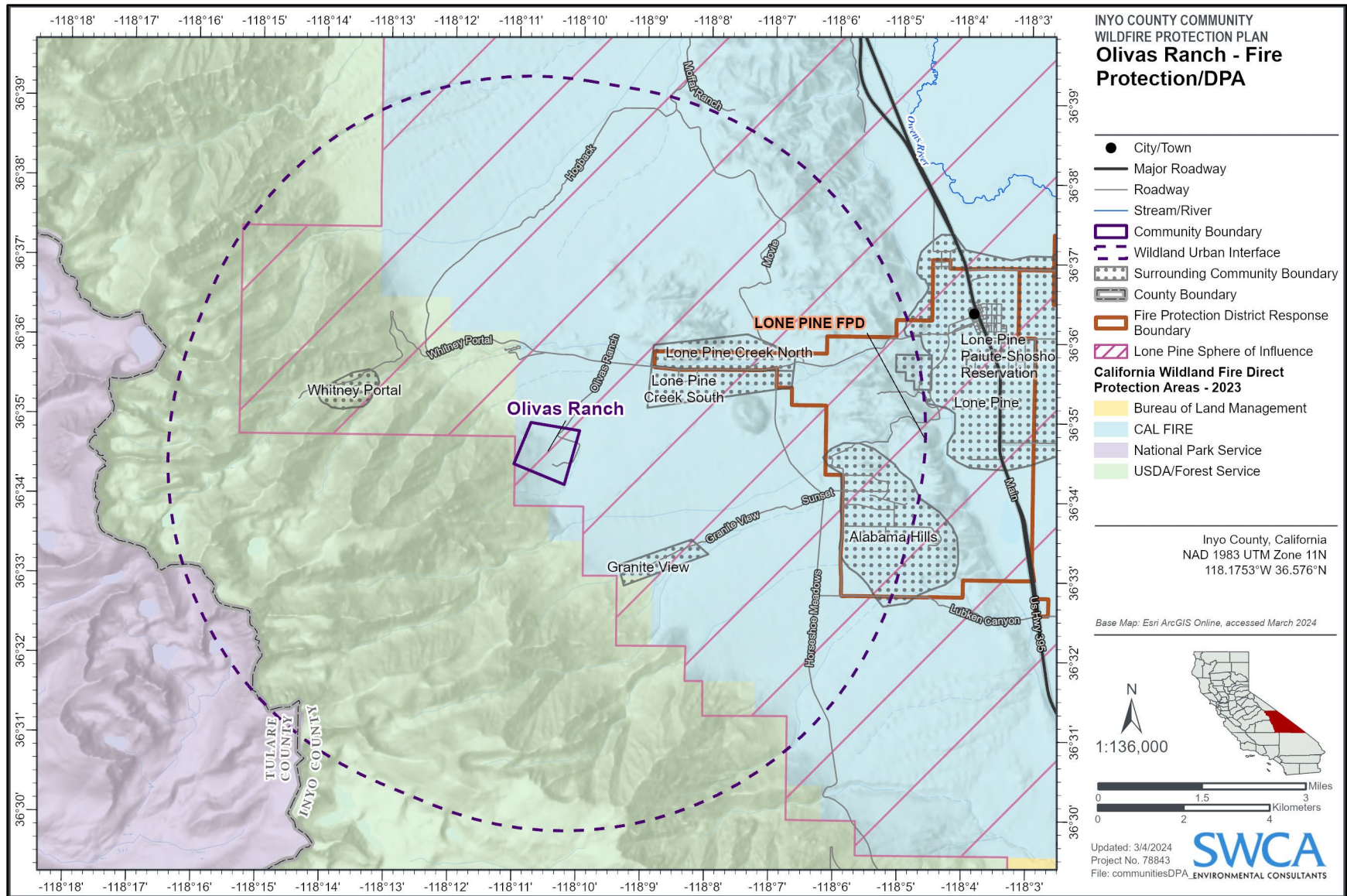


Figure D.56. Direct protection area and fire protection district boundary around Olivas Ranch.

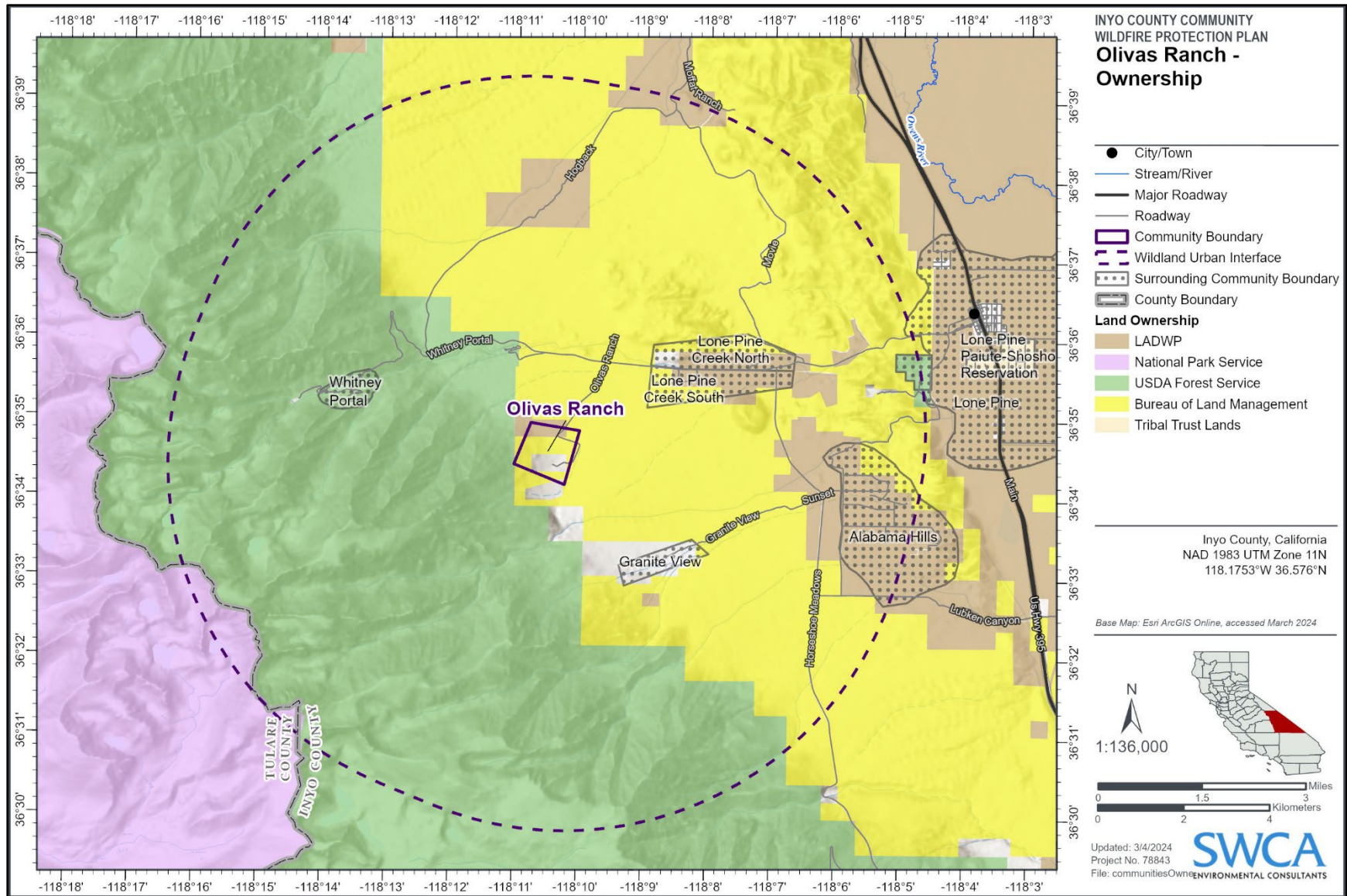


Figure D.57. Land ownership around Olivas Ranch.

WHITNEY PORTAL

Community Background

Community Name: Whitney Portal

Total Score: 136 (Extreme)

Land Area (acres): 216

Fire Protection District Status: Within the SOI of Lone Pine Volunteer Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Reflective street signs
- Good separation of adjacent structures
- Water source present (spigots)

Negative Attributes (High Scores)

- Uneven and unsurfaced roads
- One road in and out, steep and narrow
- Extremely limited turnarounds for response vehicles
- Limited defensible space; branches on roofs
- Medium to high angle slopes around structures
- History of fire occurrence
- Combustible roofing, deck, fence and house siding materials
- Community is far from nearest fire station
- Gas and electric utilities are aboveground

Suggested Recommendations

- Identify alternative evacuation routes and/or temporary refuge areas
- Target visitor education efforts (e.g., Camp Like a Pro program materials) at Whitney Portal
- Maintain and expand clearance along main evacuation corridors
- Thin and reduce fuels on slopes immediately adjacent to properties
- Collaborate with USFS to educate cabin owners about defensible space and evacuation planning

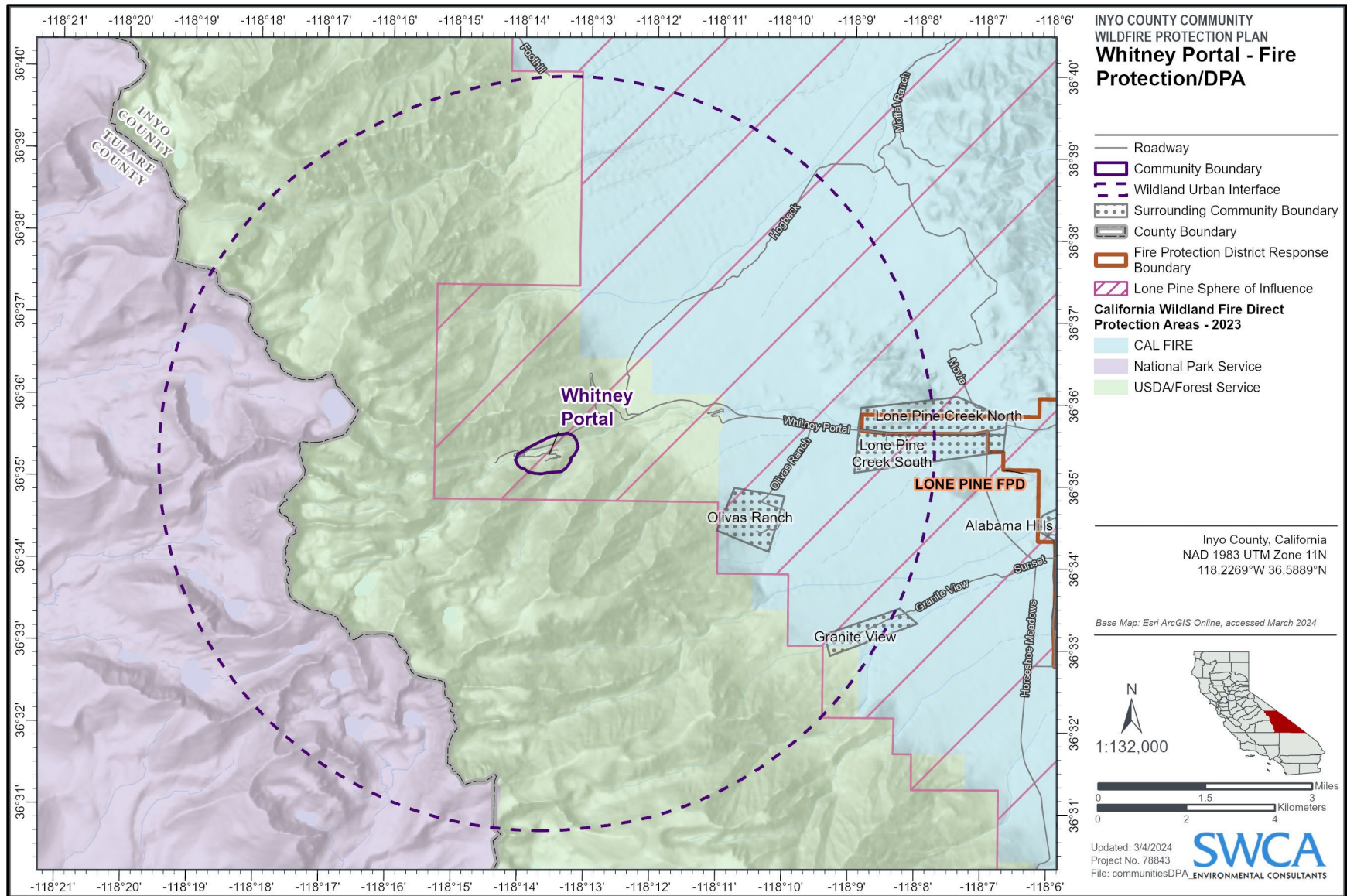


Figure D.58. Direct protection area and fire protection district boundary around Whitney Portal.

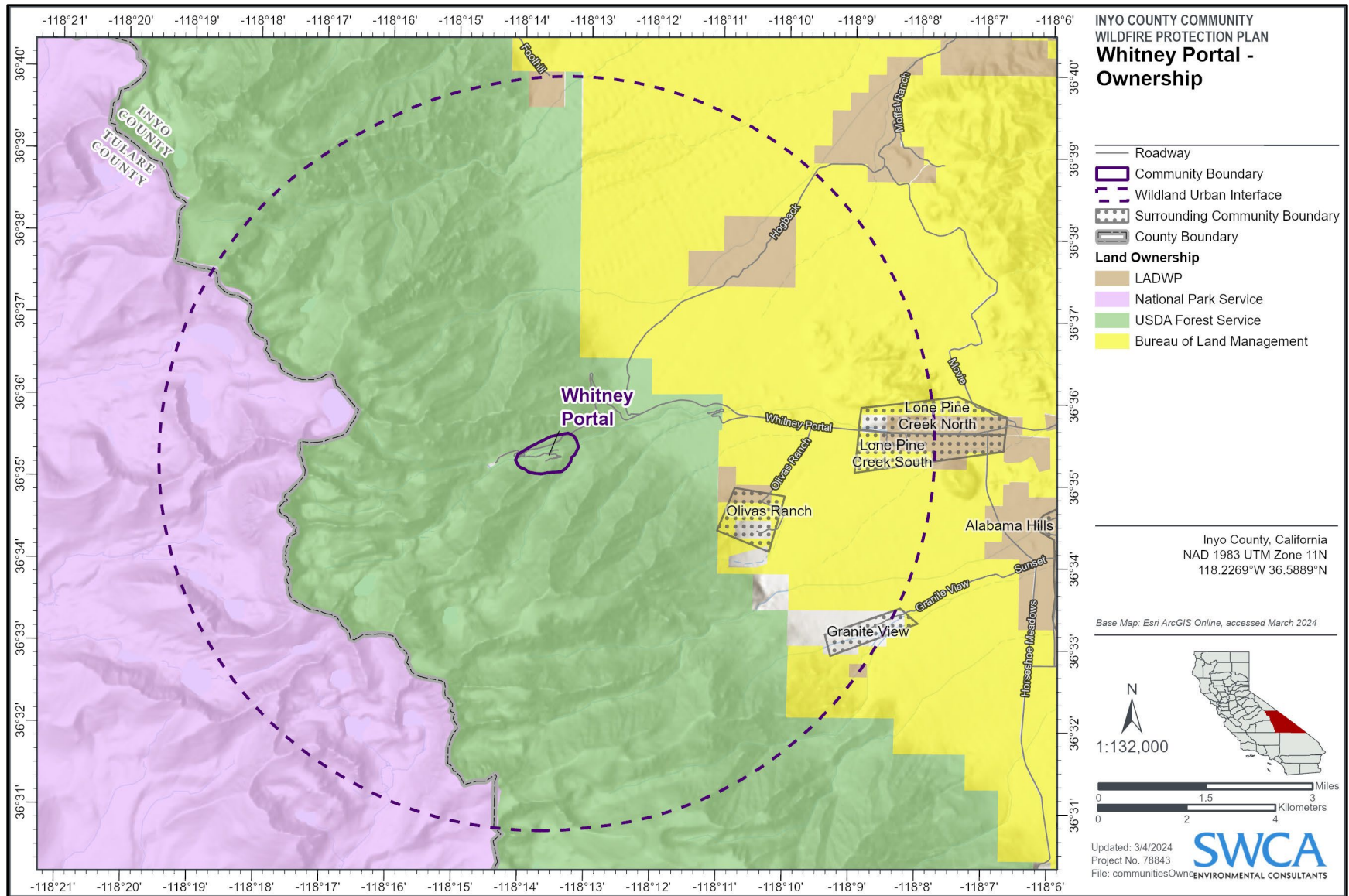


Figure D.59. Land ownership around Whitney Portal.

ALONG OR NEAR U.S. 395 SOUTH OF LONE PINE

CARTAGO/OLANCHA/GRANT

Community Background

Community Name: Cartago/Olancha/Grant **Total Score:** 95 (High) **Land Area (acres):** 7,221
Fire Protection District Status: Within the jurisdiction of Olancha Cartago Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Hydrants present in Cartago
- Good separation between structures
- Reflective street signage

Negative Attributes (High Scores)

- Poor defensible space
- Medium to high angle slopes around structures
- Combustible roofing, decks, siding, and fencing
- Limited setback
- Electric and gas utilities aboveground
- Lack of hydrants in Olancha
- Most access roads are unpaved
- Unoccupied buildings

Suggested Recommendations

- Assist Olancha FPD with station and equipment upgrades
- Olancha FPD to establish fire protection agreements with communities that receive services but are outside its responsibility area
- Maintain clearance along access roads
- Install hydrants or water tanks in Olancha
- Conduct outreach to inform residents about evacuation, home hardening, and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Create a map with all roads and identify alternative evacuation routes
- Continue and expand community education and engagement events
- Assess wildfire hazard risk from CDFW Cartago Wildlife Area adjacent to Cartago
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)
- Collaborate with private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use on driveways and private roads longer than 300 feet

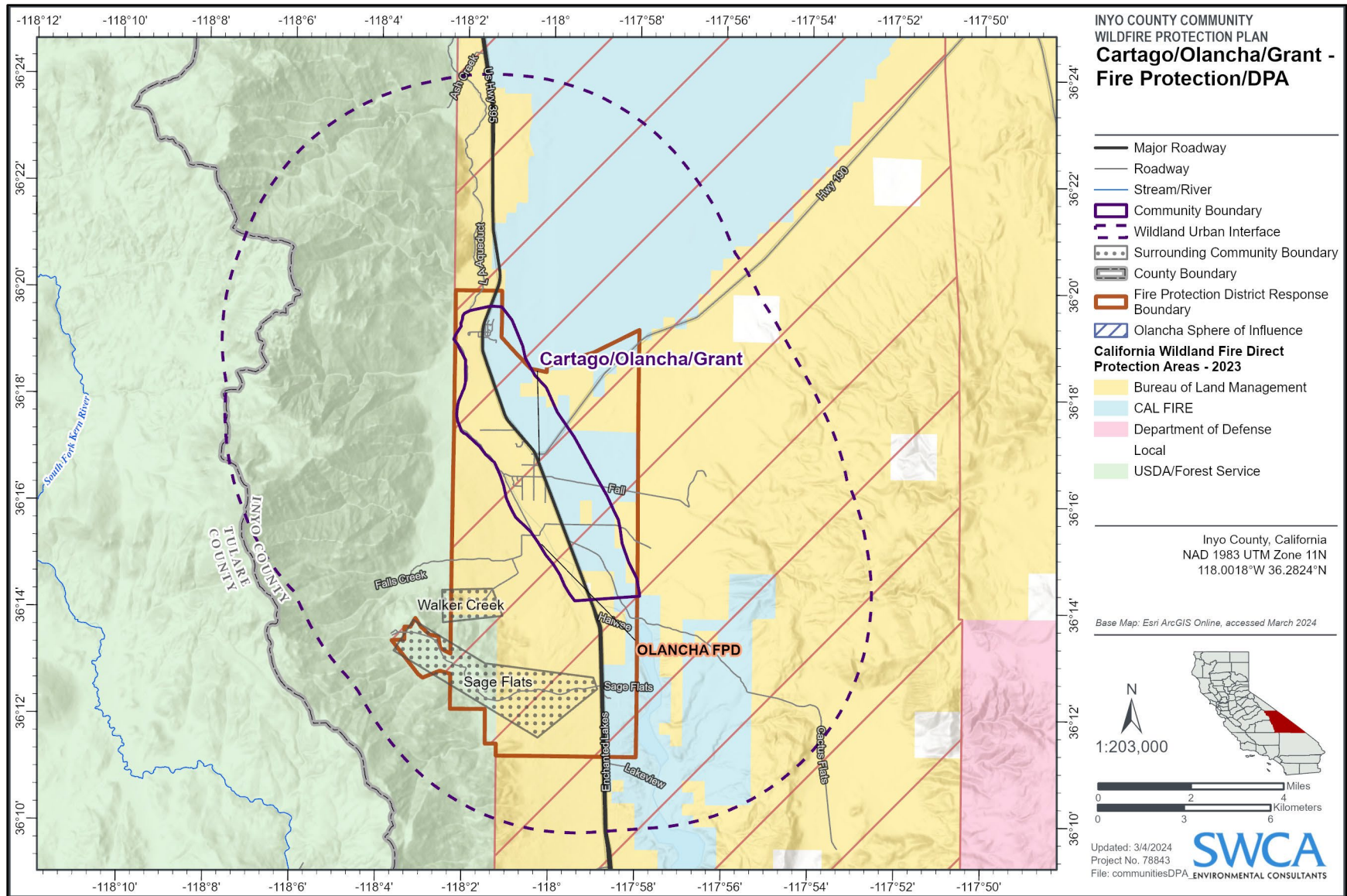


Figure D.60. Direct protection area and fire protection district boundary around Cartago/Olancha/Grant.

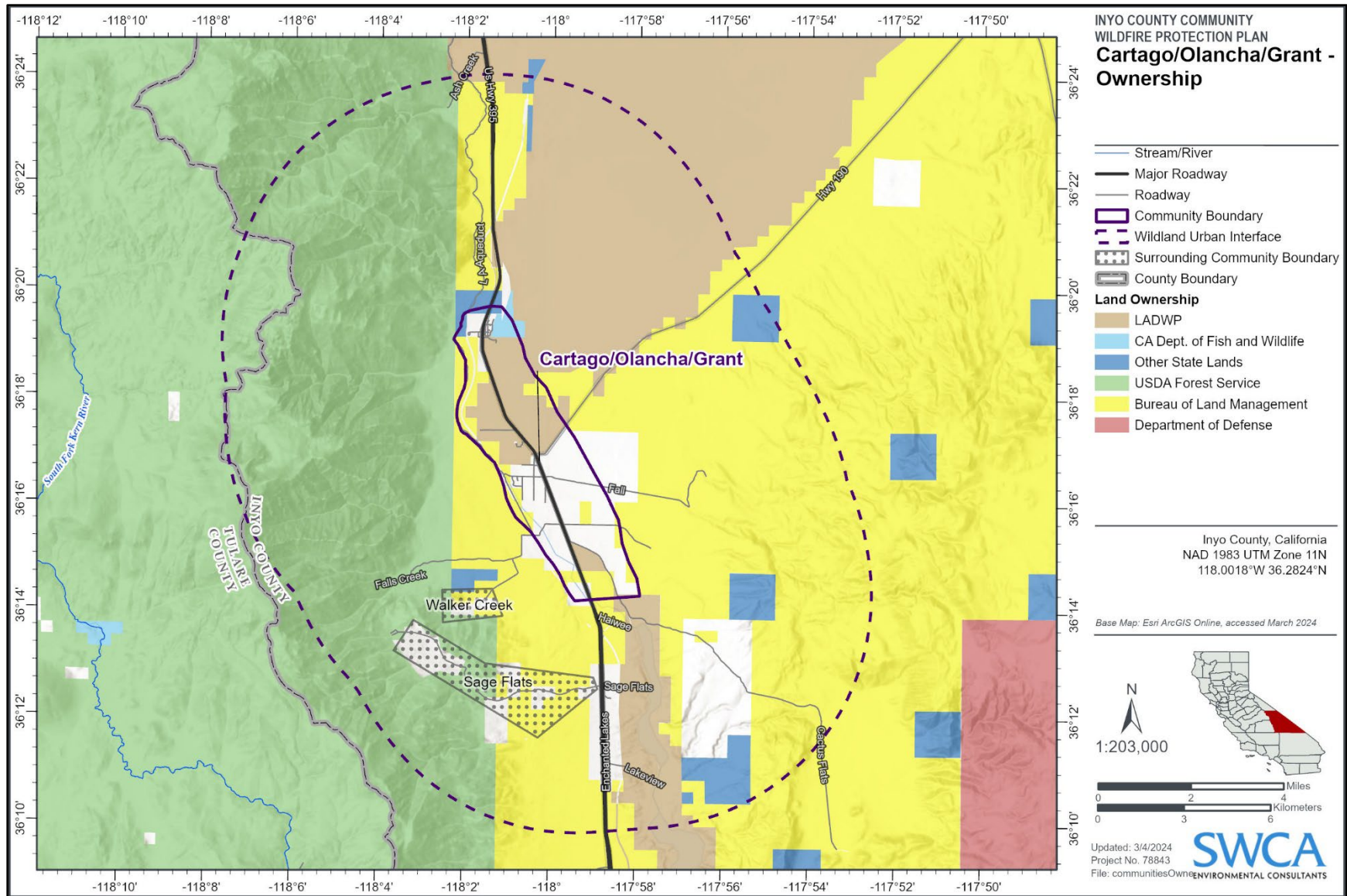


Figure D.61. Land ownership around Cartago/Olancha/Grant.

PEARSONVILLE

Community Background

Community Name: Pearsonville

Total Score: 83 (High)

Land Area (acres): 656

Fire Protection District Status: None

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Wide roads
- Relatively flat, surfaced roads
- Easily accessible to fire response, allowing for vehicles to turn around
- Reflective street signs
- Low angle slopes around structures

Negative Attributes (High Scores)

- No water sources
- Abandoned structures
- Poor defensible space
- Combustible roof and siding materials
- Fire station far from community
- Gas and electric utilities are aboveground

Suggested Recommendations

- Seek to establish fire protection agreements and strategies with the closest FPD or establish a nexus with the responding agency (e.g., Olancho FPD)
- Engage community to explore options for water resource development
- Conduct outreach to inform residents about evacuation, home hardening, and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)

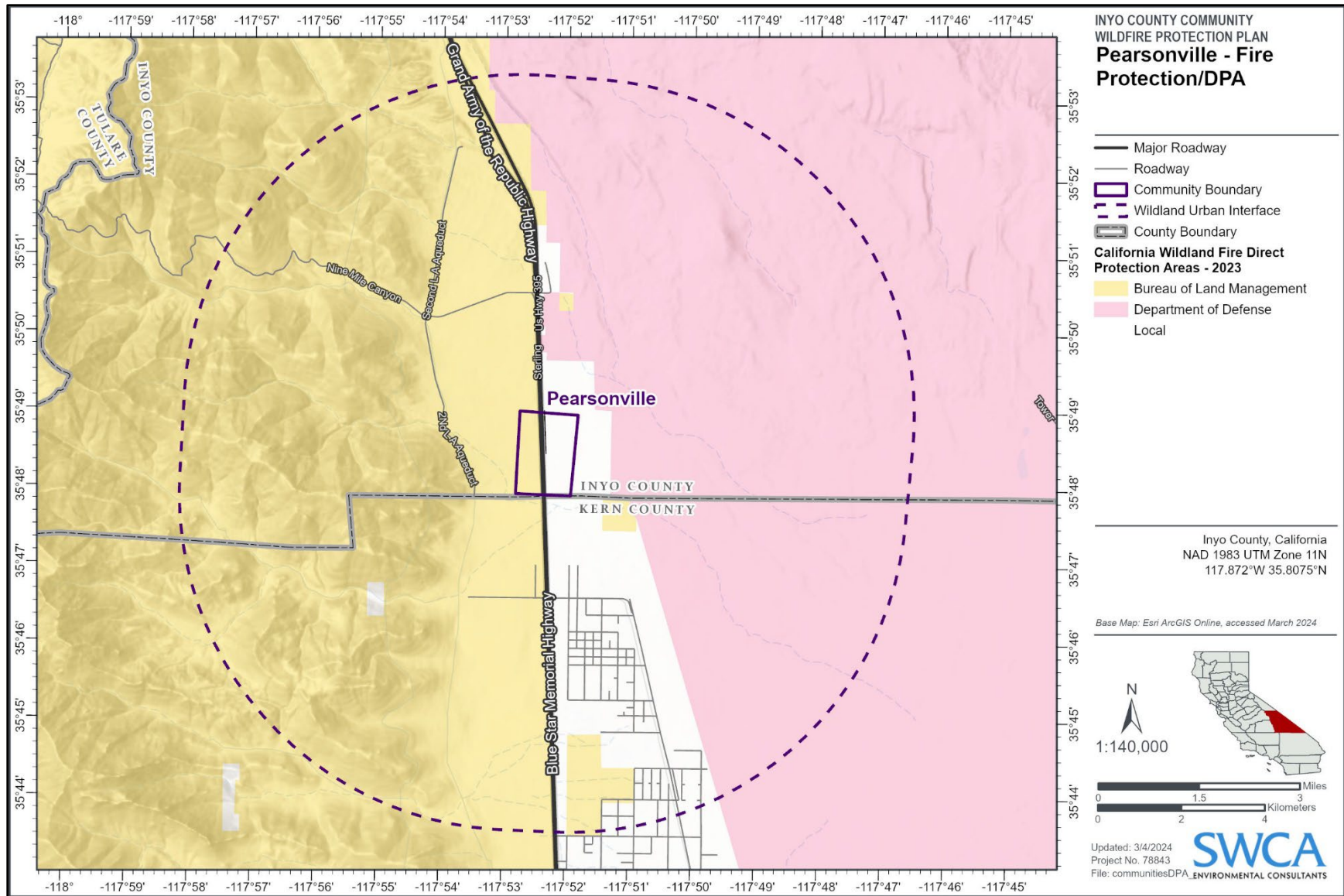


Figure D.62. Direct protection area and fire protection district boundary around Pearsonville.

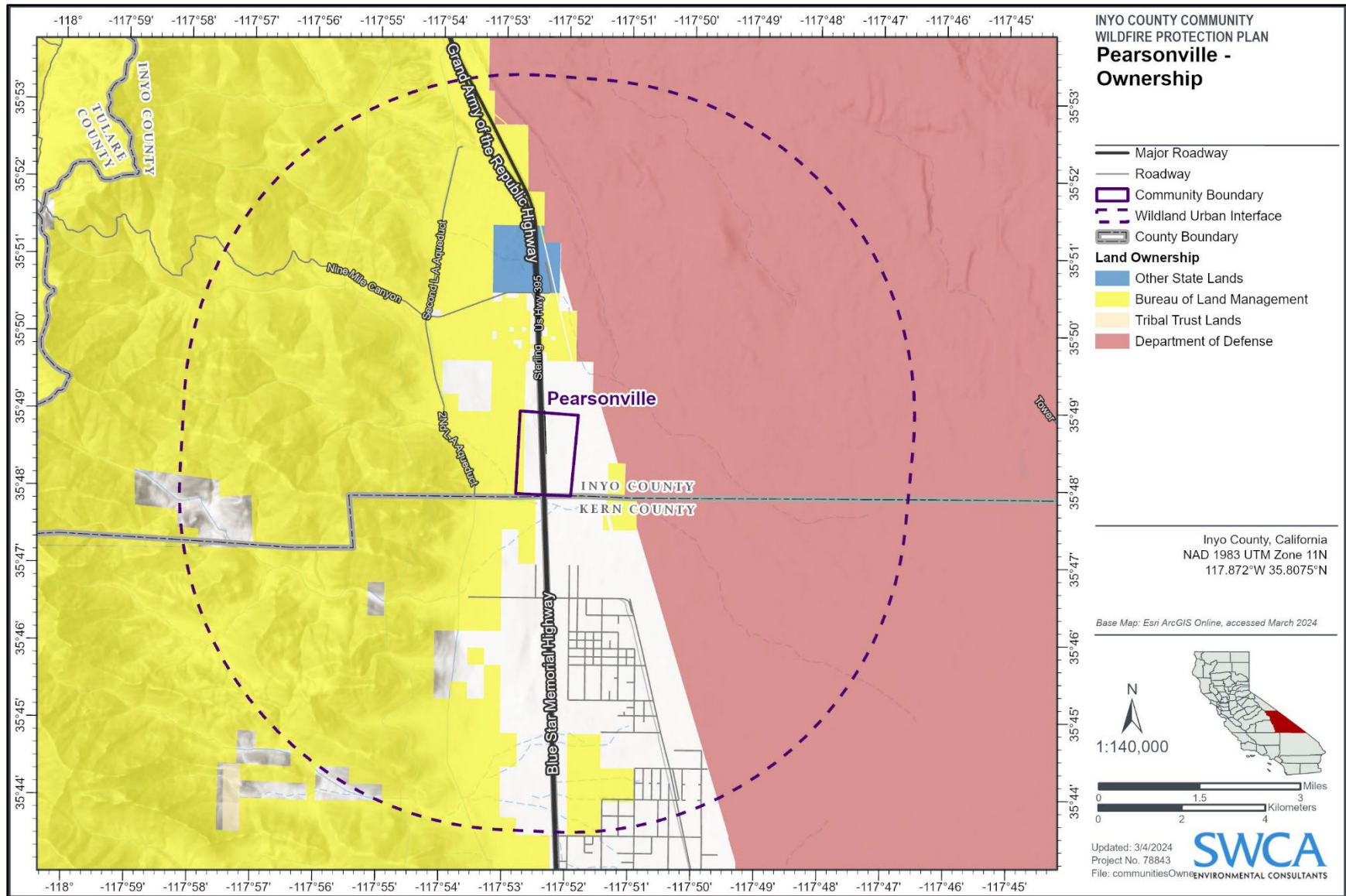


Figure D.63. Land ownership around Pearsonville.

SAGE FLATS

Community Background

Community Name: Sage Flats **Total Score:** 78 (High) **Land Area (acres):** 2577

Fire Protection District Status: Within the jurisdiction of Olancha Cartago Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Reflective street signs
- Relatively wide, paved road for most of the length (Sage Flats Dr)
- Low angle slopes around structures
- Good separation of adjacent structures
- Private water tanks present

Negative Attributes (High Scores)

- Only 1 road in and out; road narrows toward the western end
- Abandoned buildings present
- Limited defensible space
- Combustible roof and siding materials
- Fire station far from community
- Limited water supply
- Gas and electric utilities are aboveground
- Exposed to upslope and downslope medium-load shrub fuels
- Riparian corridor intersects community

Suggested Recommendations

- Collaborate with homeowners to maintain clearance along long driveways
- Engage community to explore options for water resource development
- Conduct outreach to inform residents about evacuation, home hardening, and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Create a map with all roads and identify alternative evacuation routes
- Thin and reduce fuels on slopes immediately adjacent to properties
- Maintain water tanks full and ensure that fittings are accessible
- Assess community capacity for defensible space implementation to determine needs
- Collaborate with local safety officials, fire departments, wildland fire agencies, and private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use
- Encourage homeowner implementation of defensible space standards (see Appendix J)

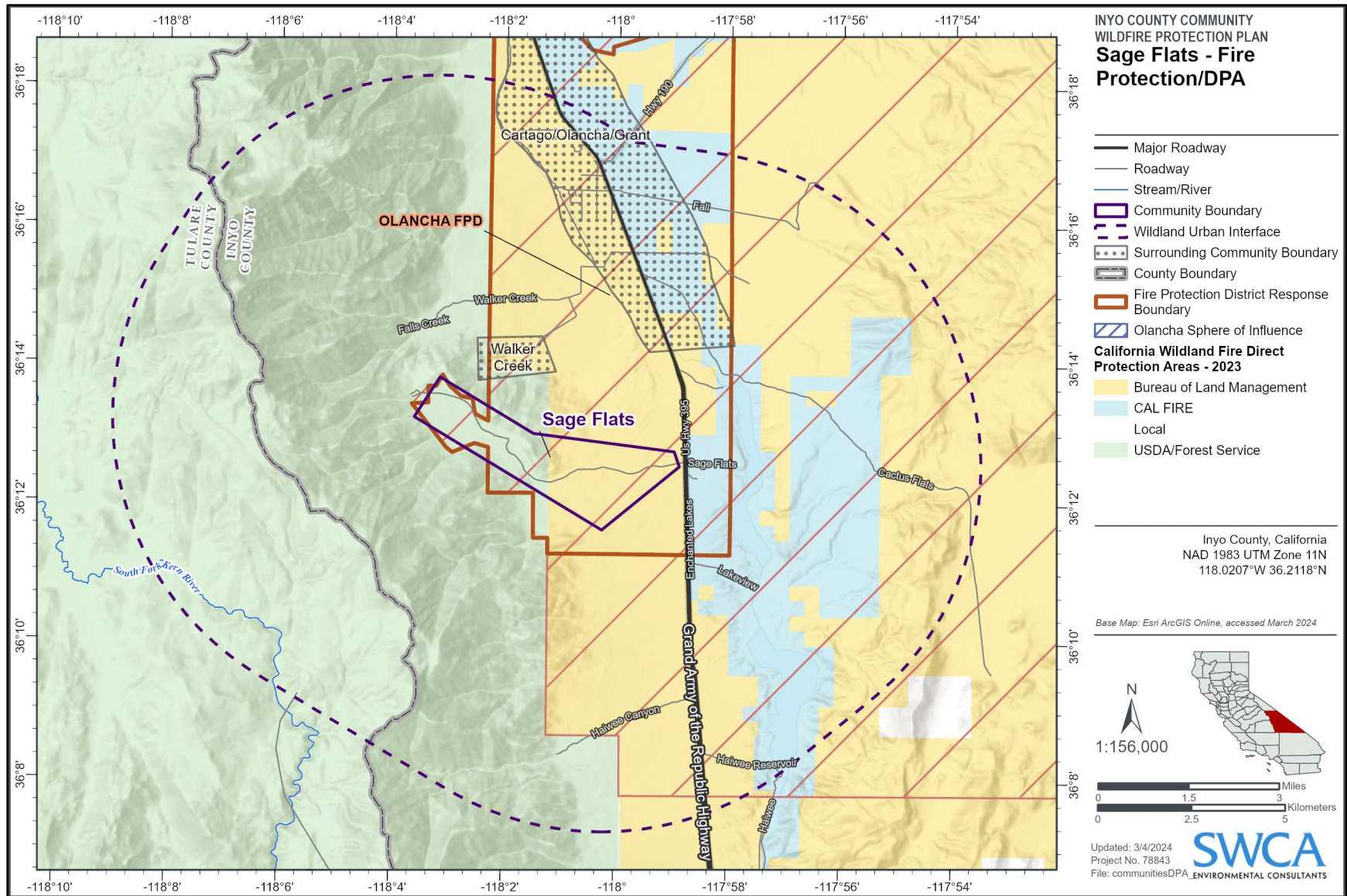


Figure D.64. Direct protection area and fire protection district boundary around Sage Flats.

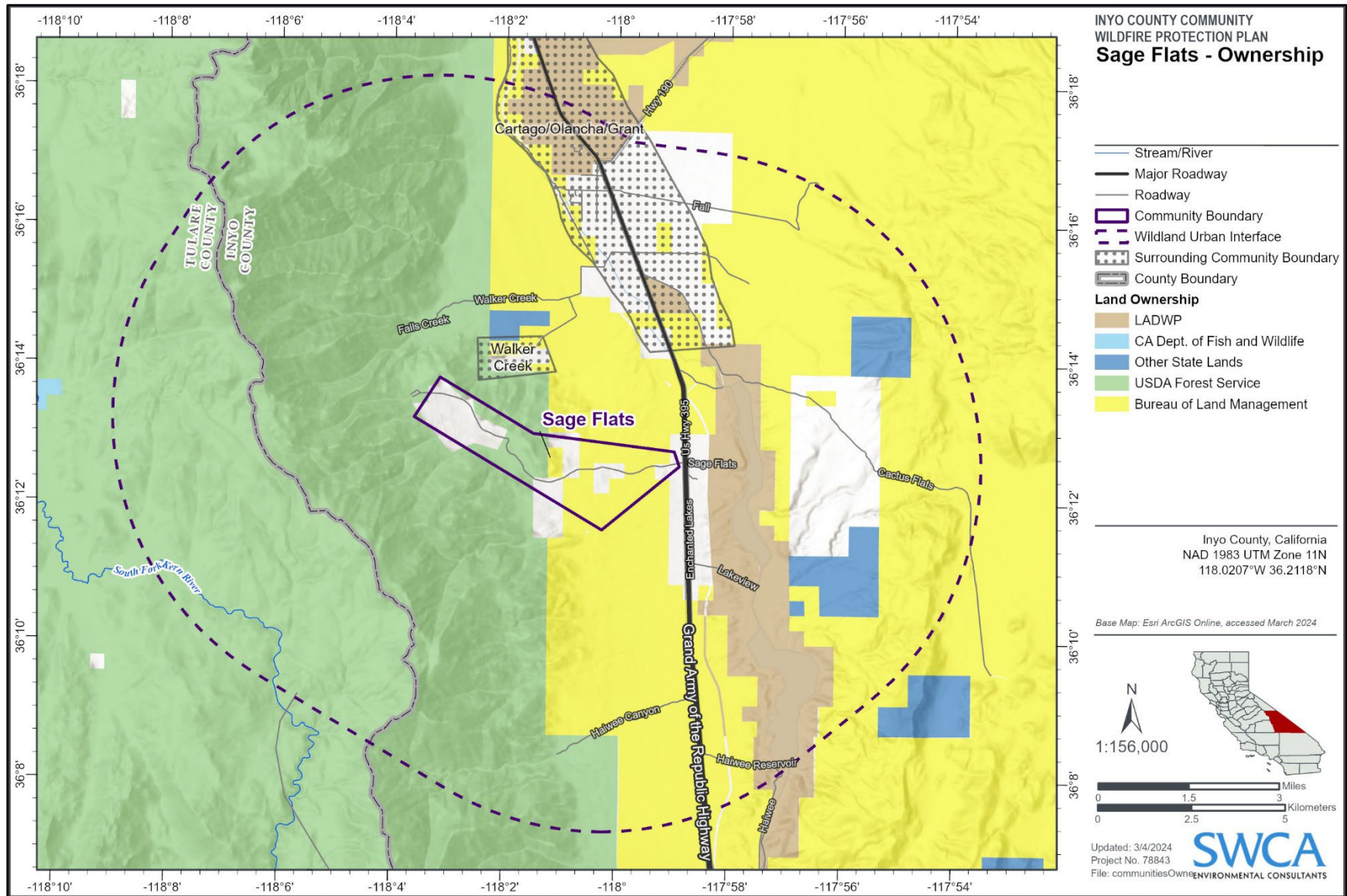


Figure D.65. Land ownership around Sage Flats.

WALKER CREEK

Community Background

Community Name: Walker Creek

Total Score: 71 (High)

Land Area (acres): 493

Fire Protection District Status: Within the jurisdiction of Olancha Cartago Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Good defensible space around structures
- Low angle slopes around structures
- Non-combustible fencing; decks not present

Negative Attributes (High Scores)

- No water sources
- One road in and out, unpaved, has a very narrow bridge
- Community is isolated and remote
- Limited turnarounds for response vehicles
- Street signs not present
- Combustible roof and house siding materials
- Community is relatively far from a fire station
- Gas and electric utilities are aboveground

Suggested Recommendations

- Engage community to explore options for water resource development
- Maintain clearance along access roads
- Conduct outreach to inform residents about evacuation, home hardening, and defensible space
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Create a map with all roads and identify alternative evacuation routes
- Install reflective street signs
- Collaborate with local safety officials, fire departments, wildland fire agencies, and private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use

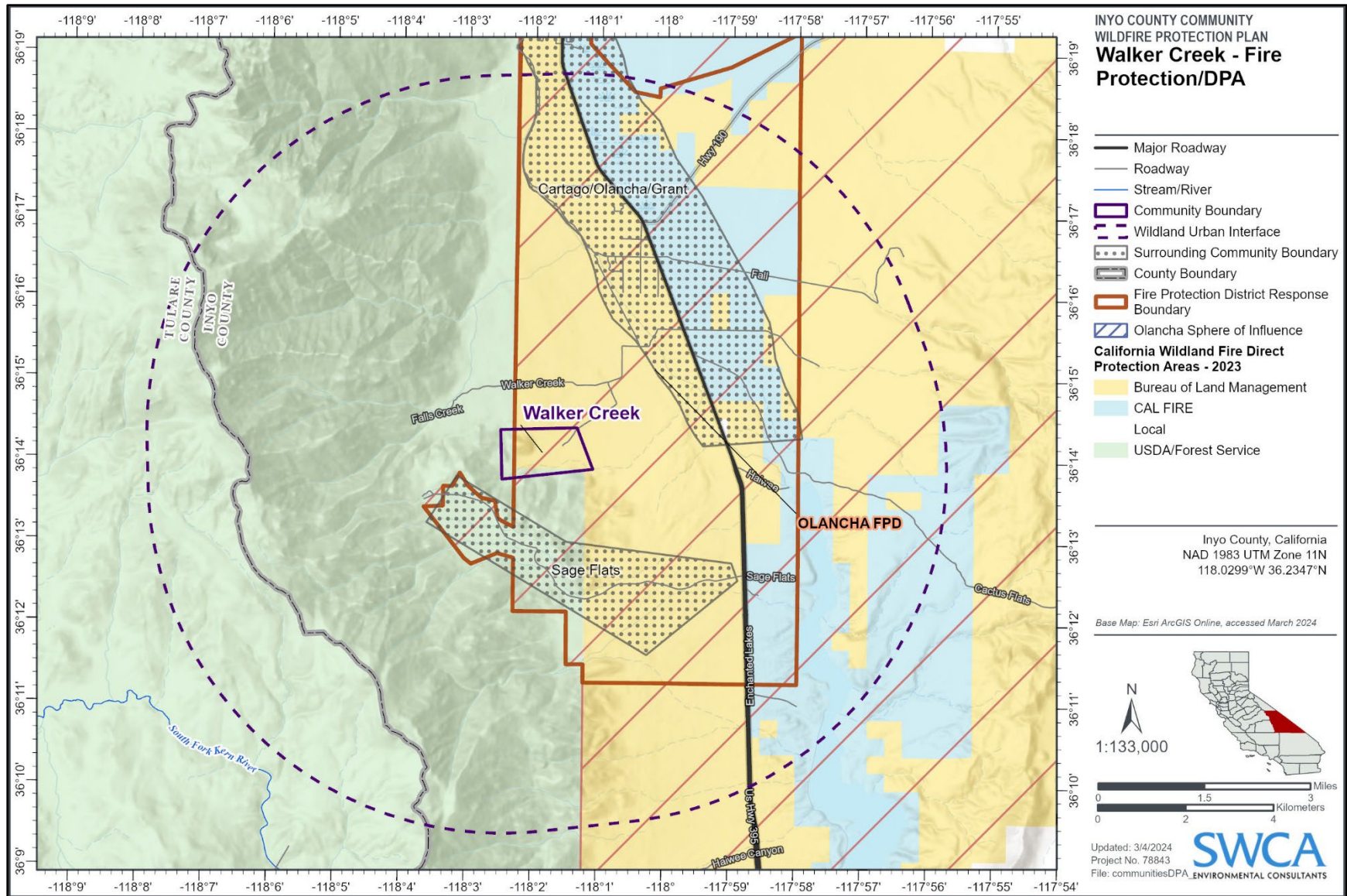


Figure D.66. Direct protection area and fire protection district boundary around Walker Creek

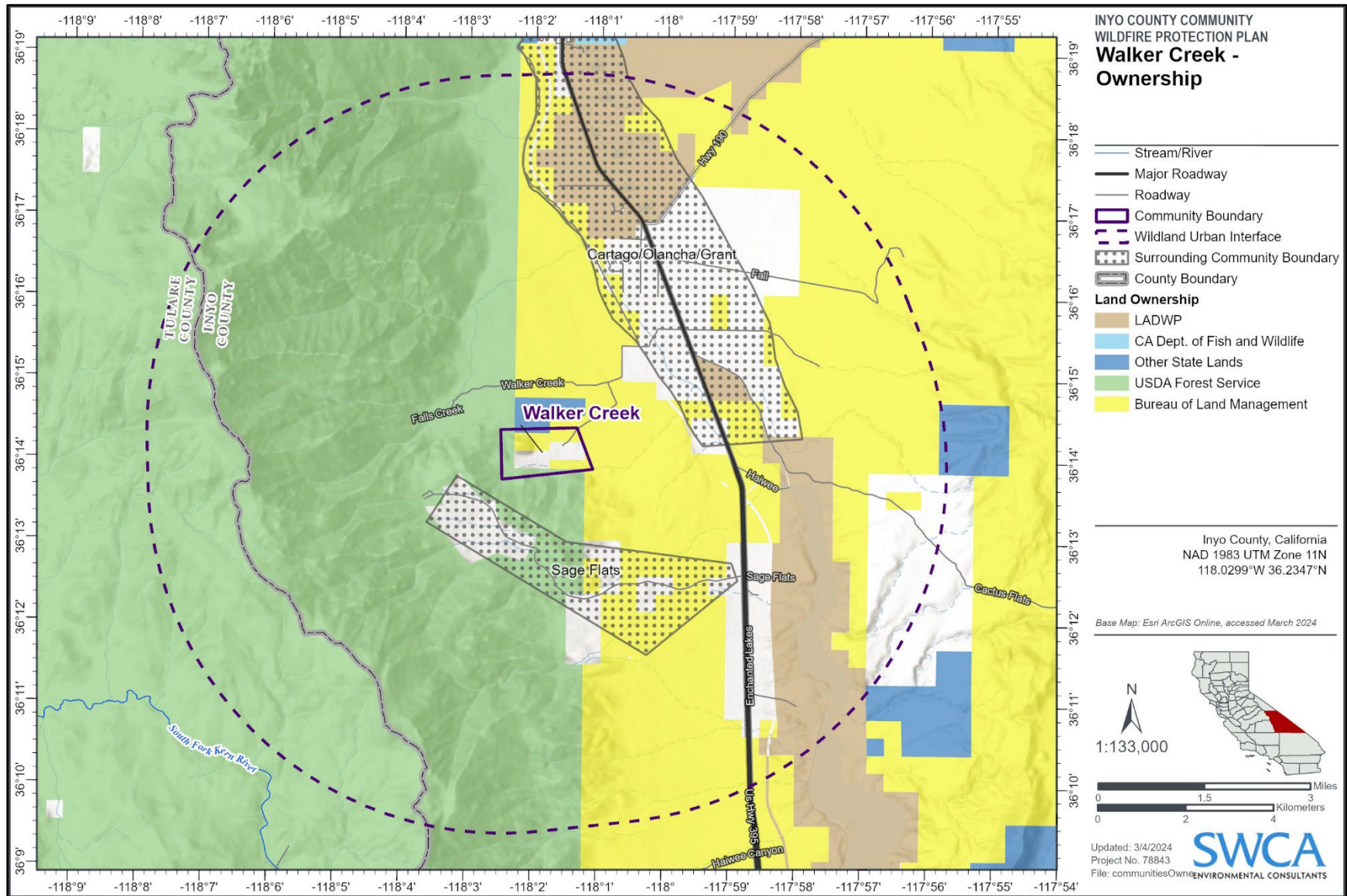


Figure D.67. Land ownership around Walker Creek.

EAST AND SOUTHEAST INYO COUNTY

CHARLESTON VIEW

Community Background

Community Name: Charleston View **Total Score:** 109 (High) **Land Area (acres):** 22,629
Fire Protection District Status: Within the jurisdiction of Southern Inyo Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Wide, unpaved roads
- Low angle slopes around structures
- Plans for a building a fire station within the community
- Structures have good separation
- Fuel loading is relatively light within and around the perimeter

Negative Attributes (High Scores)

- Isolated community, far from fire response resources
- Street signs not present in areas, inconsistent street naming
- Lack of an established and consistent street naming system
- Combustible deck, fencing, siding, and roofing materials
- Limited defensible space; yards and lots with excessive debris and rubbish
- Open lots with discarded plywood
- Main access to Charleston from Tecopa is Old Spanish Trail – a paved road, steep in some areas, with very tight curves
- Limited water availability

Suggested Recommendations

- Establish a unified naming and signage system for street signs
- Explore options to install additional water tanks and/or collaborate with property owners to utilize private water resources during emergencies
- Assess overgrown creeks with dead and dried vegetation to direct restoration efforts and to manage mesquite within the surrounding region
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Explore options to initiate debris cleanup events and disposal

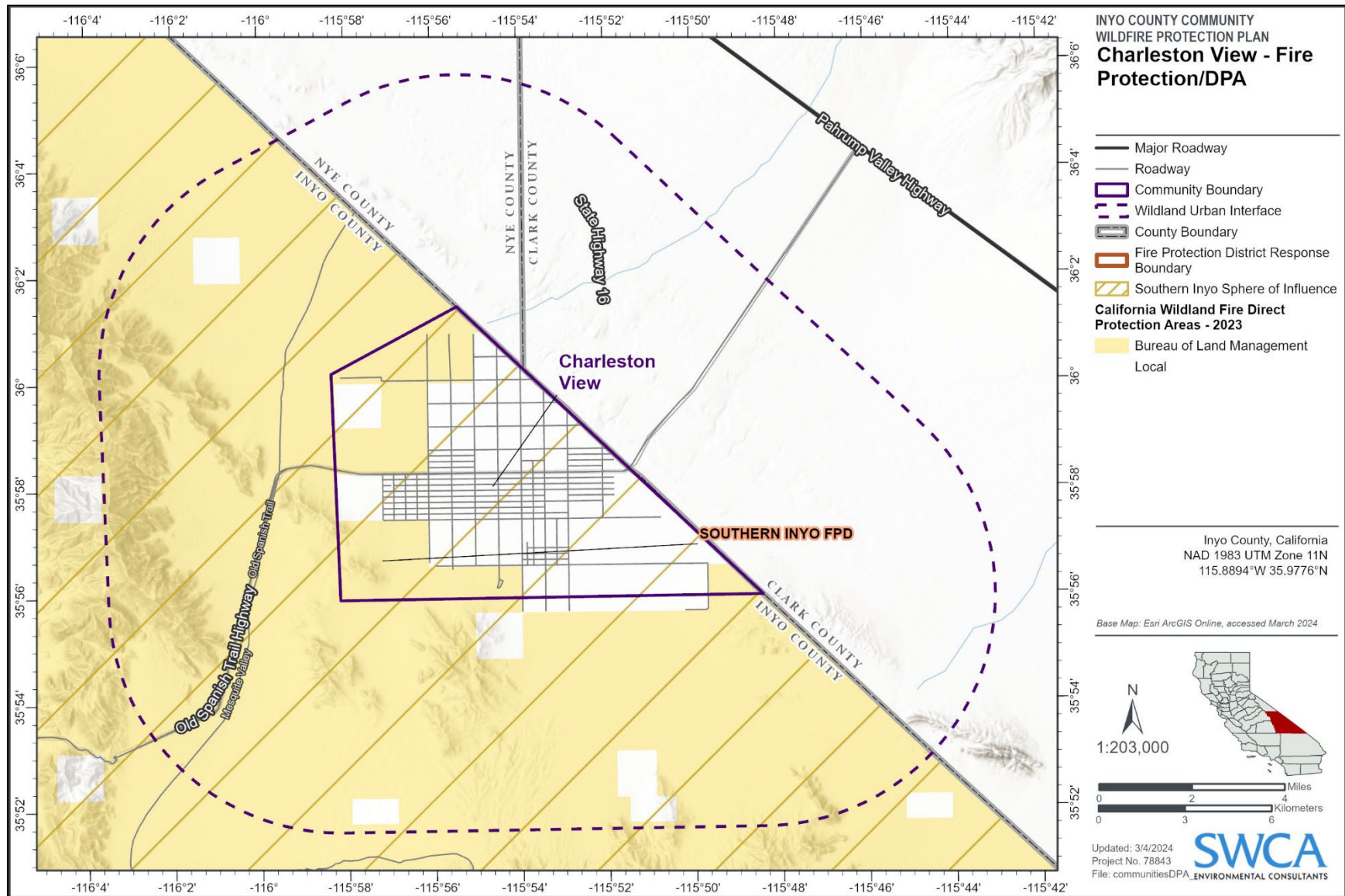


Figure D.68. Direct protection area and fire protection district boundary around Charleston View.

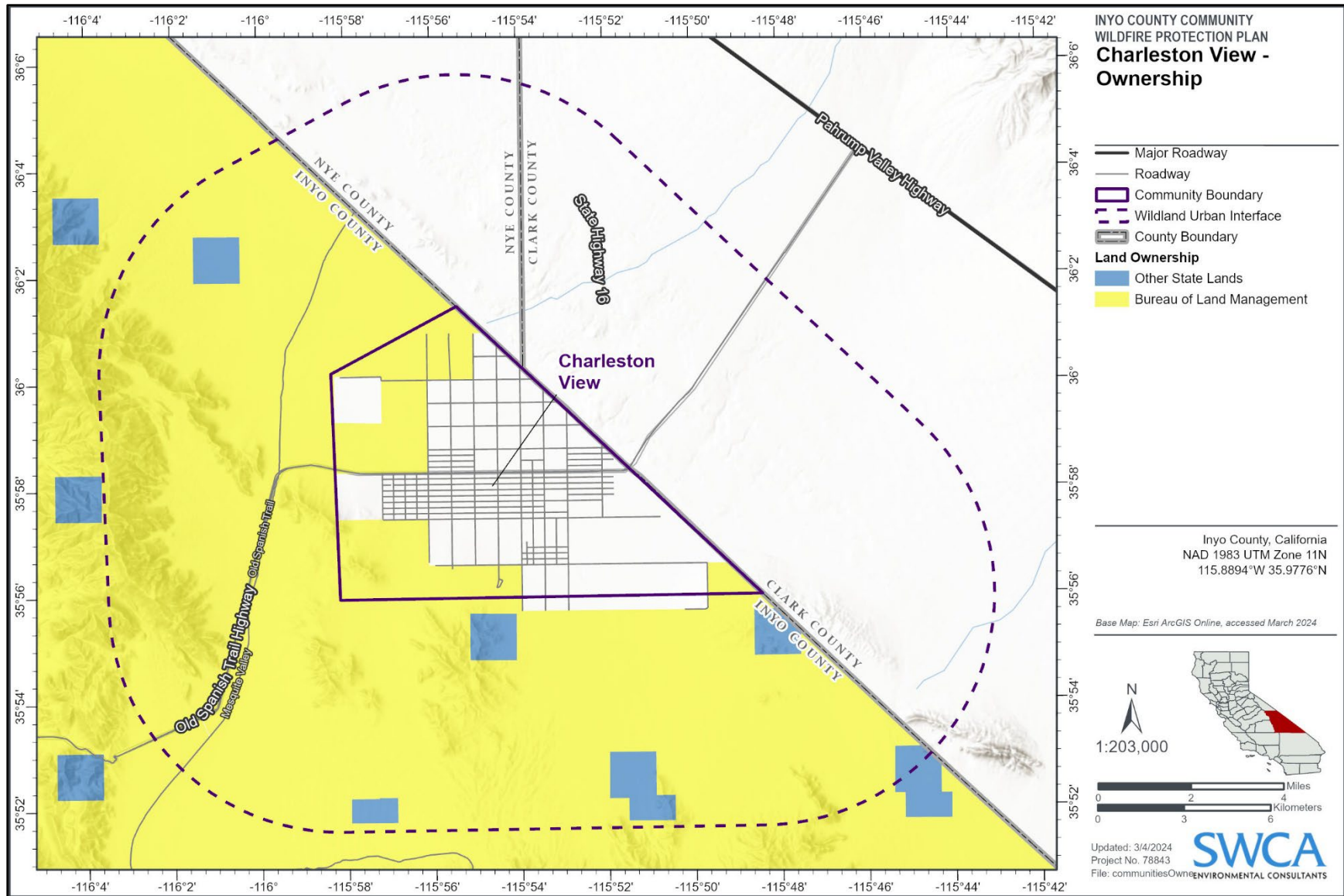


Figure D.69. Land ownership around Charleston View.

DARWIN

Community Background

Community Name: Darwin

Total Score: 125 (Extreme)

Land Area (acres): 680

Fire Protection District Status: None

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Reflective street signs present
- Some structures have metal roofing and siding
- Light fuel loading around and within community (shrub fuels)

Negative Attributes (High Scores)

- Isolated community, very far away from fire response resources
- Many properties with large quantities of yard debris and wood piles
- Structures with limited setback
- Roads narrows and steepens in areas
- One road in and out
- Poor defensible space
- Community is intersected by many hills
- Predominantly combustible roofing and siding
- Lack of water resources
- Gas and electric utilities aboveground
- Many homes are missing address markers

Suggested Recommendations

- Collaborate with property owners to install and/or upgrade address markers
- Engage community to explore options for water resource development
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Explore options to initiate debris cleanup events
- Maintain roadside clearance along Darwin Rd
- Seek to establish fire protection agreements and strategies with the closest FPD or establish a nexus with the responding agency
- Assess community capacity for defensible space implementation to determine needs
- Collaborate with local safety officials, fire departments, wildland fire agencies, and private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use
- Encourage homeowner implementation of defensible space standards (see Appendix J)

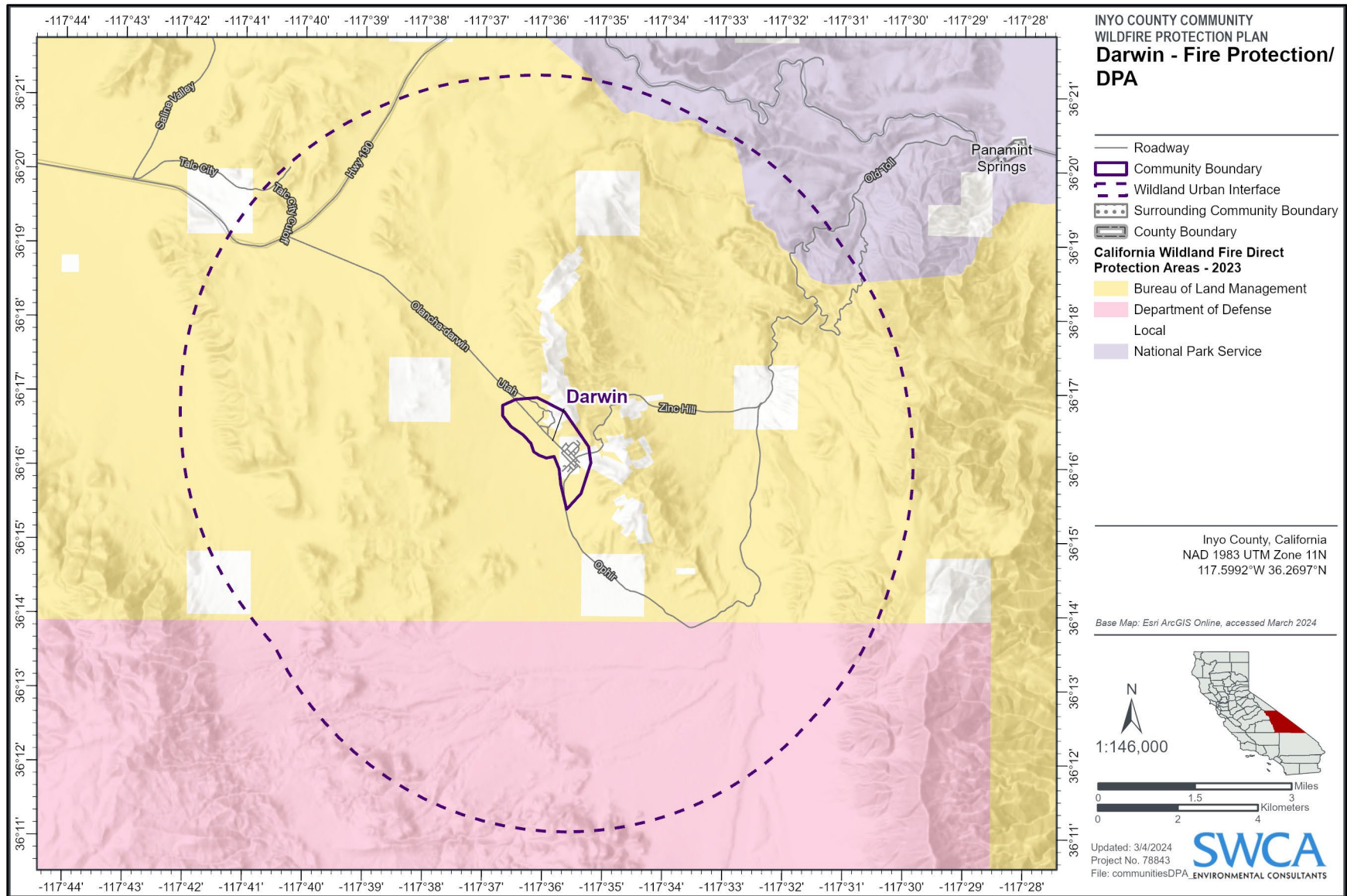


Figure D.70. Direct protection area and fire protection district boundary around Darwin.

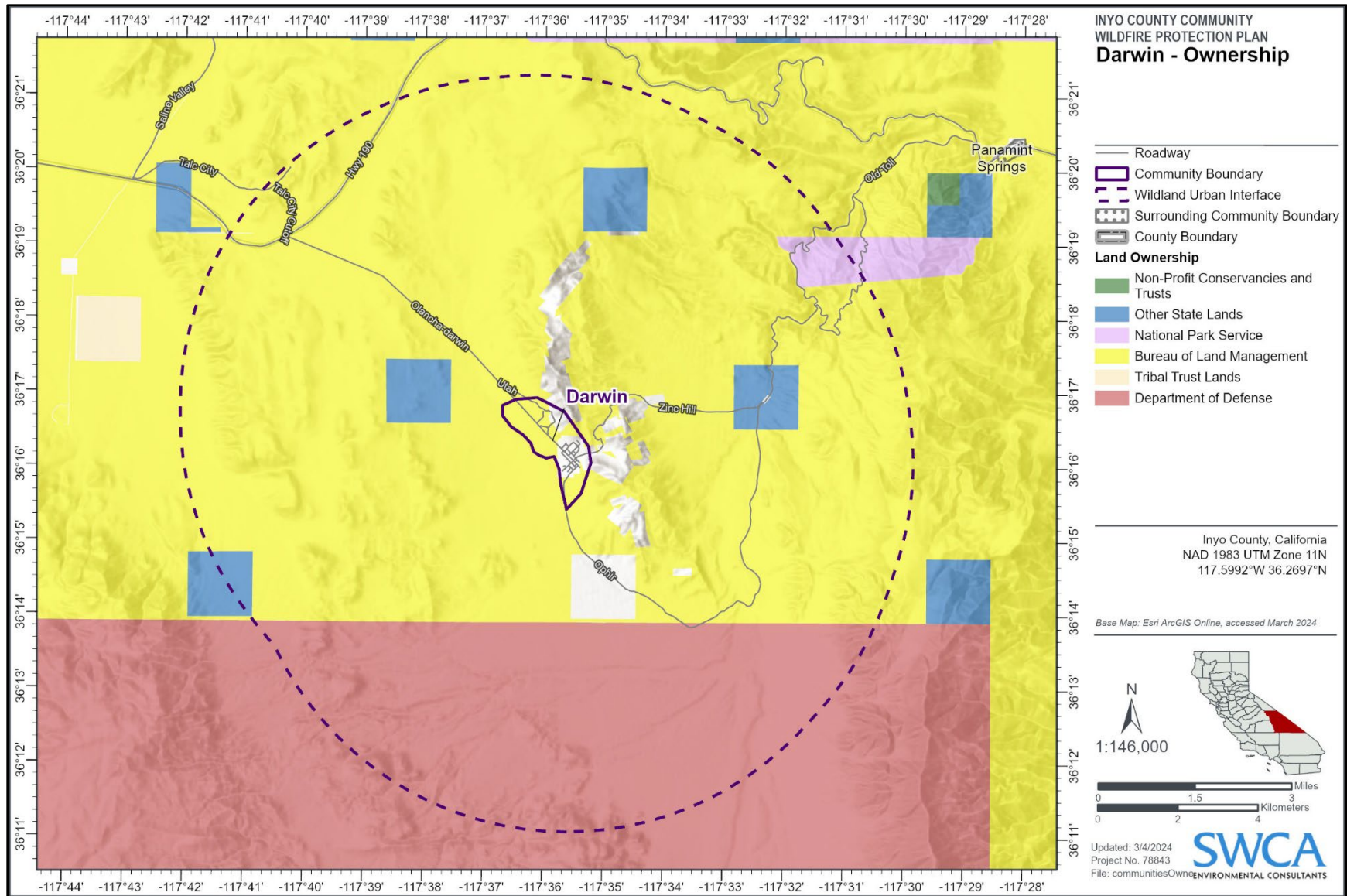


Figure D.71. Land ownership around Darwin.

DEEP SPRINGS

Community Background

Community Name: Deep Springs

Total Score: 60 (Moderate)

Acres: 1316

Fire Protection District Status: None

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Reflective street signs present
- 2 or more roads in and out
- Good separation of adjacent structures
- Non-combustible deck and fencing
- Low angle slopes around structures
- Light perimeter fuels, almost barren to the south
- Agricultural field to the north and east
- Defensible space is acceptable

Negative Attributes (High Scores)

- Street sign is missing letters
- Narrow access road
- Combustible house siding and roofing materials
- Lack of water resources
- Community is in a remote location, very far away from fire response resources
- Electric and gas utilities aboveground
- Branches resting on rooftops

Suggested Recommendations

- Maintain roadside clearance along main access points
- Repair the street sign so that the name is legible
- Engage community to explore options for water resource development
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Conduct outreach about defensible space (particularly about branch-roof clearance) and home hardening
- Seek to establish fire protection agreements and strategies with the closest FPD or establish a nexus with the responding agency

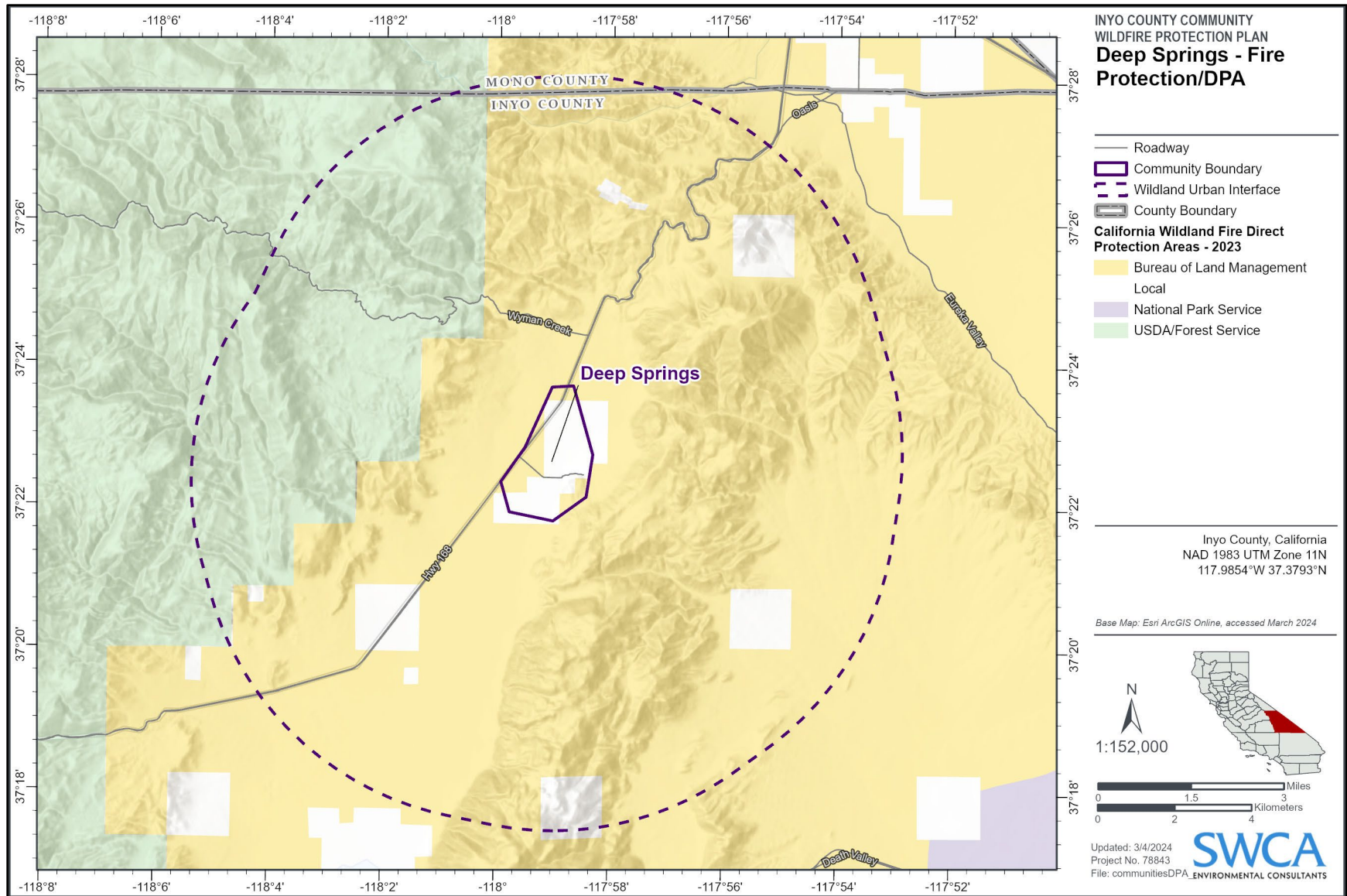


Figure D.72. Direct protection area and fire protection district boundary around Deep Springs.

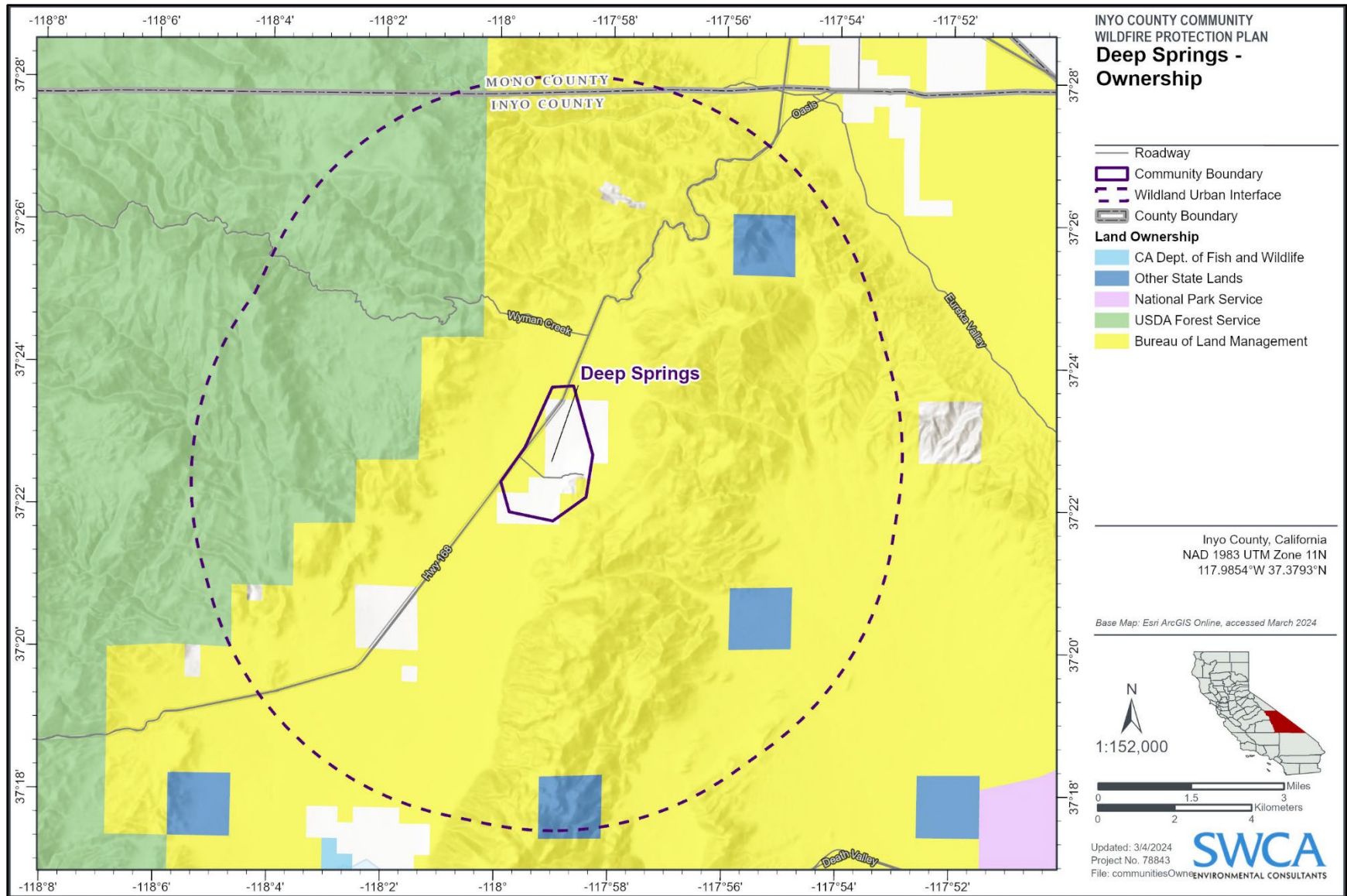


Figure D.73. Land ownership around Deep Springs.

FURNACE CREEK/TIMBISHA-SHOSHONE TRIBE

Community Background

Community Name: Furnace Creek/Timbisha-Shoshone Tribe

Total Score: 59 (Moderate)

Land Area (acres): 8954

Fire Protection District Status: None

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Fuels are light and sparse; surrounding hills are mostly barren
- Insufficient fuels to sustain large fires
- 2 or more roads in and out
- Flat, surfaced roads
- Easily accessible to fire response with wide roads for trucks to turn around
- Reflective street signs
- Low angle slopes around structures
- Fire-resistant roofing
- Hydrants present

Negative Attributes (High Scores)

- Limited defensible space (residences)
- Limited separation between structures
- Fire station is far from the community
- Electric and gas utilities aboveground

Suggested Recommendations

- Conduct outreach about defensible space
- Engage with tribal representatives to bolster education about defensible space
- Seek to establish fire protection agreements and strategies with the closest FPD or establish a nexus with the responding agency
- Assess community capacity for defensible space implementation to determine needs
- Encourage assignment holder implementation of defensible space standards (see Appendix J)

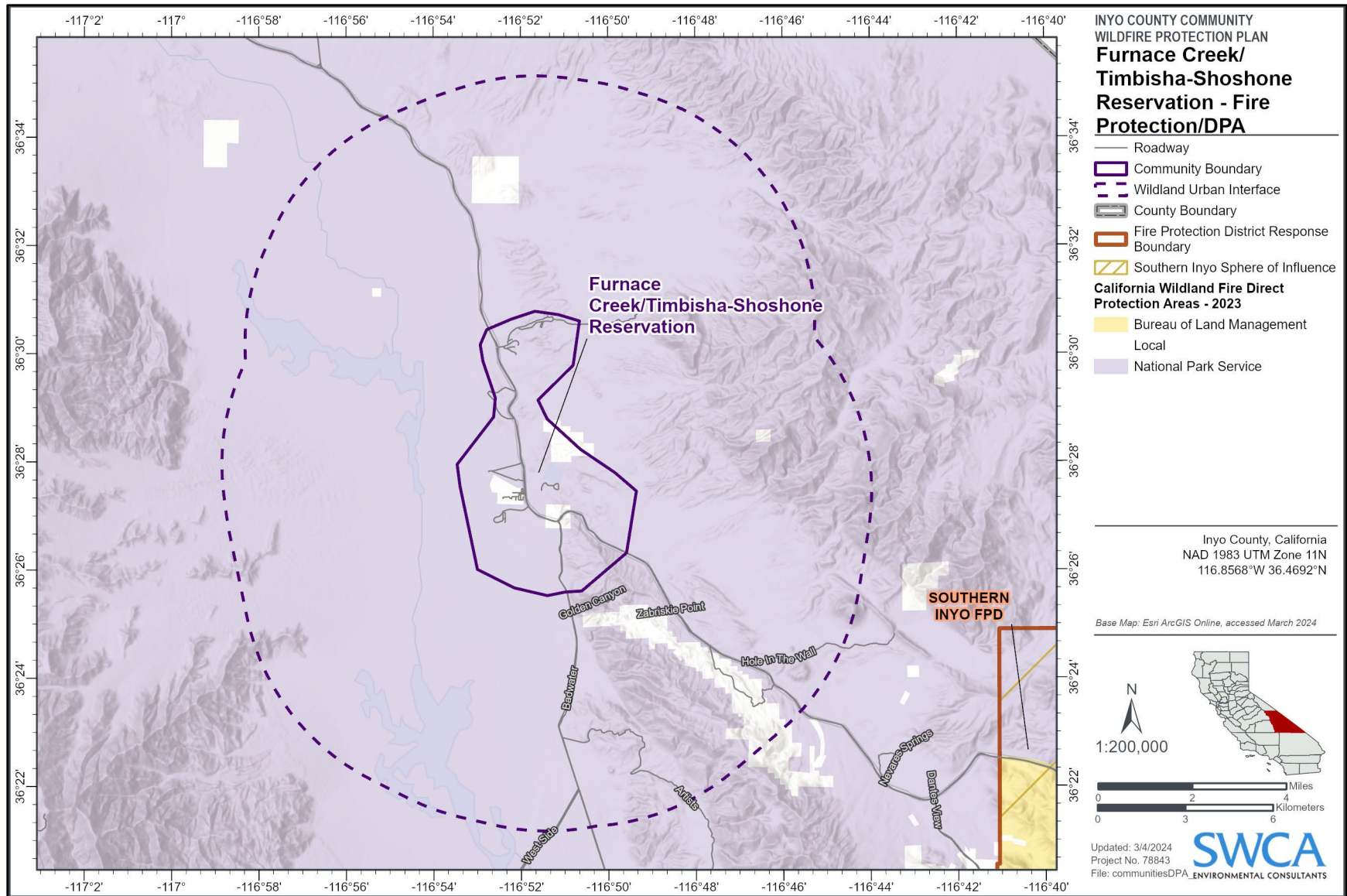


Figure D.74. Direct protection area and fire protection district boundary around Furnace Creek/Timbisha-Shoshone Reservation.

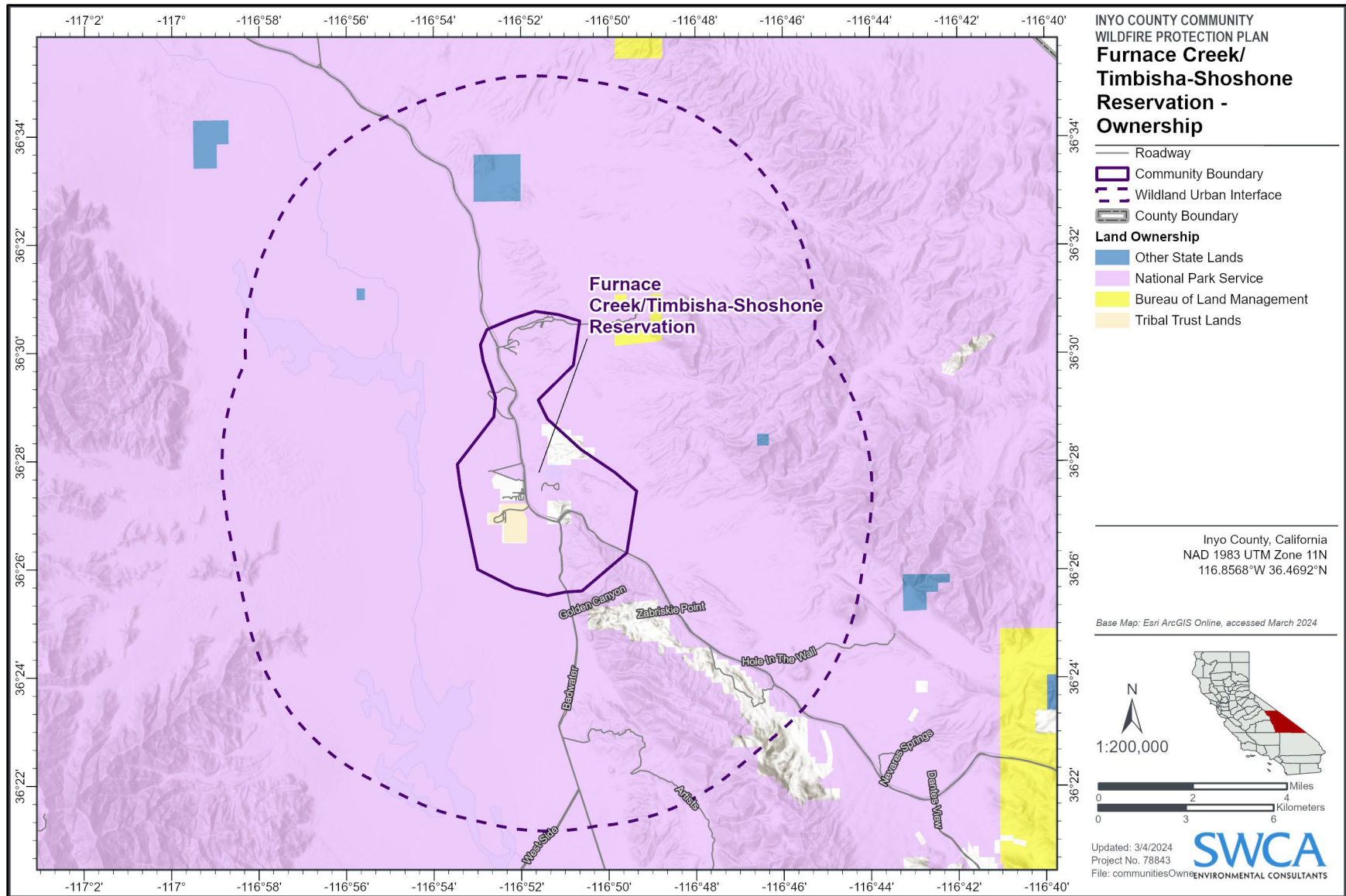


Figure D.75. Land ownership around Furnace Creek/Timbisha-Shoshone Reservation.

HOMEWOOD CANYON

Community Background

Community Name: Homewood Canyon

Total Score: 109 (High)

Land Area (acres): 2156

Fire Protection District Status: None

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Good separation of adjacent structures
- Mixed fencing materials (rocks, metal, wood)
- Reflective street signs present
- Relatively low light fuel loading (some areas have high shrub fuel loading)
- Main access road is wide and paved throughout the majority of its length
- Some structures are hardened (metal siding)

Negative Attributes (High Scores)

- 1 road in and out
- Limited defensible space for most structures
- Community is situated in a canyon, with properties located on ridges and saddles
- Many older structures in variable conditions
- Properties and open lots with copious amounts of debris and rubbish
- Community is in an isolated and remote location far away from fire response resources
- Combustible house siding and roofing
- Gas and electric utilities aboveground
- Lack of water resources
- Road is unmaintained, unpaved, and narrow toward the west end; some sections are steep with tight curves
- Long, unmarked driveways with poor vegetation clearance
- Address signs are non-reflective and some are missing altogether

Suggested Recommendations

- Collaborate with property owners to install and/or upgrade address markers
- Engage community to explore options for water resource development
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Explore options to initiate debris cleanup events
- Maintain roadside clearance along Homewood Canyon Rd
- Conduct outreach about evacuation planning procedures, defensible space, and home hardening
- Identify alternative evacuation routes and/or temporary refuge areas
- Develop a community evacuation plan
- Seek to establish fire protection agreements and strategies with the closest FPD or establish a nexus with the responding agency
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)
- Collaborate with private landowners to determine the need and feasibility for turnarounds or parking areas for emergency vehicle use on driveways and private roads longer than 300 feet

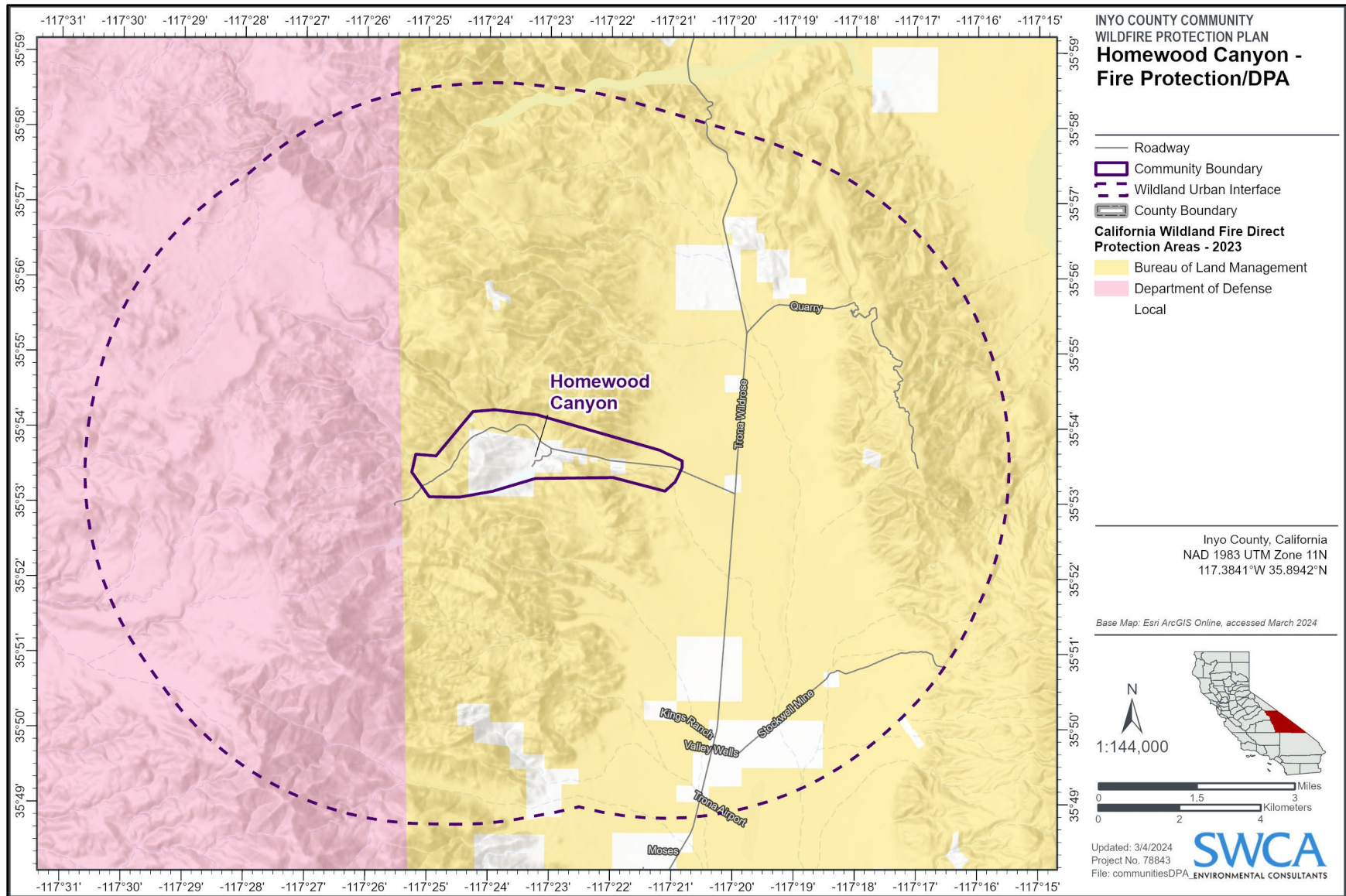


Figure D.76. Direct protection area and fire protection district boundary around Homewood Canyon.

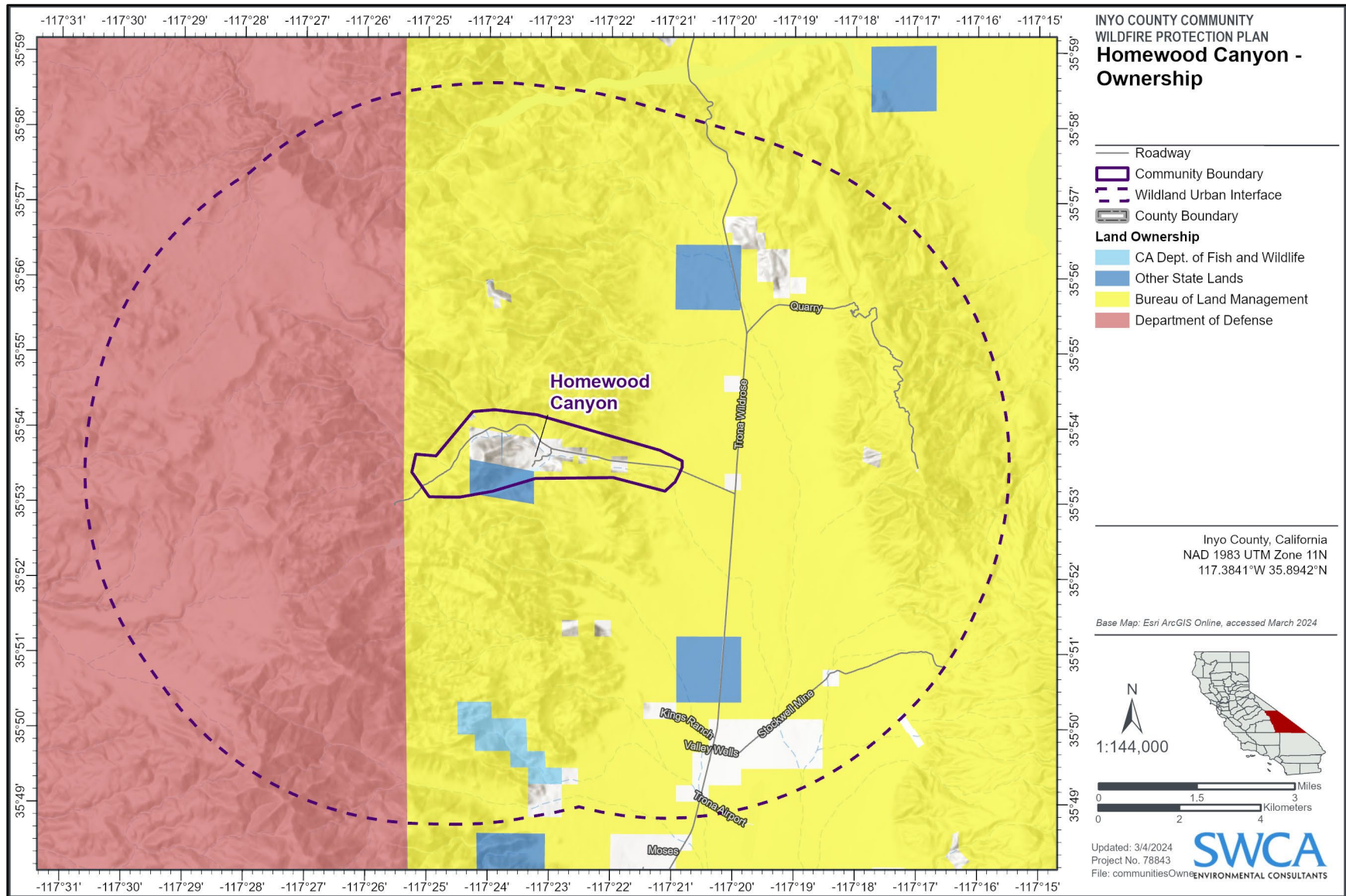


Figure D.77. Land ownership around Homewood Canyon.

KEELER

Community Background

Community Name: Keeler

Total Score: 95 (High)

Land Area (acres):470

Fire Protection District Status: Within the SOI of Lone Pine Volunteer Fire Department

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Wide roads, surfaced roads
- Easily accessible to fire response, allowing for vehicles to turn around
- Reflective street signs present
- Relatively flat topography
- Hydrant present (unknown condition)
- Fire station within community (assuming Keeler fire station is functional)

Negative Attributes (High Scores)

- Combustible roof, siding, deck and fencing materials
- Poor defensible space for most structures
- Poor separation of adjacent structures
- Electric and gas utilities aboveground
- Heavy shrub loading close to structures, heavy loading of invasive tamarisk within the community
- Older structures, some collapsed
- Excess debris and rubbish on some lots

Suggested Recommendations

- Conduct an assessment on the condition of the hydrants to determine if maintenance or upgrades are needed
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Explore options to initiate debris cleanup events
- Conduct outreach about defensible space, home hardening, and invasive species management
- Assess fuel loads, particularly invasive species (tamarisk), and create a control plan to reduce invasive species
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)

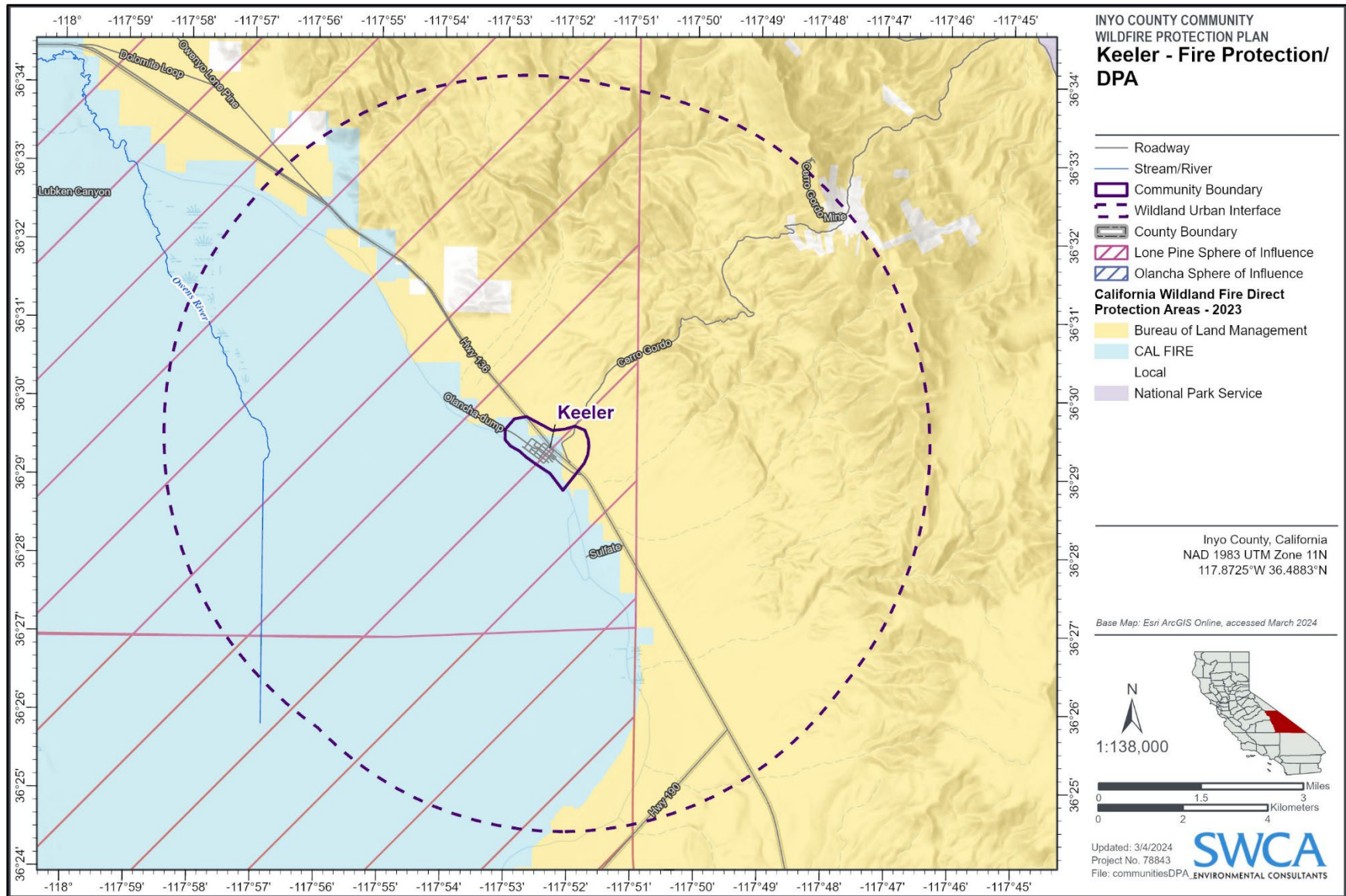


Figure D.78. Direct protection area and fire protection district boundary around Keeler.

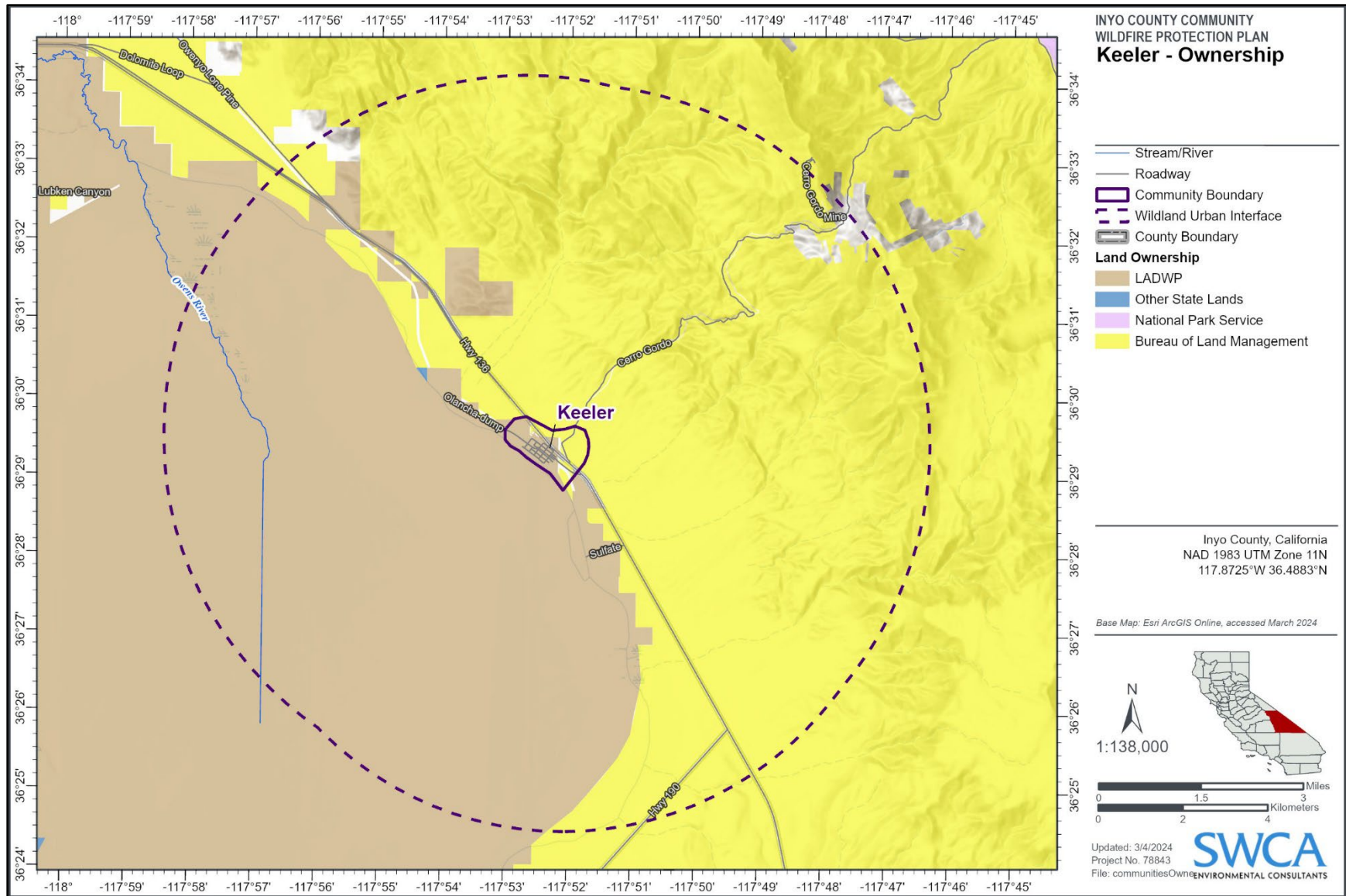


Figure D.79. Land ownership around Keeler.

Note: The land ownership data used in this map was obtained from the California State Geoportal. Please note that this data may contain discrepancies..

SHOSHONE

Community Background

Community Name: Shoshone **Total Score:** 69 (Moderate) **Land Area (acres):** 549

Fire Protection District Status: Within the jurisdiction of Southern Inyo Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Relatively flat, surfaced roads
- Easily accessible to fire response, allowing for vehicles to turn around
- Reflective street signs
- Low angle slopes around structures
- Fire station near most of community

Negative Attributes (High Scores)

- Poor defensible space for most structures
- Combustible roof, fence, deck and house siding materials
- Gas and electric utilities are aboveground
- Abandoned buildings present
- Lack of water resources
- Excess rubbish and debris on some properties

Suggested Recommendations

- Explore options to install hydrants or strategic placement of additional water tanks
- Work with private land owners/commercial operators (e.g., cannabis facility) to improve access to water resources
- Explore options to initiate debris cleanup events
- Conduct outreach about defensible space, home hardening, and invasive species management
- Assess options to enhance communications systems
- Assess community capacity for defensible space implementation to determine needs
- Explore restoration opportunities along Amargosa River regarding invasive tamarisk removal particularly in one 200-acre area
- Encourage homeowner implementation of defensible space standards (see Appendix J)

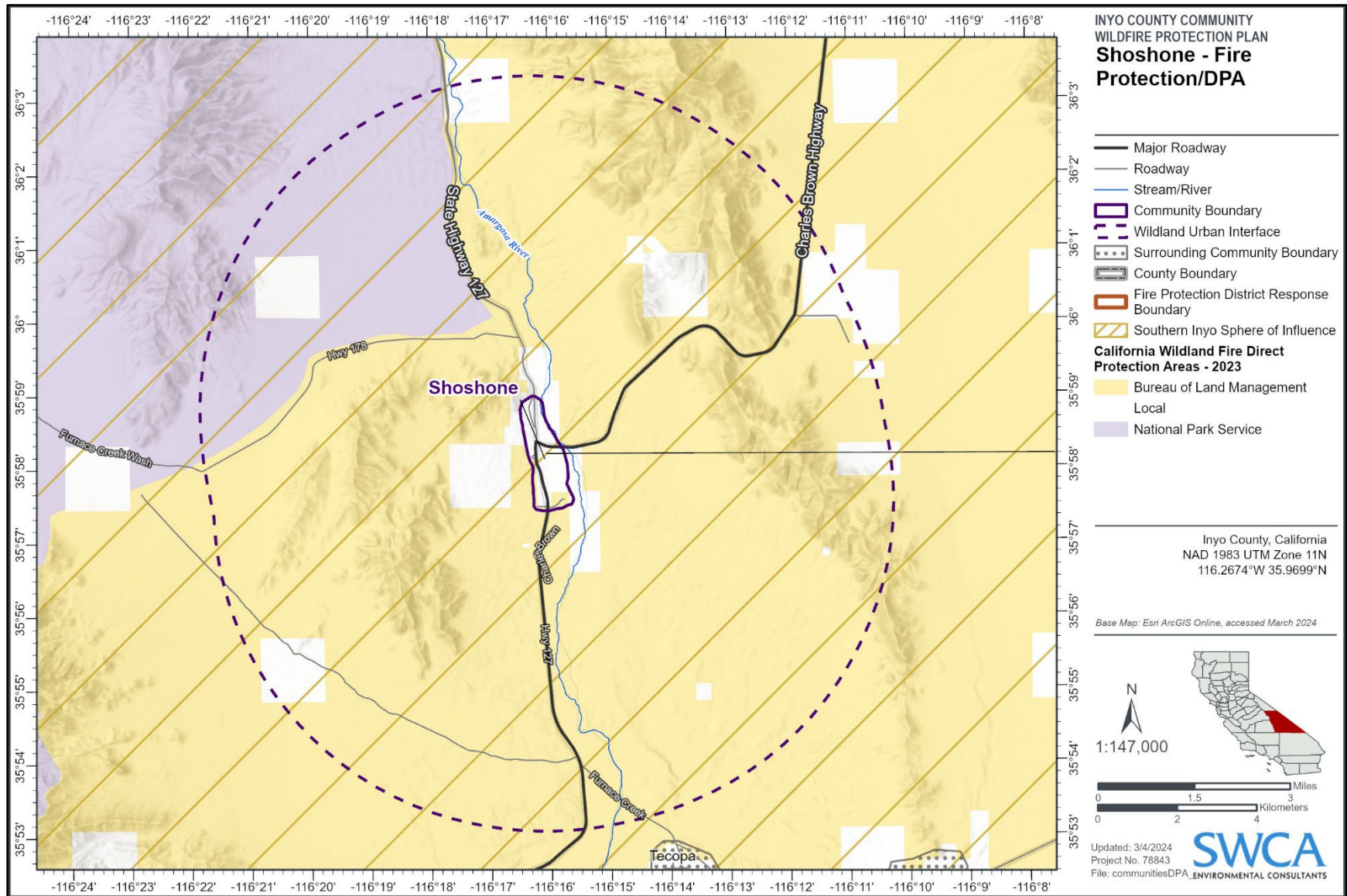


Figure D.80. Direct protection area and fire protection district boundary around Shoshone.

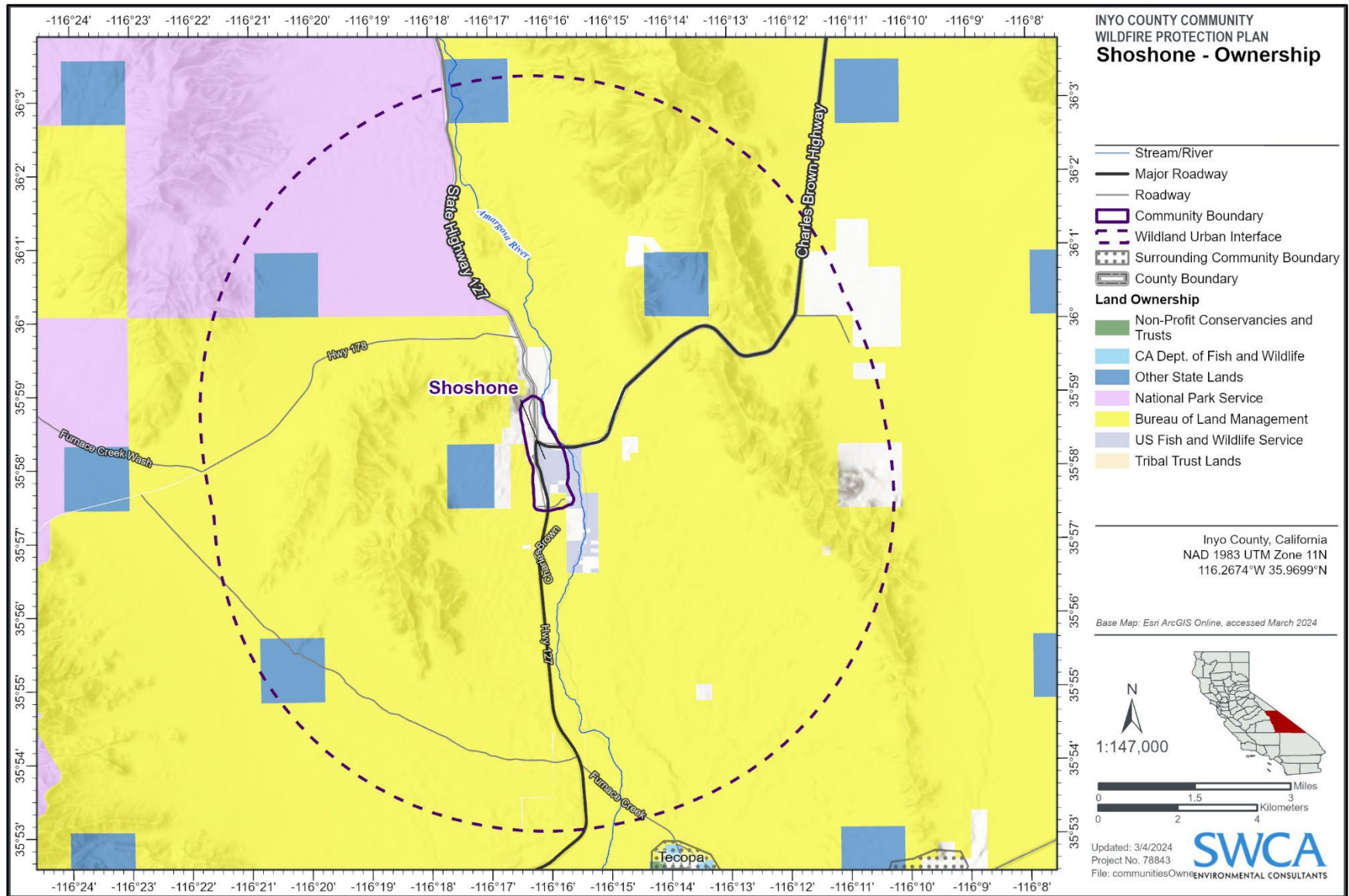


Figure D.81. Land ownership around Shoshone.

TECOPA

Community Background

Community Name: Tecopa

Total Score: 76 (High)

Land Area (acres): 5,483

Fire Protection District Status: Within the jurisdiction of Southern Inyo Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Relatively flat, surfaced roads
- Easily accessible to fire response, allowing for vehicles to turn around
- Reflective street signs
- Low angle slopes around structures
- Non-combustible deck and fencing
- Fire station near most of community
- FDP had completed and been working to reduce fuels

Negative Attributes (High Scores)

- Limited defensible space
- History of high fire occurrence
- Combustible siding and roofing materials
- Limited water source
- Gas and electric utilities are aboveground
- Dead mesquite by Old Spanish Trail
- 3 hydrants are non-functioning
- Frequent ignitions from fireworks, negligence
- Limited coverage of communications system
- FPD lacks a proper fire station to shield equipment and vehicles from the elements
- China Ranch: property is situated within a canyon with only way in and out via a narrow, unpaved, and steep road

Suggested Recommendations

- Maintain hydrants to ensure proper functioning
- Explore options to install hydrants or strategic placement of additional water tanks
- Work with private land owners/commercial operators (e.g., cannabis facility) to access water resources
- Assess overgrown creeks with dead and dried vegetation to direct restoration efforts and to manage mesquite within the surrounding region
- Facilitate connections between residents and available funding streams and programs to support home hardening projects
- Explore options to initiate debris cleanup events
- Assess options to enhance communications systems
- China Ranch to continue fuels work with CDFW; work to build this partnership with more volunteer base such as the Amargosa Conservancy; leverage this project to do other similar restoration and fuels work in riparian areas
- Continue collaboration with BLM to open an additional fire station
- Continue grant acquisition efforts to build a fire station to house vehicles and equipment in Tecopa
- Assess community capacity for defensible space implementation to determine needs
- Encourage homeowner implementation of defensible space standards (see Appendix J)

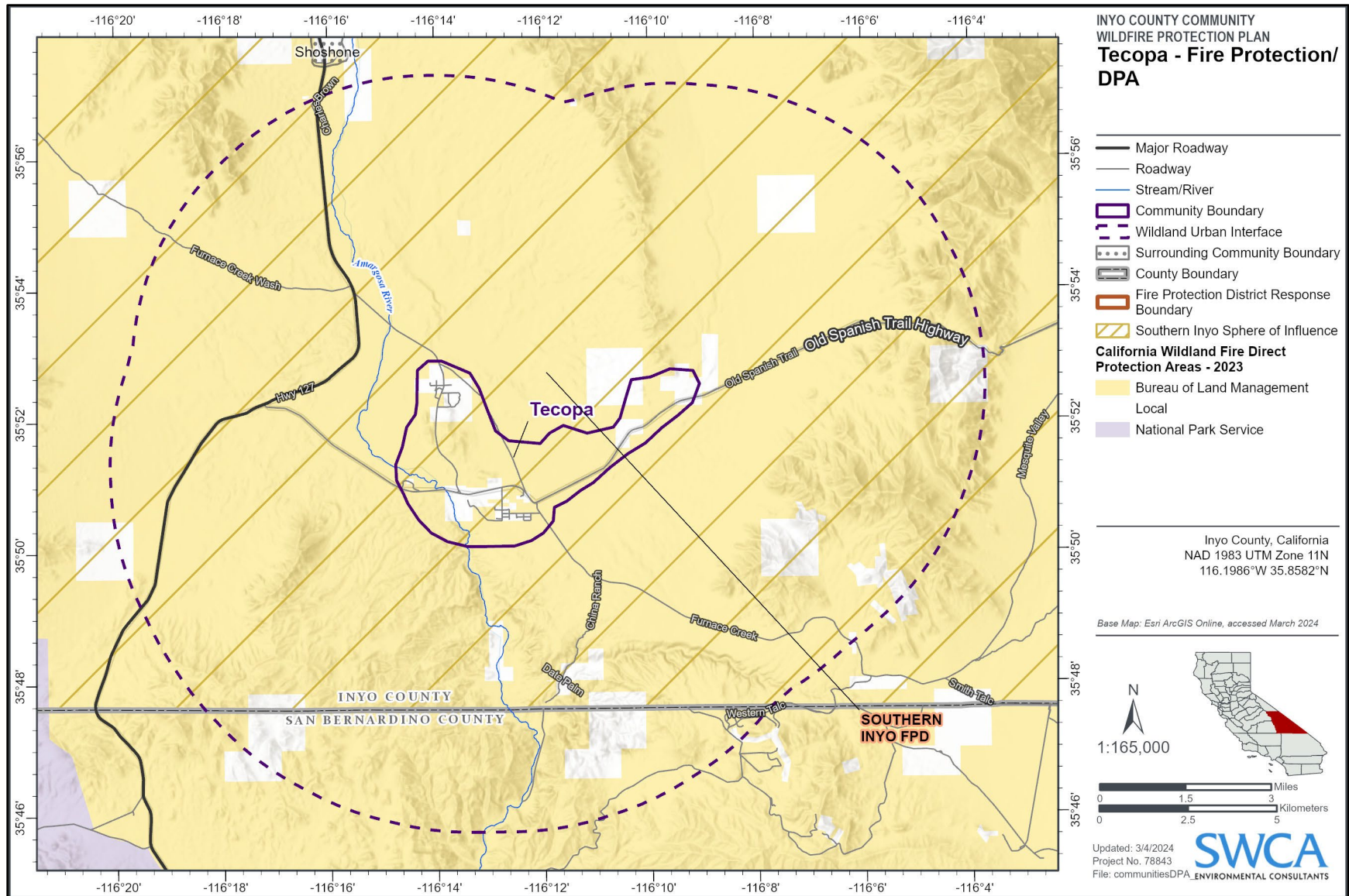


Figure D.82. Direct protection area and fire protection district boundary around Tecopa.

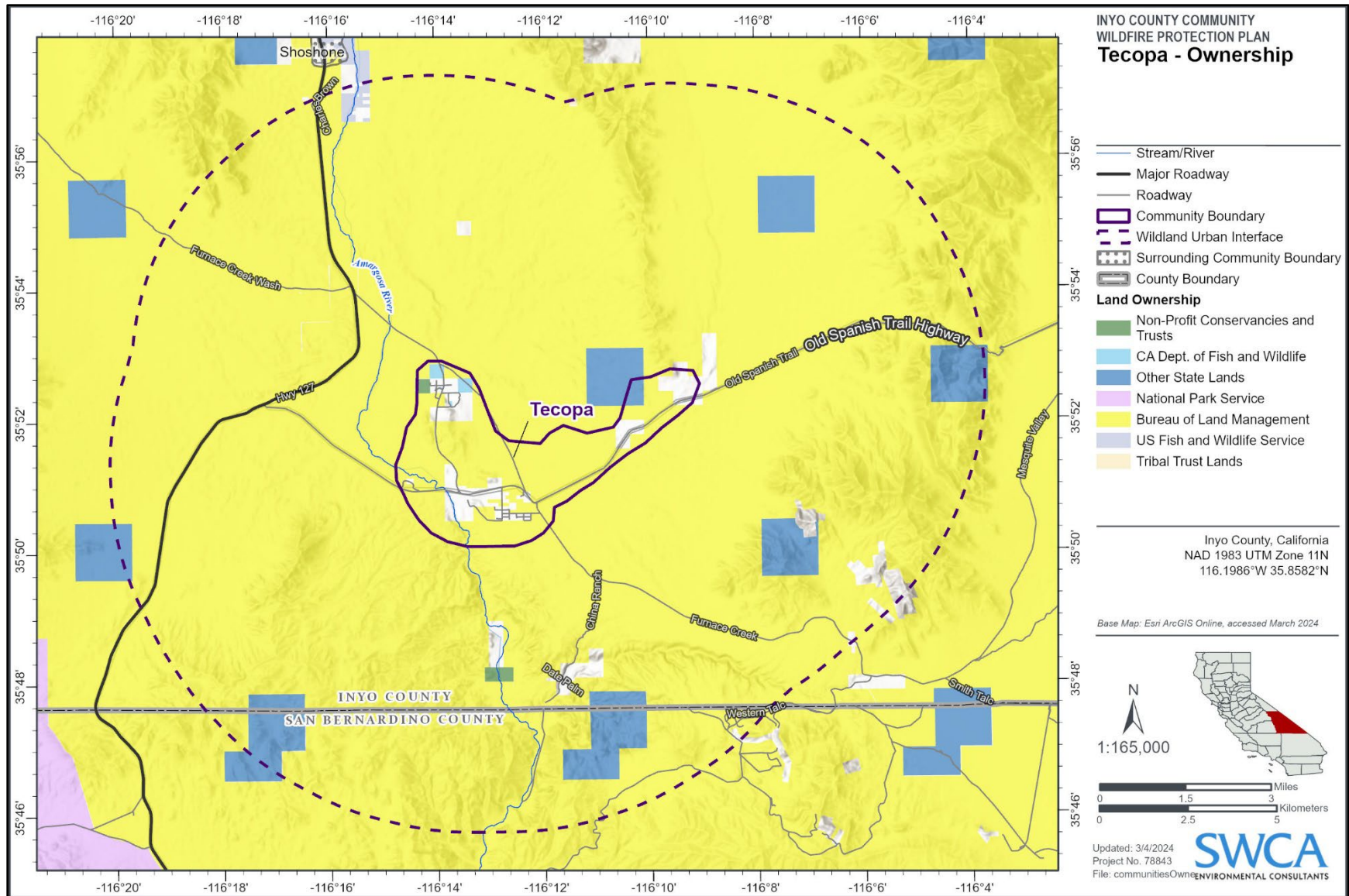


Figure D.83. Land ownership around Tecopa.

INDEPENDENCE AND 40 ACRES CWPP COMMUNITY ASSESSMENT SUMMARIES¹

Note: detailed mitigation actions for 40 Acres and Independence and associated communities are listed in the respective CWPPs. Please refer to Chapter 4 of the 40 Acres and Independence CWPPs for more specific information.

40 ACRES

Community Polygon Background		
Community Polygon Name: 40 Acres	Total Score: 87 (high)	Land Area (acres): 43
Fire Protection District Status: Within the SOI of Bishop Fire Department		

1144 Survey Summary Highlights	
<p><u>Positive Attributes (Low Scores)</u></p> <ul style="list-style-type: none"> 2 or more roads in and out of community Surfaced roads with < 5% grade Street signs present and reflective Low angle slopes around structures, decks, and fences 	<p><u>Negative Attributes (High Scores)</u></p> <ul style="list-style-type: none"> Narrow roads < 20 feet in width less than 30 feet of defensible space for most structures Fire access is less than 300 feet with no turnaround Complex topography/terrain History of high fire occurrence Potential for severe fire weather Little separation of adjacent structures Combustible house siding Predominantly combustible roofing material Predominantly combustible deck and fence material greater than 5 miles from a fire station Gas and electric utilities are aboveground Grass Shrub (GS) is primary predominant vegetation Significant dead and dying fuels within community and adjacent areas/ditches Limited water availability

Suggested Mitigation Focus Area
<p><u>Areas of Concern:</u></p> <ul style="list-style-type: none"> North, east, and south sides have high grass-shrub loading North and east sides have heavy riparian fuels with some dead and downed logs along ditches Southwest corner has a heavy riparian fuel bed leading into the community from the wildlands

¹ Adopted from Independence and 40 Acres CWPPs

Suggested Mitigation Focus AreaFire Department Concerns:

- Ingress and egress
 - Ocean View Rd with no outlet
 - Potential bottlenecks with fire response vehicles going in and residents going out
 - Round Valley Rd is currently closed, causing longer response times
- Lack of defensible space in the community
 - Improper propane tank and woodpile clearance
- Compliance with evacuation orders
- Trees and/or branches leaning on power poles and lines

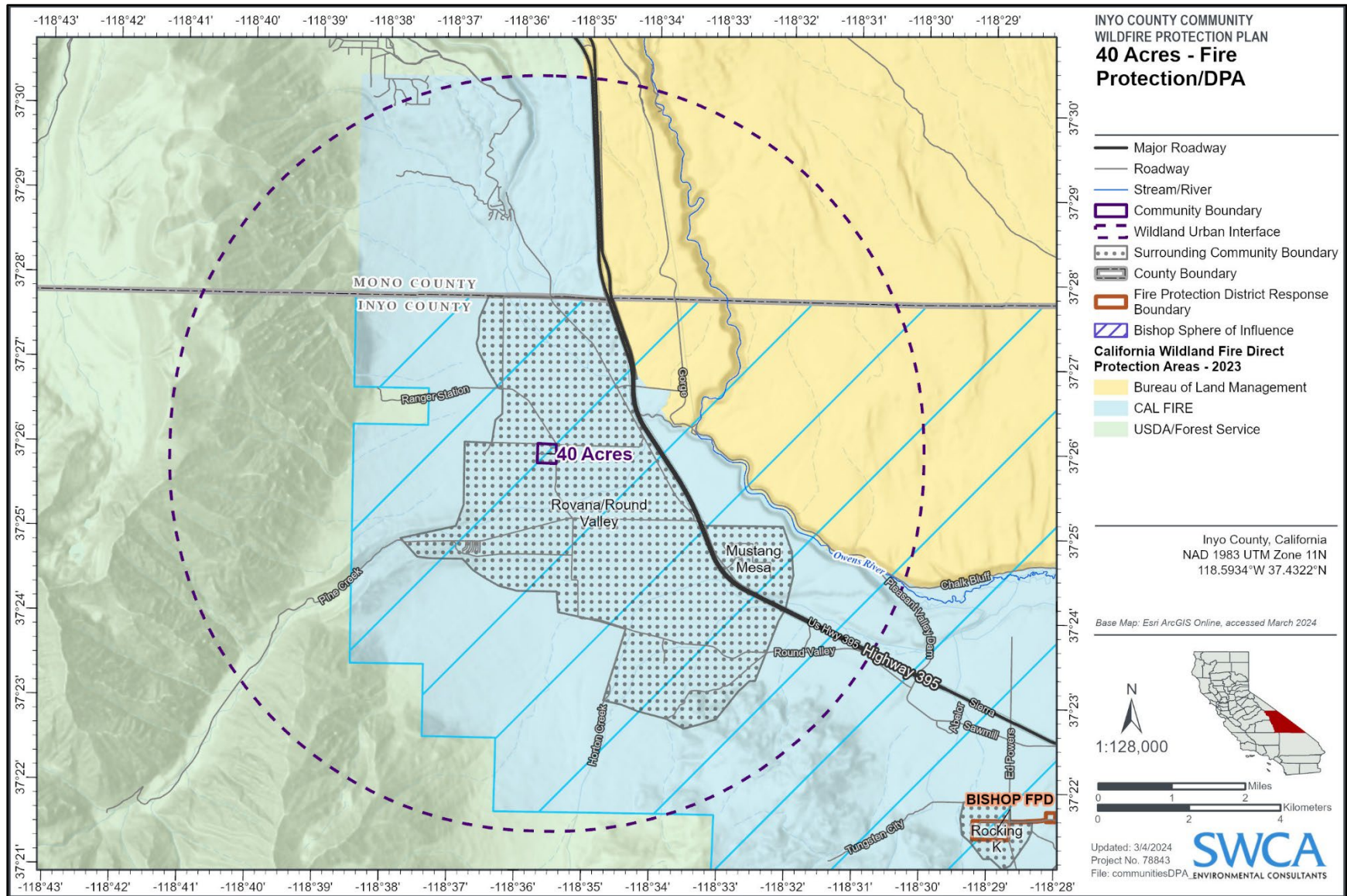


Figure D.84. Direct protection area and fire protection district boundary around 40 Acres.

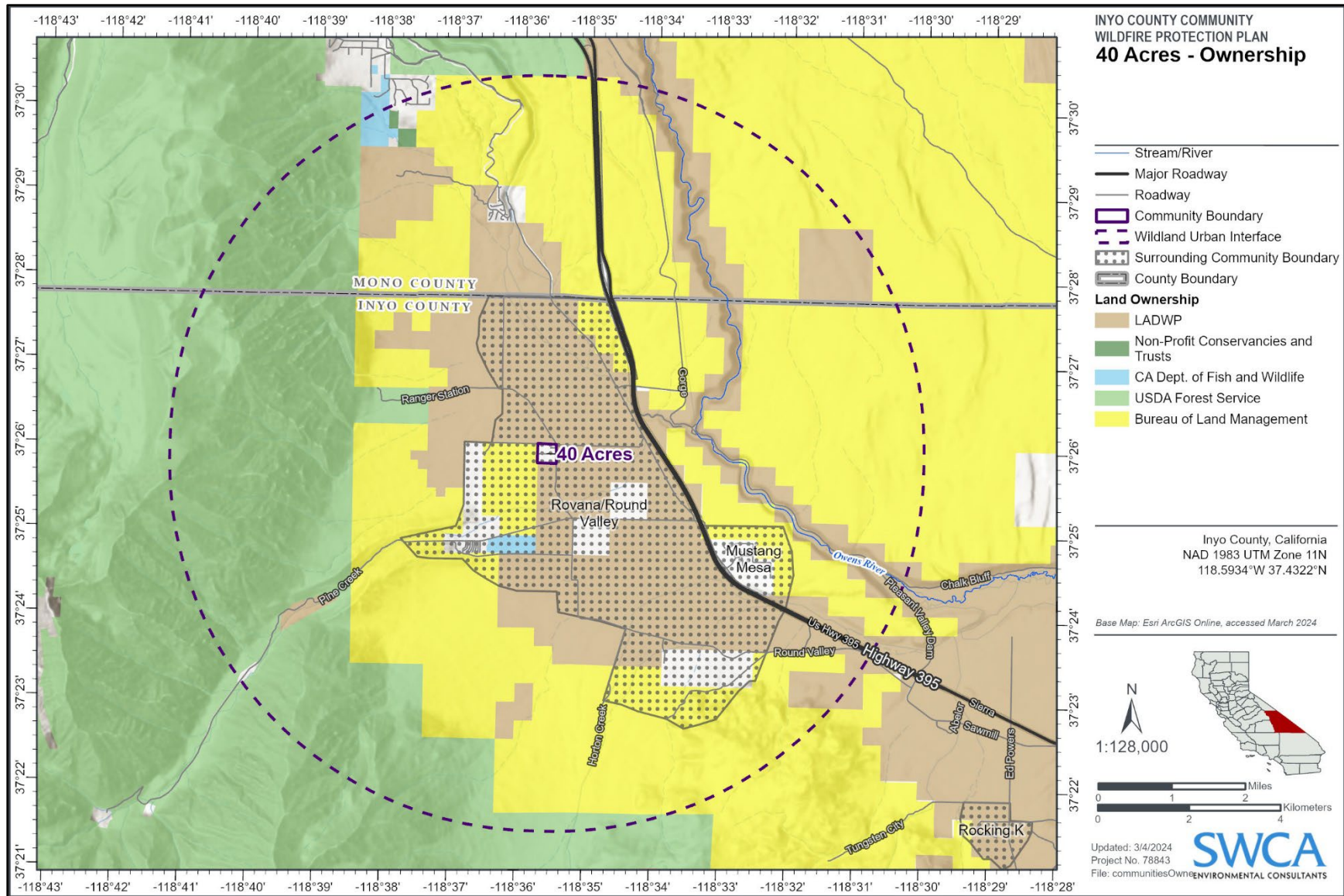


Figure D.85. Land ownership around 40 Acres.

FORT INDEPENDENCE

Community Background

Community Name: Fort Independence **Total Score:** 95 (High) **Land area (acres):** 397
Fire Protection District Status: Within the jurisdiction of Independence Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Most roads are relatively flat and surfaced
- Topography of community is relatively flat
- Most of the community is within 5 to 10 minutes from the fire station
- Fuels treatment projects east of community

Negative Attributes (High Scores)

- Limited turnarounds
- Relatively narrow roads
- Some roads lined with flammable fuels
- Driveway markers not always present
- Some dirt roads
- Heavy loading of dead/down fuels in community
- Many ditches are lined with heavy fuels
- Limited defensible space
- Severe fire weather potential
- Flammable decks/fence, house siding and roofing materials
- Poor fire hydrant visibility
- Gas and electric utilities are aboveground
- Exposed propane tanks

Suggested Mitigation Focus Area

Areas of Concern:

- Ditches and creeks have high fuel loading, particularly dead and downed trees
- Thick and dense stands of shrubs within the community and along the perimeter
- Excessive dead and downed trees within private and public lands
- Roadside fuels

Fire Department Concerns:

- Hydrants need a fresh coat of paint and a reflector
- IVFD's brush trucks and water tender are older vehicles
- Low flow hydrants

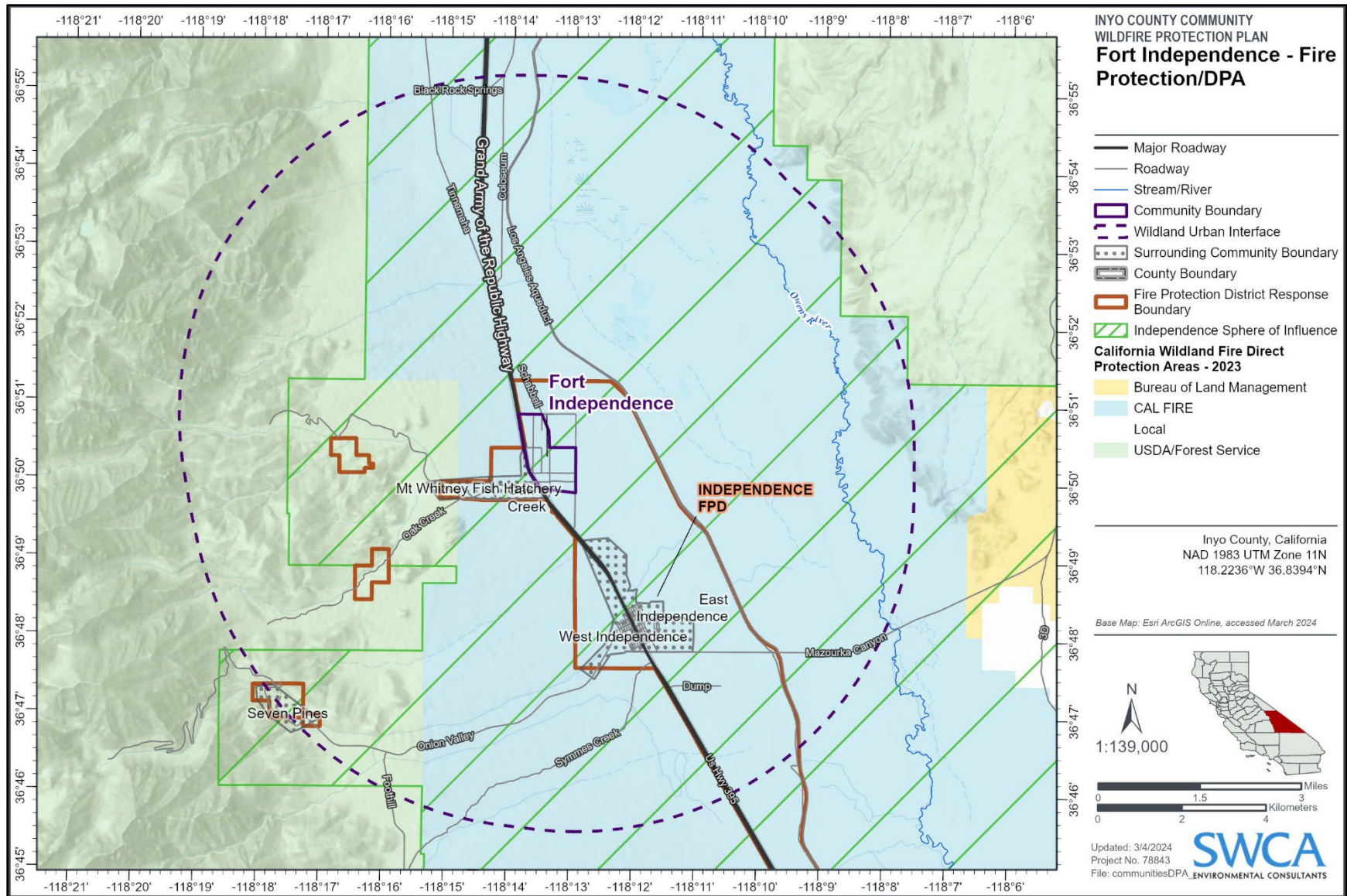


Figure D.86. Direct protection area and fire protection district boundary around Fort Independence.

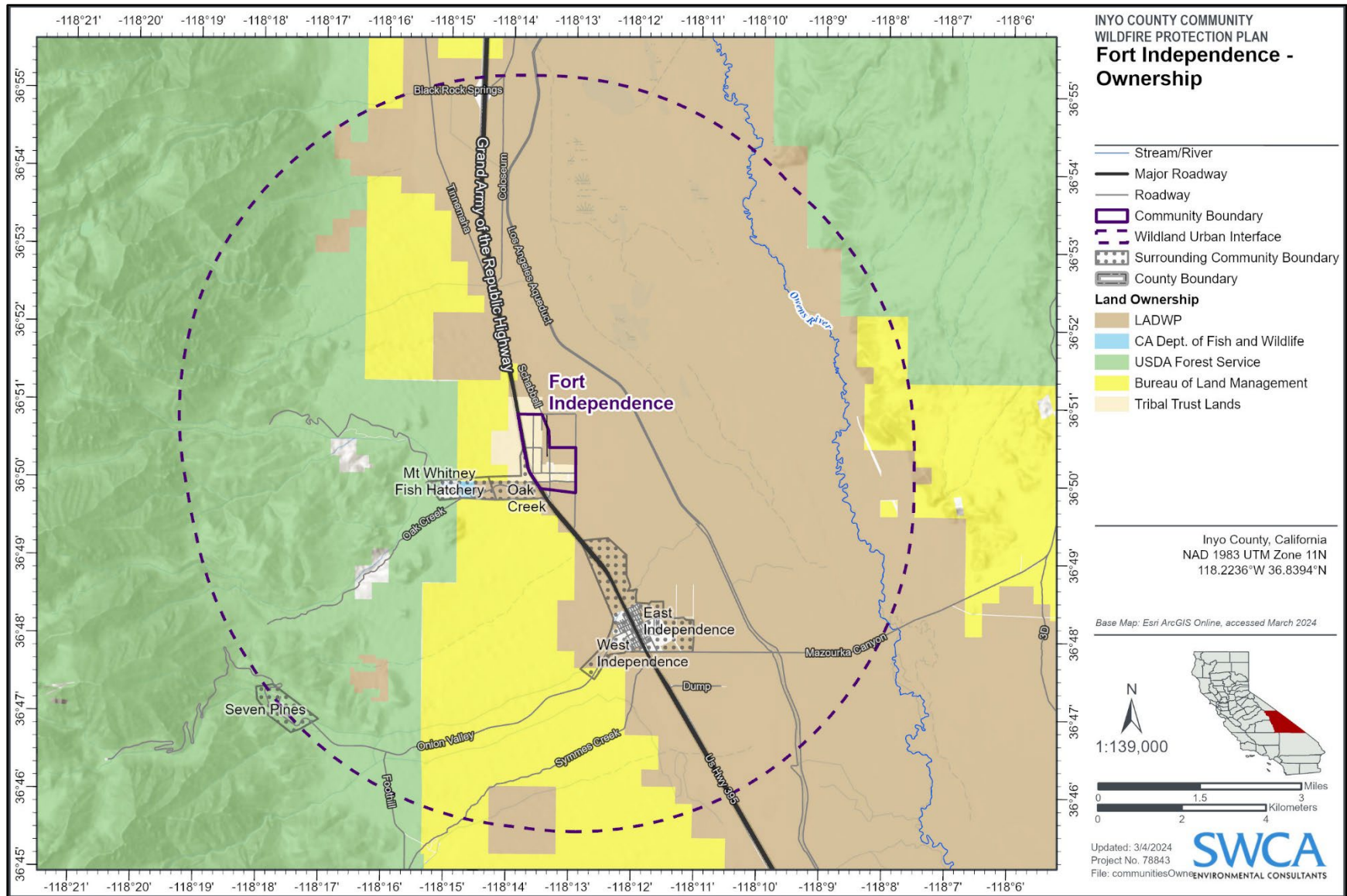


Figure D.87. Land ownership around Fort Independence.

EAST INDEPENDENCE

Community Background

Community Name: East Independence **Total Score:** 64 (Moderate) **Land area (acres):** 544
Fire Protection District Status: Within the jurisdiction of Independence Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Reflective street signs
- Easily accessible to fire response with wide roads for trucks to turn around
- 2 or more roads in and out
- Relatively flat, surfaced roads
- Reflective street signs
- Some structures with fire-resistant roofing
- Ample water sources
- Most of the community is within 5 minutes from the fire station

Negative Attributes (High Scores)

- Flammable grass and shrub fuels in northeast section of community
- Tree lot not maintained
- Flammable shrubs surrounding community
- Dead and down logs in irrigation ditches and Independence Creek
- Limited defensible space
- Combustible siding materials
- Lack of adequate separation between adjacent structures
- Severe fire weather potential
- Combustible decks/fencing
- Gas and electric lines are aboveground
- Exposed propane tanks next to woodpiles
- Fire hydrants not easily visible

Suggested Mitigation Focus Area

Areas of Concern:

- Valley View ditch has high fuel loading, particularly dead and downed trees
- LADWP tree lot and grass parcel
- Tall, dense, and continuous stands of shrubs along the perimeter of the community but particularly concentrated in the northeast section
- Dead and downed trees in Independence Creek

Fire Department Concerns:

- Hydrants need a fresh coat of paint and a reflector
- IVFD's brush trucks and water tender are older vehicles

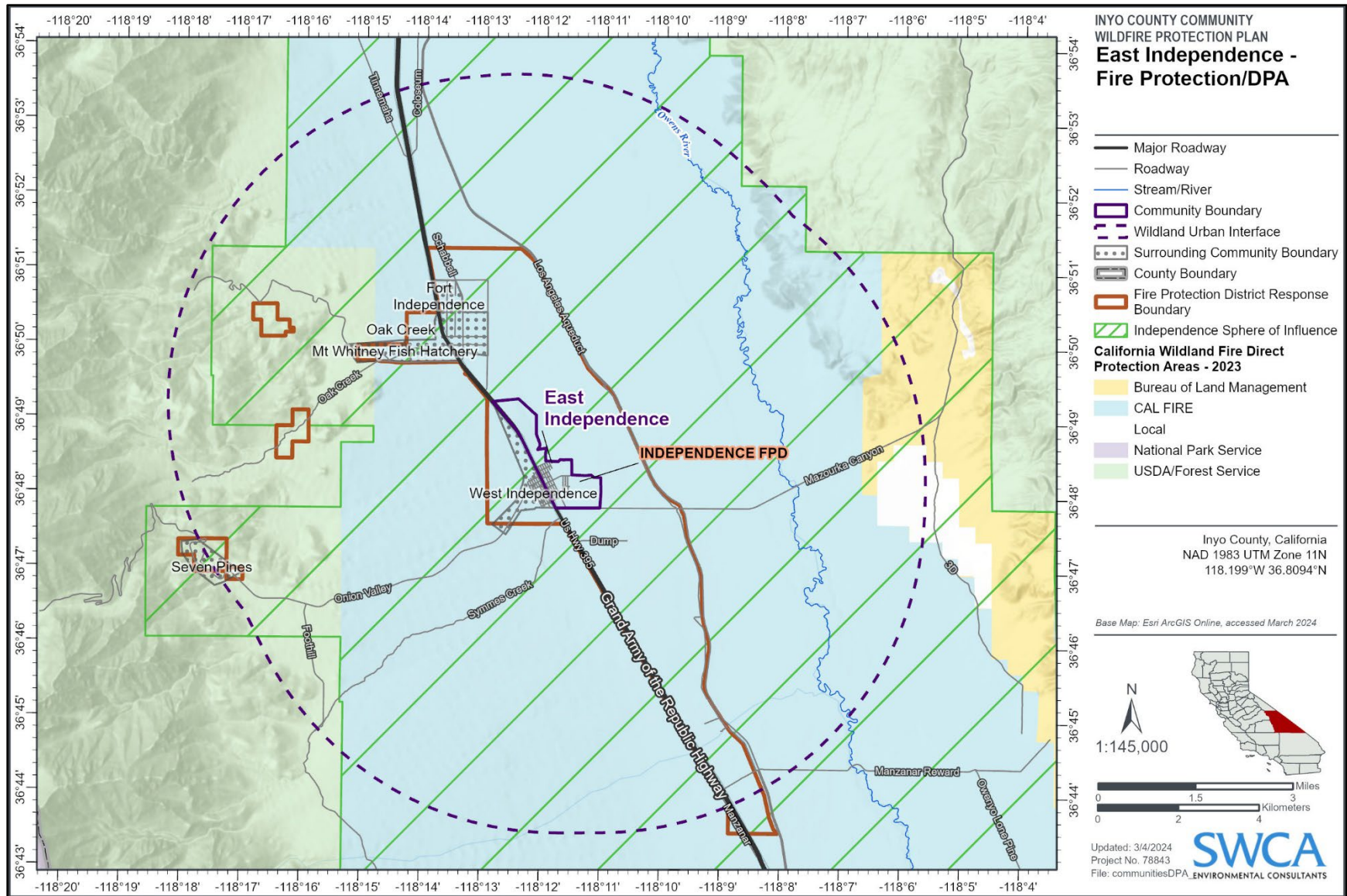


Figure D.88. Direct protection area and fire protection district boundary around East Independence.

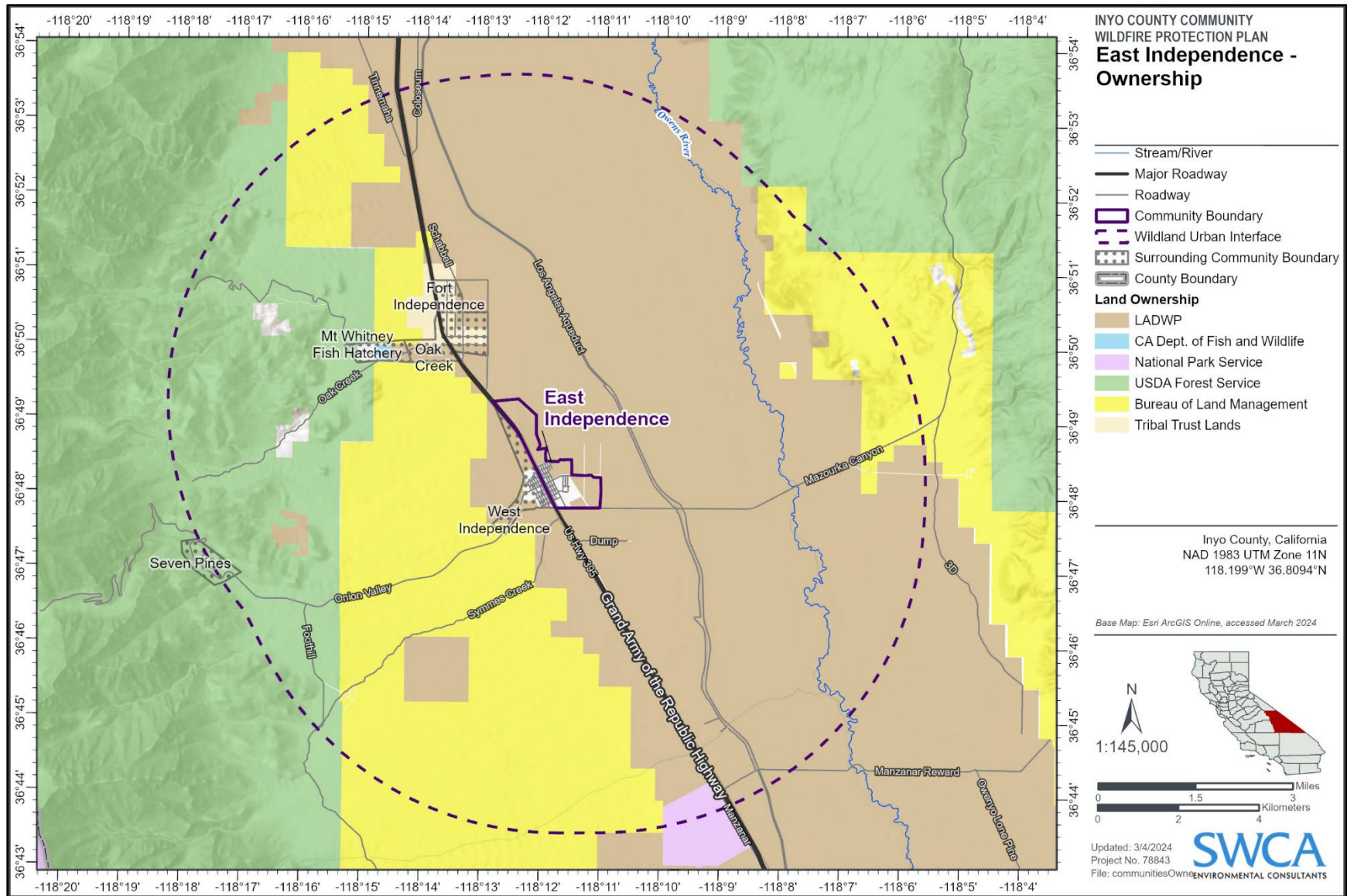


Figure D.89. Land ownership around East Independence.

SEVEN PINES

Community Background

Community Name: Seven Pines **Total Score:** 143 (Extreme) **Land Area (acres):** 209

Fire Protection District Status: Within the jurisdiction of Independence Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Street signs present
- Small, well-organized community
- Independence Creek flowing through center of community
- Recent wildfire west of community has reduced fuel loads
- Agency coordinated pre-fire planning
- Paved road leading up to community
- One large turnaround within community

Negative Attributes (High Scores)

- High fuel loads with needles in community
- Flammable shrub fuels lining access roads
- Limited defensible space
- Propane tanks exposed to flammable fuels
- Steep slopes within and surrounding community
- Non-surfaced roads with greater than 5% grade
- Limited turnarounds
- Non-reflective street signs
- Limited availability of water sources
- Combustible house siding
- Combustible roofing material
- One road in and out for whole community
- Community is more than 15 minutes away from nearest fire station
- Seasonal cabin use, with lack of home maintenance
- Dispersed camping to the east

Suggested Mitigation Focus Area

Areas of Concern:

- Ladder fuels within the cabin tracts and around the perimeter
- Area to the east of the cabins, where dispersed camping occurs
- Fuel loading along Independence Creek

Fire Department Concerns:

- Ingress and egress – Seven Pines Road is narrow and lined with grass-shrub fuels
- Water sources need development, e.g., installation of a water tank or hydrant
- Addressing and signposting
- Evacuation procedures

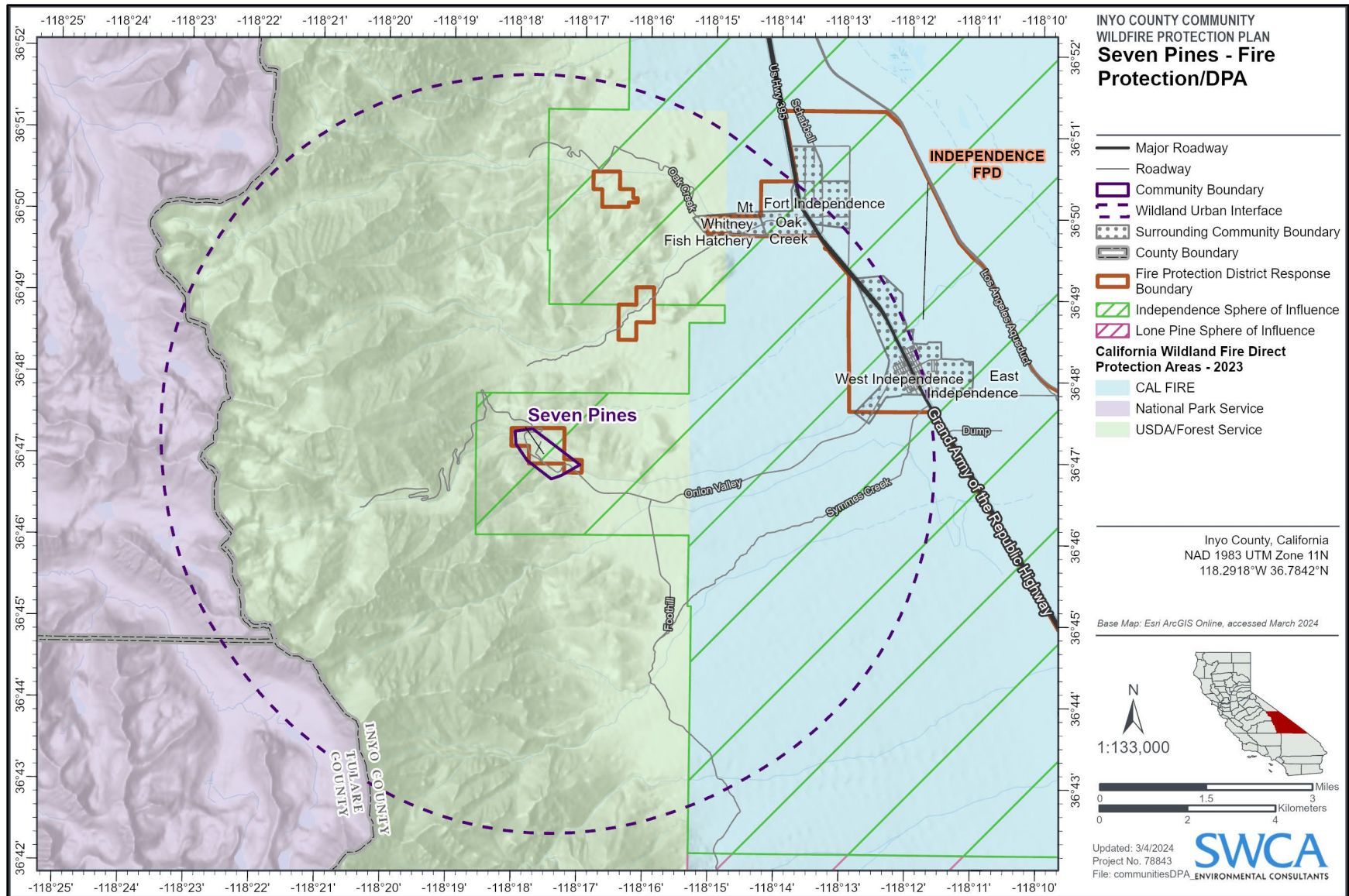


Figure D.90. Direct protection area and fire protection district boundary around Seven Pines.

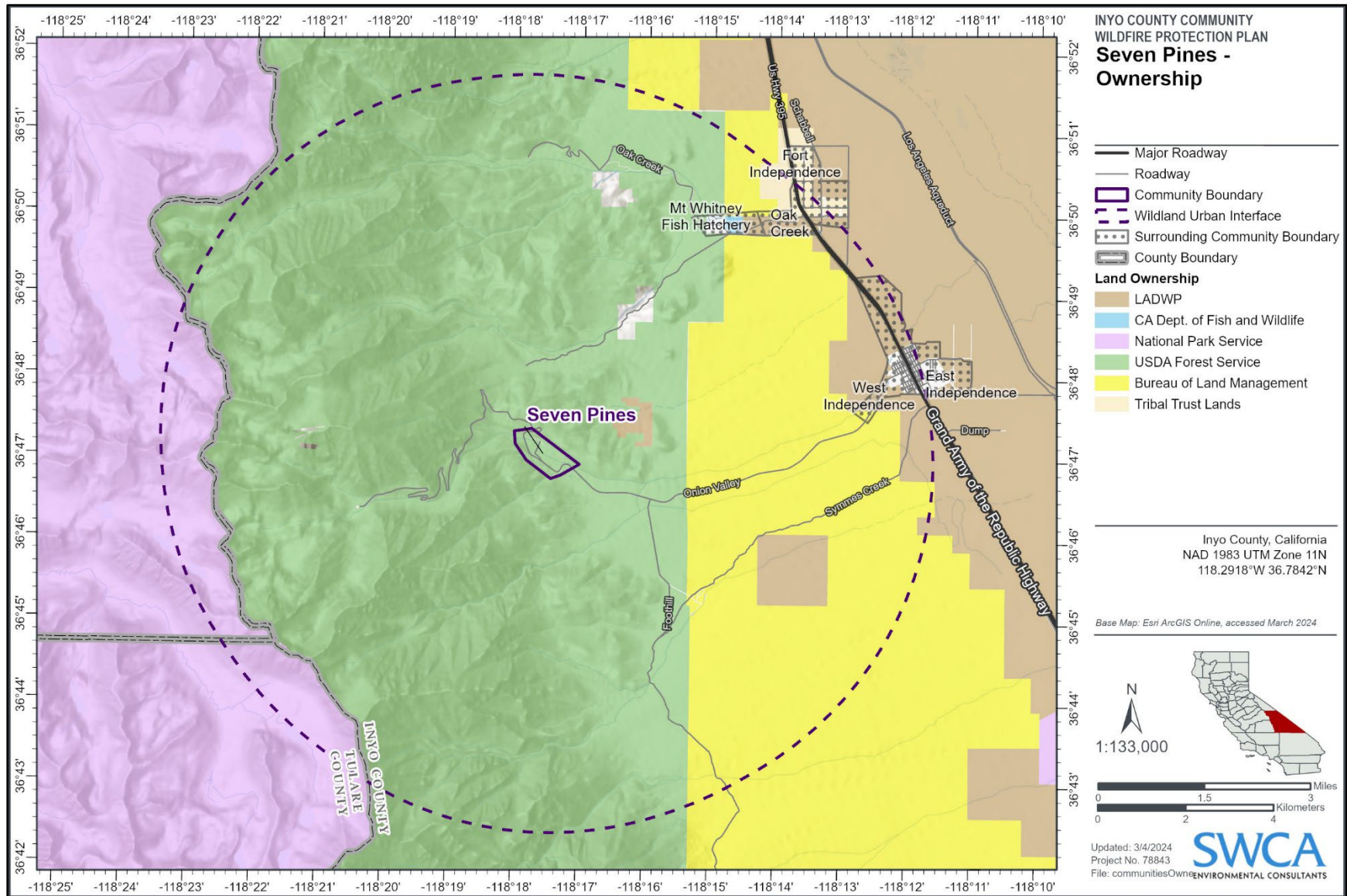


Figure D.91. Land ownership around Seven Pines.

WEST INDEPENDENCE

Community Background

Community Name: West Independence **Total Score:** 80 (High) **Land area (acres):** 326
Fire Protection District Status: Within the jurisdiction of Independence Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- 2 or more roads in and out
- Flat, well surfaced roads
- Accessible to fire response, ample ability to turn around (wide roads)
- Reflective street signs
- Onion valley road can function as a fuel break
- Fuel loading surrounding town consists of light grass-shrub
- Some structures with fire-resistant roofing
- Ample water sources
- Most of the community is near fire station
- Structures are well spaced

Negative Attributes (High Scores)

- Limited defensible space
- Exposed propane tanks next to woodpiles
- Fire hydrants are not easily visible
- Combustible decks, fences, and house siding materials
- Potential for severe fire weather
- Gas and electric lines are aboveground

Suggested Mitigation Focus Area

Areas of Concern:

- West side of community is exposed to shrubland fuels (Onion Valley fuel break addresses the concern)
- Concentration of dispersed camping to the west
- Potential of Independence Creek to act as a wick drawing fire into town

Fire Department Concerns:

- Hydrants need a fresh coat of paint and a reflector
- IVFD's brush trucks and water tender are older vehicles

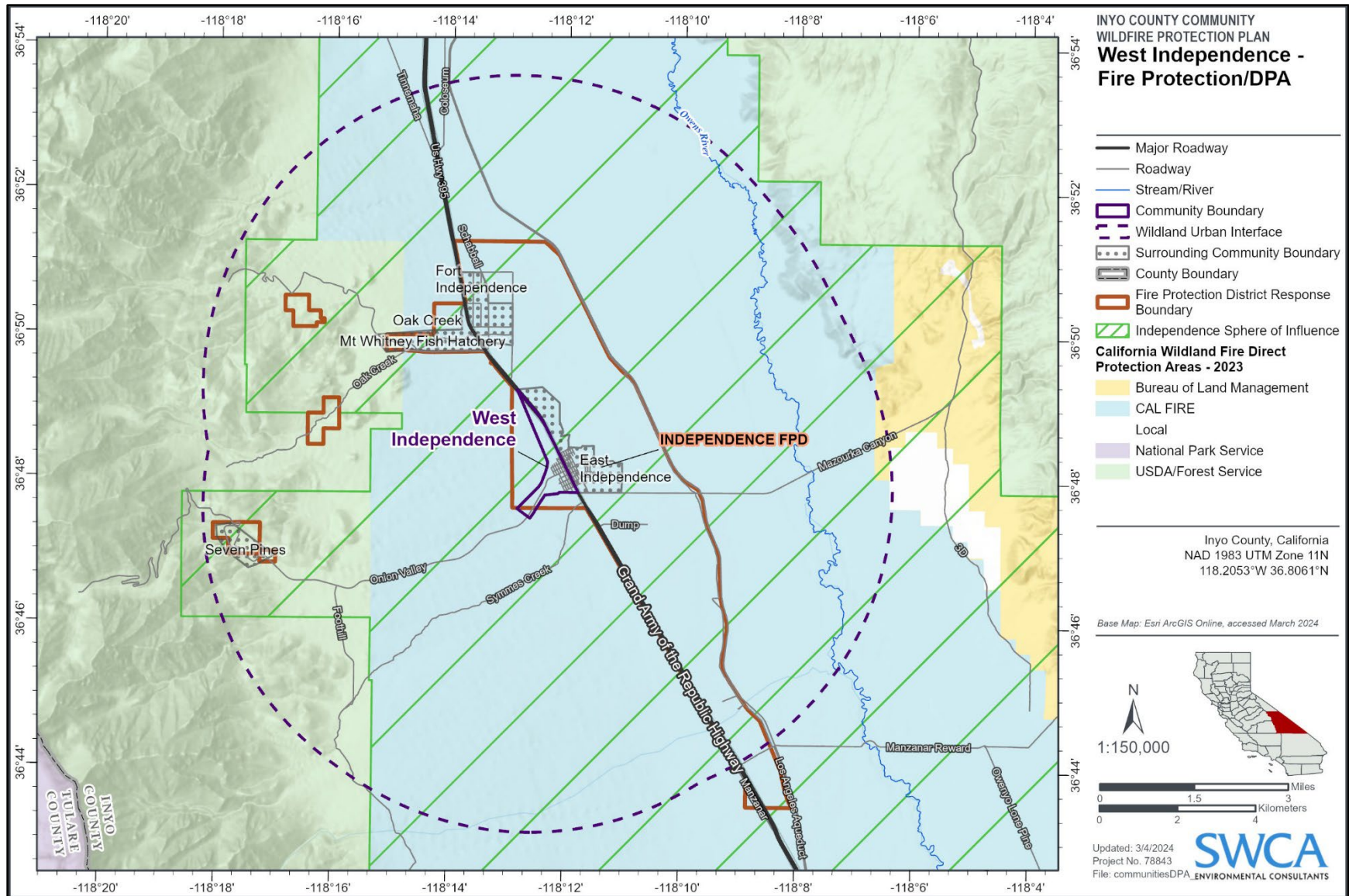


Figure D.92. Direct protection area and fire protection district boundary around West Independence.

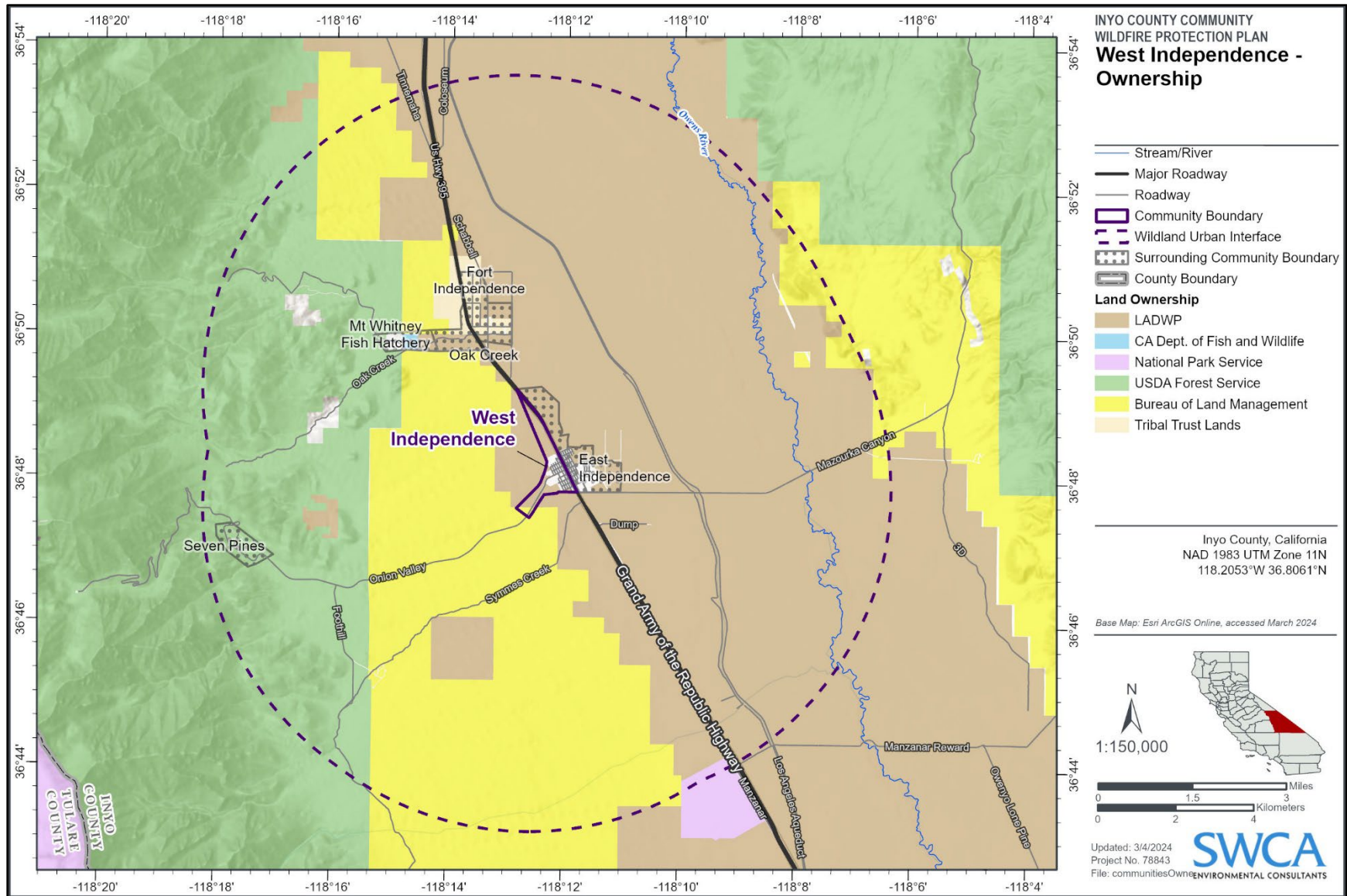


Figure D.93. Land ownership around West Independence.

MOUNT WHITNEY FISH HATCHERY

Community Background

Community Name: Mount Whitney Fish Hatchery **Total Score:** 76 (High) **Land area (acres):** 169

Fire Protection District Status: Within the jurisdiction of Independence Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Relatively flat, surfaced roads
- The Hatchery has fire-resistant roofing
- Reflective street signs
- The Hatchery has good defensible space
- The Hatchery has non-combustible siding material
- Most of the community is relatively close to the fire station
- Has water in form of ponds, piping is in uncertain condition, grant was received to work on the pipes in the watershed

Negative Attributes (High Scores)

- Only 1 road in and out
- Relatively narrow roads
- Limited ability for fire trucks to turn around
- History of fire occurrence
- Severe fire weather potential
- Combustible decks/fences that are near a slope
- Limited water sources (requires pumping from a pond)
- Gas and electric utilities are aboveground

Suggested Mitigation Focus Area

Areas of Concern:

- Oak Creek has high fuel loading, particularly dead and downed trees
- Large quantities of dead and dry shrubs within the property
- Outbuildings are surrounded by dead shrubs and downed trees
- Ladder fuels to the northwest of the Hatchery: downed trees, wooden fences, and dry shrubs connect to structures

Fire Department Concerns:

- High fuel loads along the perimeter to the east, north, and west
- Large amounts of flammable debris and dead vegetation to the northwest of the historic building
- Escape routes
- Water supply

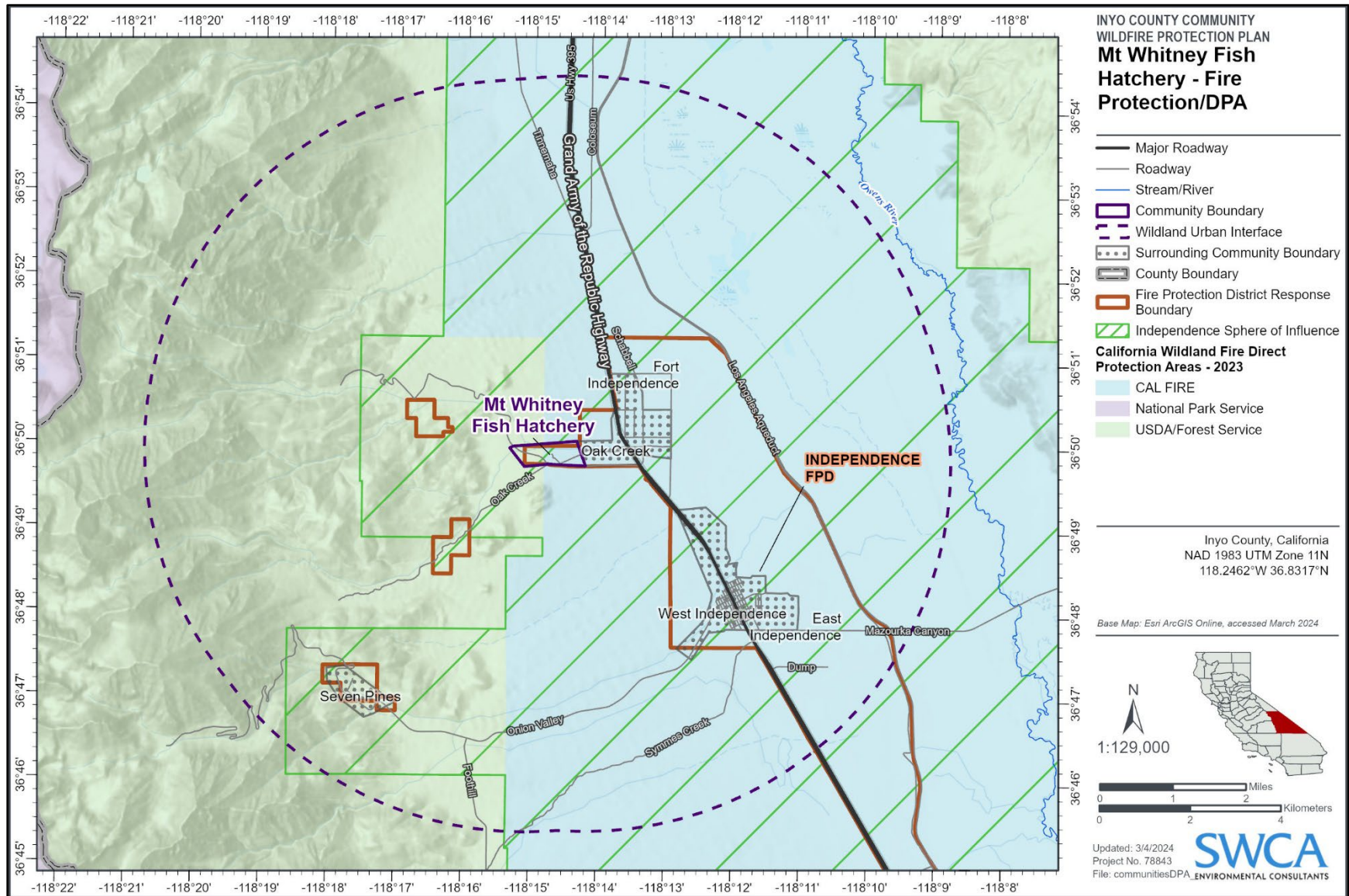


Figure D.94. Direct protection area and fire protection district boundary around Mount Whitney Fish Hatchery.

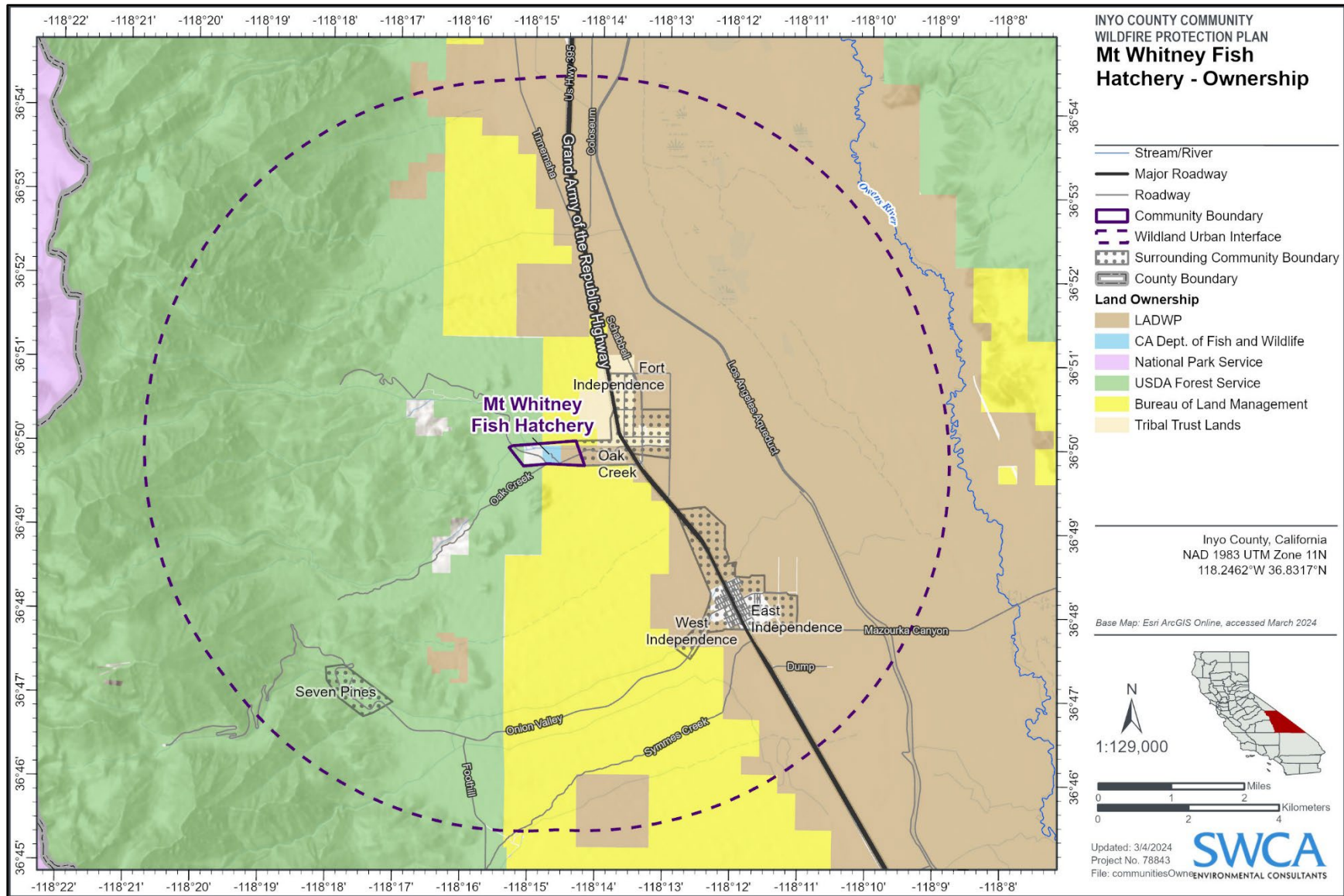


Figure D.95. Land ownership around Mount Whitney Fish Hatchery.

OAK CREEK

Community Background

Community Name: Oak Creek **Total Score:** 116 (Extreme) **Land area (acres):** 174
Fire Protection District Status: Within the jurisdiction of Independence Fire Protection District

1144 Survey Summary Highlights

Positive Attributes (Low Scores)

- Roads are flat
- Existing street signage is reflective
- Oak Creek runs through community
- Only 6-8 homes in community
- Most of the community is relatively close to the fire station

Negative Attributes (High Scores)

- Only 1 road in and out
- Roads are very narrow within community
- Roads are non-surfaced
- Flammable vegetation along roads
- No turnaround potential for fire trucks
- Difficult for fire trucks to access community
- No driveway markers
- Limited street signage inside community
- Heavy debris flows and fuel loading along banks of Oak Creek
- Limited defensible space
- Steep slopes in community
- Limited separation of adjacent structures
- Severe fire weather potential
- History of recent fire occurrence
- Combustible siding materials
- Limited water supply.
- Gas and electric utilities are aboveground
- Propane tanks exposed to dry fuels

Suggested Mitigation Focus Area

Areas of Concern:

- Oak Creek has high fuel loading, particularly dead and downed trees
- Excessive dead and downed trees within the community
- Abandoned houses and structures
- Roadside fuels

Fire Department Concerns:

- Limited water sources
- Ingress and egress – unpaved, unmarked, and unmaintained roads
- Lack of safe staging locations

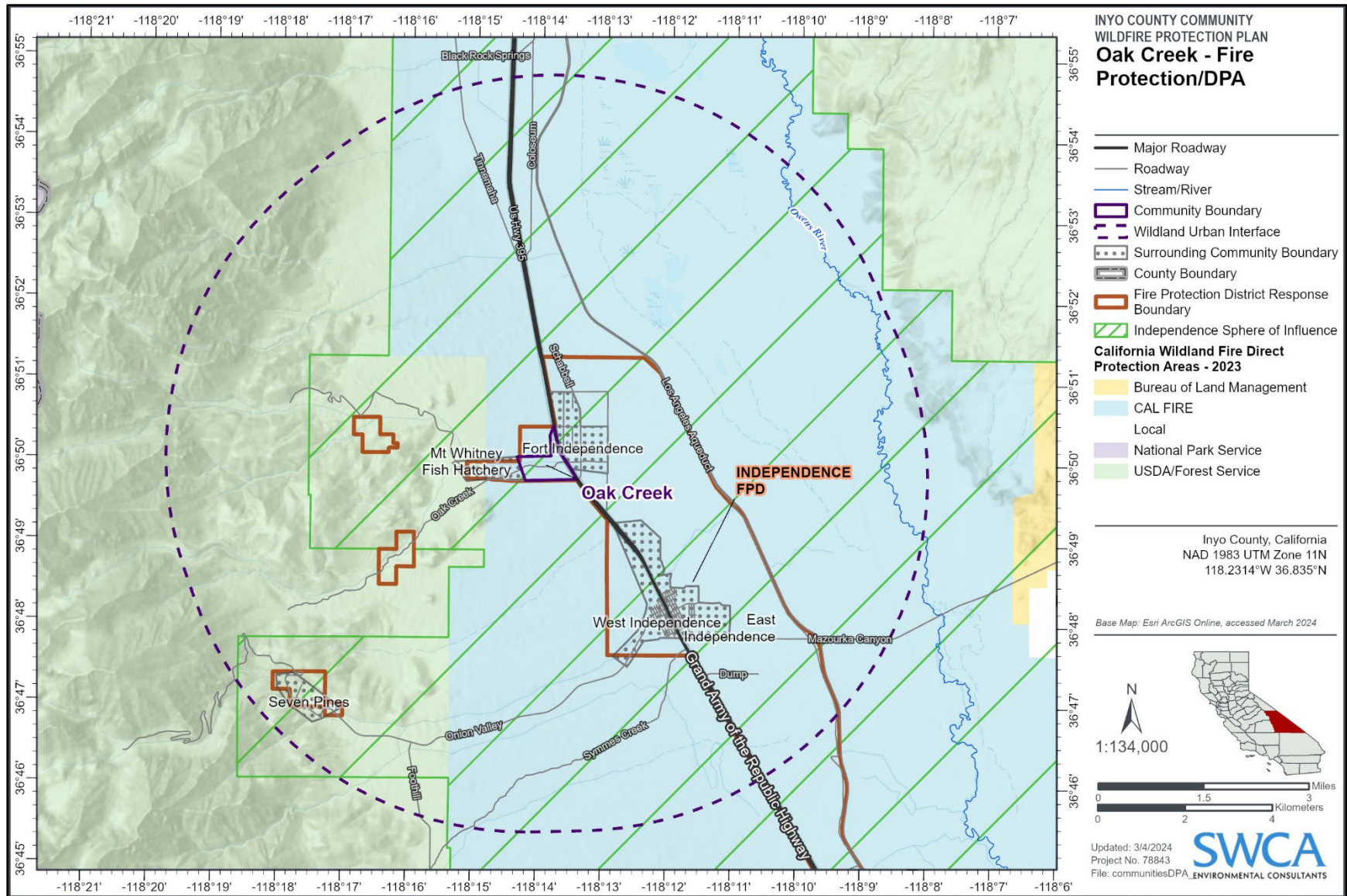


Figure D.96. Direct protection area and fire protection district boundary around Oak Creek.

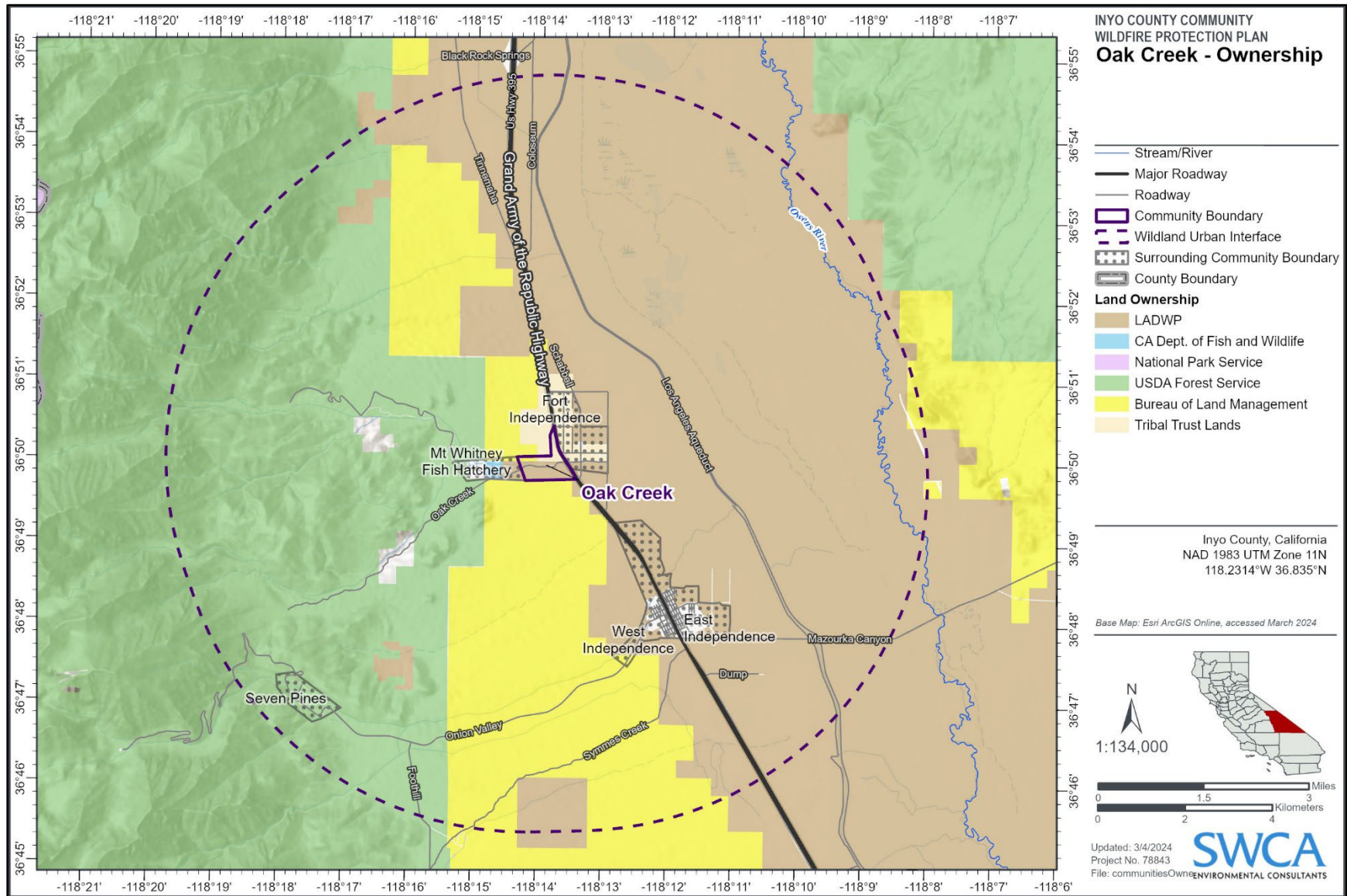


Figure D.97. Land ownership around Oak Creek.

SWCA

APPENDIX E:
NFPA 1144 Assessment Forms

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1144 NATIONAL FIRE PROTECTION ASSOCIATION ASSESSMENT FORM

SWCA – 1144 Assessment	
Community	Notes:
Surveyor	
Survey Date/Time	
Means of Access	
Ingress and Egress	
2 or more roads in and out 0	
1 road in and out 7	
Road Width	
> 24 ft 0	
> 20 ft < 24 ft 2	
< 20 ft 4	
Road Conditions	
Surfaced road, grade < 5% 0	
Surfaced road, grade > 5% 2	
Non-surfaced road, grade < 5% 2	
Non-surfaced road, grade > 5% 5	
Other than all season 7	
Fire Access	
< 300 ft with turnaround 0	
> 300 ft with turnaround 2	
< 300 ft with no turnaround 4	
> 300 ft with no turnaround 5	
Street Signs	
Present – reflective 0	
Present – non-reflective 2	
Not present 5	
Notes:	
Vegetation (Fuel Models)	
Predominant Vegetation	
<i>Primary Predominant Vegetation</i>	
Non-Burnable (NB) Score 2	
Grass (GR) Score 5	
Grass-Shrub (GS) Score 10	

Shrub (SH) Score 15	
Timber-Understory (TU) Score 20	
Timber-Litter (TL) Score 25	
Slash-Blow (TU) Score 30	
Notes:	
Defensible Space	
> 100 ft around structure 1	
> 70 ft < 100 ft around structure 3	
> 30 ft < 70 ft around structure 10	
< 30 ft around structure 25	
Topography Within 300 ft of Structures	
Slope	
< 9% 1	
10% to 20% 4	
21% to 30% 7	
31% to 40% 8	
>41% 10	
Additional Rating Factors (rate all that apply)	
Topographic features 1-5	
History of high fire occurrence 1-5	
Severe fire weather potential 1-5	
Separation of adjacent structures 1-5	
Notes:	
Roofing Assembly	
Roofing	
Class A – metal roof, clay/concrete tiles, slate, asphalt shingles 0	
Class B – pressure treated composite shakes and shingles 3	
Class C – untreated wood shingle, plywood, particle board 15	
Unrated – Extremely poor roofing conditions 25	
Notes:	
Building Construction	
Siding Materials (predominant)	
Non-combustible (brick/concrete) 5	
Fire Resistive (stucco/adobe) 10	
Combustible (wood or vinyl) 12	
Deck and fencing (predominant)	
No deck or fence/non-combustible 0	
Combustible deck and fence 5	

Building Set-Back				
> 30 ft to slope 1				
< 30 ft to slope 5				
Notes:				
Available Fire Protection				
Water Sources				
Water Source? yes/no				
Water Source Type hydrant, water tank, other				
Other Water Source				
Water Source Score Hydrant = 1 Water Tank = 3				
Organized Response				
Station < 5 mi from community 1				
Station > 5 mi from community 3				
Notes:				
Placement of Gas and Electric Utilities				
Both underground 0				
One above, one below 3				
Both above ground 5				
Values at Risk Observations				
Forest Health Observations				
Land Use Observations				
Misc Observations				
Total				
Hazard Rating Scale	<40 Low	>40 Moderate	>70 High	>112 Extreme

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SWCA

APPENDIX F:

Funding Sources

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FUNDING SOURCES

The following section provides information on federal, state, and private funding opportunities for conducting wildfire mitigation projects.

FEDERAL FUNDING INFORMATION

Source: 2022 Infrastructure Investments and Jobs Act

Agency: Multiple

Website: <https://www.congress.gov/bill/117th-congress/house-bill/3684>

Description: The Infrastructure Investments and Jobs act allocated funding through various departments for infrastructure projects including, but not limited to roads, bridges, and major projects; passenger and freight rail; highway and pedestrian safety; public transit; broadband; ports and waterways; airports; water infrastructure; power and grid reliability and resiliency; resiliency, including funding for coastal resiliency, ecosystem restoration, and weatherization; clean school buses and ferries; electric vehicle charging; addressing legacy pollution by cleaning up Brownfield and Superfund sites and reclaiming abandoned mines; and Western Water Infrastructure.

Specifically, the Community Wildfire Defense Grant Program is a \$1 billion program where the USDA will provide grants to communities at risk from wildfire to develop or revise their community wildfire protection plans and carry out projects described within those plans. It will include a mix of formula and competitive funds. Applications are expected to open early in 2023.

Section 40803 addresses wildfire risk reduction, section 40804 deals with ecosystem restoration, section 40806 handles the establishment of fuel breaks in forests and other wildland vegetation, and section 70302 addresses reforestation. To learn more about the Act, please see guidebook located here https://www.whitehouse.gov/wp-content/uploads/2022/01/BUILDING-A-BETTER-AMERICA_FINAL.pdf?msclkid=48f8f465b51911ec85e010228d808d4d.

Source: Access to Ancestral Lands Grant Opportunity (AALG)

Agency: First Nations Development Institute

Website: <https://www.firstnations.org/>

Description: For more than 41 years, First Nations Development Institute (First Nations), a Native-led 501(c)(3) nonprofit organization, has worked to strengthen American Indian economies to support healthy Native communities by investing in and creating innovative institutions and models that strengthen asset control and support economic development for American Indian people and their communities. First Nations began its national grantmaking program in 1993. Through mid-year 2021, First Nations has successfully managed 2,276 grants totaling more than \$46 million to tribal and community institutions across Indian Country. The California Tribal Fund was created to support California-based, California-Native-led nonprofits and tribal programs in controlling and protecting their food systems, water, languages, traditional ecological knowledge, and land. Currently, the fund is operated as a project of First Nations Development Institute. You can find more information on the AALG here: <https://www.firstnations.org/rfps/california-tribal-fund-access-to-ancestral-lands-grant-opportunity/>

Source: Building Resilient Infrastructure and Communities (BRIC) Grant Program

Agency: FEMA

Website: <https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities>

Description: BRIC supports states, local communities, tribes, and territories as they undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. The BRIC program guiding principles are supporting communities through capability- and capacity-building; encouraging and enabling innovation; promoting partnerships; enabling large projects; maintaining flexibility; and providing consistency. You can find more information on the BRIC program here: <https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities>

Source: Hazard Mitigation Grant Program (HMGP)

Agency: FEMA

Website: <https://www.fema.gov/grants/mitigation/hazard-mitigation>

Description: The HMGP provides funding to state, local, tribal, or territorial governments (and individuals or businesses if the community applies on their behalf) to rebuild with the intentions to mitigate future losses due to potential disasters. This grant program is available after a presidentially declared disaster.

Source: Hazard Mitigation Grant Program (HMGP) – Post Fire

Agency: FEMA

Website: <https://www.fema.gov/grants/mitigation/post-fire>

Description: The HMGP Post Fire grant program provides assistance to communities for the purpose of implementing hazard mitigation measures following a wildfire. Mitigation measures may include:

- Soil stabilization
- Flood diversion
- Reforestation

Source: Flood Mitigation Assistance (FMA) Grant

Agency: FEMA

Website: <https://www.fema.gov/grants/mitigation/floods>

Description: The Flood Mitigation Assistance Program is a competitive grant program that provides funding to states, local communities, federally recognized tribes, and territories. Funds can be used for projects that reduce or eliminate the risk of repetitive flood damage to buildings insured by the National Flood Insurance Program. FEMA chooses recipients based on the applicant's ranking of the project and the eligibility and cost-effectiveness of the project.

Source: Emergency Management Performance Grant (EMPG)

Agency: FEMA

Website: <https://www.fema.gov/grants/preparedness/emergency-management-performance>

Description: The EMPG program provides funding to state, local, tribal, and territorial emergency management agencies with the overall goal of creating a safe and resilient nation. The two main objectives of the program are 1) closing capability gaps that are identified in the state or territory's most recent Stakeholder Preparedness Review (SPR); and 2) building or sustaining those capabilities that are identified as high priority through the Threat and Hazard Identification and Risk Assessment (THIRA)/SPR process and other relevant information sources. The grant recipient and Regional Administrator must come to an agreement on program priorities, which are crafted based on National, State, and regional priorities.

Source: Fire Management Assistance Grant (FMAG)

Agency: FEMA

Website: <https://www.fema.gov/assistance/public/fire-management-assistance>

Description: Fire Management Assistance is available to state, local, and tribal governments for the mitigation, management, and control of fires on publicly or privately owned forests or grasslands, which threaten such destruction as would constitute a major disaster. The Fire Management Assistance declaration process is initiated when a state submits a request for assistance to the FEMA Regional Director at the time a "threat of major disaster" exists. The entire process is accomplished on an expedited basis and a FEMA decision is rendered in a matter of hours. Before a grant can be awarded, a state must demonstrate that total eligible costs for the declared fire meet or exceed either the individual fire cost threshold, which applies to single fires, or the cumulative fire cost threshold, which recognizes numerous smaller fires burning throughout a state.

Source: Regional Catastrophic Preparedness (RCP) Grants

Agency: FEMA

Website: <https://www.fema.gov/grants/preparedness/regional-catastrophic>

Description: The Regional Catastrophic Preparedness Grant program provides funding to increase collaboration and capacity in regard to catastrophic incident response and preparation.

Source: Emergency Forest Restoration Program (EFRP)

Agency: USDA Farm Service Agency

Website: <https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/emergency-forest-restoration/index>

Description: The Emergency Forest Restoration Program (EFRP) helps the owners of non-industrial private forests restore forest health damaged by natural disasters. The EFRP does this by authorizing payments to owners of private forests to restore disaster damaged forests. The local Farm Service Agency County Committee implements EFRP for all disasters with the exceptions of drought and insect infestations. Eligible practices may include debris removal, such as down or damaged trees; site preparation, planting materials, and labor to replant forest stand; restoration of forestland roads, fire lanes, fuel breaks, or erosion-control structures; fencing, tree shelters; wildlife enhancement.

To be eligible for EFRP, the land must have existing tree cover; and be owned by any nonindustrial private individual, group, association, corporation, or other private legal entity.

Source: Emergency Conservation Program (ECP)**Agency:** USDA Farm Service Agency**Website:** <https://www.fsa.usda.gov/programs-and-services/conservation-programs/emergency-conservation/index>

Description: The Emergency Conservation Program (ECP) helps farmers and ranchers to repair damage to farmlands caused by natural disasters and to help put in place methods for water conservation during severe drought. The ECP does this by giving ranchers and farmers funding and assistance to repair the damaged farmland or to install methods for water conservation. The grant could be used for restoring conservation structures (waterways, diversion ditches, buried irrigation mainlines, and permanently installed ditching system).

Source: Environmental Quality Incentives Program (EQIP)**Agency:** Natural Resources Conservation Service (NRCS)**Website:** <https://www.nrcs.usda.gov/wps/portal/nrcs/main/co/programs/financial/eqip/>

Description: The Environmental Quality Incentives Program (EQIP) is a voluntary program authorized under the Agricultural Act of 2014 (2014 Farm Bill) that helps farmers, ranchers and forest landowners who own or rent agricultural land to implement practices and/or install measures to protect soil, water, plant, wildlife, and other natural resources while ensuring sustainable production on their farms, ranches, and working forest lands. California EQUIP ranking pools include [Catastrophic Fire Recovery](#) and [Forest Tree Mortality](#).

Source: Emergency Watershed Protection (EWP) Program**Agency:** NRCS**Website:** <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/landscape/ewpp/>

Description: The program offers technical and financial assistance to help local communities relieve imminent threats to life and property caused by floods, fires, windstorms, and other natural disasters that impair a watershed.

Eligible sponsors include cities, counties, towns, conservation districts, or any federally recognized Native American tribe or tribal organization. Interested public and private landowners can apply for EWP Program recovery assistance through one of those sponsors.

EWP Program covers the following activities.

- Debris removal from stream channels, road culverts, and bridges
- Reshape and protect eroded streambanks
- Correct damaged drainage facilities
- Establish vegetative cover on critically eroded lands
- Repair levees and structures
- Repair conservation practices

Source: Funding for Fire Departments and First Responders

Agency: DHS, USFA

Website: <https://www.usfa.fema.gov/grants/>

Description: Includes grants and general information on financial assistance for fire departments and first responders. Programs include the Assistance to Firefighters Grant Program, Reimbursement for Firefighting on Federal Property, State Fire Training Systems Grants, and National Fire Academy Training Assistance.

Source: Tribal Environmental General Assistance Program (GAP)

Agency: U.S. Environmental Protection Agency (EPA)

Website: <https://www.epa.gov/tribal-pacific-sw/epa-region-9-tribal-environmental-gap-funding>

Description: Funding under this program is used to aid Native American tribes in establishing and implementing their own reservation-specific environmental protection programs. To find out more about this funding opportunity please contact Tribal Branch Manager, Jeremy Bauer, at bauer.jeremy@epa.gov.

Source: Specific EPA Grant Programs

Agency: EPA

Website: <https://www.epa.gov/tribal-pacific-sw/epa-region-9-tribal-environmental-gap-funding>

Description: Various grant programs are listed under this site. Listed below are examples of grants offered:

- Multipurpose Grants to States and Tribes: <https://www.epa.gov/grants/multipurpose-grants-states-and-tribes>
- Environmental Education Grants: <https://www.epa.gov/education/grants>
- Environmental Justice Grants: <https://www.epa.gov/environmentaljustice/environmental-justice-grants-funding-and-technical-assistance>

Source: Conservation Innovation Grants (CIG)

Agency: NRCS

Website: [Conservation Innovation Grant \(CIG\) | NRCS California \(usda.gov\)](https://www.nrcs.usda.gov/programs/conservation-innovation-grants)

Description: CIG State Component. CIG is a voluntary program intended to stimulate the development and adoption of innovative conservation approaches and technologies while leveraging federal investment in environmental enhancement and protection, in conjunction with agricultural production. Under CIG, Environmental Quality Incentives Program (EQIP) funds are used to award competitive grants to non-federal governmental or nongovernmental organizations, tribes, or individuals. CIG enables the NRCS to work with other public and private entities to accelerate technology transfer and adoption of promising technologies and approaches to address some of the nation's most pressing natural resource concerns. CIG will benefit agricultural producers by providing more options for environmental enhancement and compliance with federal, state, and local regulations. The NRCS administers the CIG program. The CIG requires a 50/50 match between the agency and the applicant. The CIG has two funding components: national and state. Funding sources

are available for water resources, soil resources, atmospheric resources, and grazing land and forest health.

Source: Urban and Community Forestry Program, National Urban and Community Forestry Challenge Cost Share Grant Program

Agency: USFS

Website: <https://www.fs.usda.gov/managing-land/urban-forests/ucf>

Description: USFS funding will provide for Urban and Community Forestry Programs that work with local communities to establish climate-resilient tree species to promote long-term forest health. The other initiative behind this program is to promote and carry out disaster risk mitigation activities, with priority given to environmental justice communities. For more information, contact a USFS Regional Program Manager.

Source: Catalog of Federal Funding Sources; Land Resources

Agency: Multiple

Website: <https://ordspub.epa.gov/ords/wfc/f?p=165:512:10535656593775:::512::>

Description: The Land Finance Clearing House is a catalogue of Federal funding sources for all things land related.

Examples of the types of grants found at this site are:

- Forest and Woodlands Resource Management Grant: https://sam.gov/fal/a798ad78cac749639b48270db3e86fdc/view?index=cfda&page=2&organization_id=100011100
- Environmental Education Grant: <https://www.epa.gov/education/grants>
- Public Assistance Grant Program: <https://www.fema.gov/assistance/public>
- Hazard Mitigation Grant: <https://www.fema.gov/grants/mitigation/hazard-mitigation>

Source: Catalog of Federal Funding Sources; Water Resources

Agency: Multiple

Website: <https://ofmpub.epa.gov/apex/wfc/f?p=165:12:6483383318137:::12::>

Description: The Water Finance Clearing House is a catalogue of Federal funding sources for all things water related.

Examples of the types of grants found at this site are:

- Water Conservation Field Services Program: <https://www.usbr.gov/waterconservation/>
- California Community Development Block Grant: <https://www.grants.ca.gov/grants/community-development-block-grant-cdbg/>
- California Clean Water State Revolving Fund Program (CWSRF): https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/index.html

Source: Firewise Communities

Agency: Multiple

Website: <http://www.firewise.org>

Description: Many different Firewise Communities activities are available to help homes and whole neighborhoods become safer from wildfire without significant expense. Community cleanup days, awareness events, and other cooperative activities can often be successfully accomplished through partnerships among neighbors, local businesses, and local fire departments at little or no cost.

The kind of help you need will depend on who you are, where you are, and what you want to do. Among the different activities that individuals and neighborhoods can undertake, the following often benefit from seed funding or additional assistance from an outside source:

- Thinning/pruning/tree removal/clearing on private property—particularly on very large, densely wooded properties
- Retrofit of home roofing or siding to non-combustible materials
- Managing private forest
- Community slash pickup or chipping
- Creation or improvement of access/egress roads
- Improvement of water supply for firefighting
- Public education activities throughout the community or region

Source: The National Fire Plan (NFP)

Agency: DOI and USDA

Website: <http://www.forestsandrangelands.gov/>

Description: Many states are using funds from the NFP to provide funds through a cost-share with residents to help them reduce the wildfire risk to their private property. These actions are usually in the form of thinning or pruning trees, shrubs, and other vegetation and/or clearing the slash and debris from this kind of work. Opportunities are available for rural, state, and volunteer fire assistance.

Source: Staffing for Adequate Fire and Emergency Response (SAFER)

Agency: FEMA

Website: <https://www.fema.gov/grants/preparedness/firefighters/safer>

Description: The purpose of SAFER grants is to help fire departments increase the number of frontline firefighters. The goal is for fire departments to increase their staffing and deployment capabilities and ultimately attain 24-hour staffing, thus ensuring that their communities have adequate protection from fire and fire-related hazards. The SAFER grants support two specific activities: (1) hiring of firefighters and (2) recruitment and retention of volunteer firefighters. SAFER grants pay for a portion of the salaries of newly hired firefighters over the 5-year program.

Source: The Fire Prevention and Safety Grants (FP&S)

Agency: FEMA

Website: <https://www.fema.gov/grants/preparedness/firefighters/safety-awards>

Description: FP&S offers support to projects that enhance the safety of the public and firefighters who may be exposed to fire and related hazards. The primary goal is to target high risk populations and mitigate high incidences of death and injury. Examples of the types of projects supported by FP&S include fire-prevention and public-safety education campaigns, juvenile fire-setter interventions, media campaigns, and arson prevention and awareness programs. In fiscal year 2005, Congress reauthorized funding for FP&S and expanded the eligible uses of funds to include firefighter safety research and development.

Source: GSA-Federal Excess Personal Property

Agency: USFS

Website: <https://gsaccess.gov/>

Description: The Federal Excess Personal Property (FEPP) program refers to USFS-owned property that is on loan to State Foresters for the purpose of wildland and rural firefighting. Most of the property originally belonged to the Department of Defense (DoD). Once acquired by the USFS, it is loaned to State Cooperators for firefighting purposes. The property is then loaned to the State Forester, who may then place it with local departments to improve local fire programs. State Foresters and the USFS have mutually participated in the FEPP program since 1956.

Source: Assistance to Firefighters Grants (AFG)

Agency: FEMA

Website: <https://www.fema.gov/grants/preparedness/firefighters>.

Description: The AFG program provides resources to assist fire departments in attaining critical resources such as training and equipment.

Source: National Fire Plan-Wildland Urban Interface Community Fire Assistance

Agency: USFWS

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=348531>

Description: This grant offers assistance in various critical areas, including the implementation of community programs designed to bolster local capabilities in risk management, planning, training, mitigation activities, and community and homeowner education and action. Additionally, they are involved in planning and executing fuels management reduction activities with the goal of reducing the threat of catastrophic wildfires to communities and natural resources in high-risk regions, encompassing monitoring and maintenance efforts on federal and adjacent nonfederal land. Furthermore, they strive to enhance employment opportunities for local and small businesses in rural communities and provide education and training initiatives focused on bolstering the knowledge and fire protection capabilities of rural fire districts. The estimated total program funding for these vital endeavors amounts to \$25,000,000, with an award ceiling of \$10,000,000.

Source: Joint Chiefs' Landscape Restoration Partnership

Agency: Natural Resources Conservation Service

Website: <https://www.nrcs.usda.gov/programs-initiatives/joint-chiefs-landscape-restoration-partnership#assistance>

Description: The Joint Chiefs' Landscape Restoration Partnership program is a collaborative effort between the NRCS and the USFS aimed at enhancing the health and resilience of forested

landscapes, encompassing National Forest System land and state, tribal, and private lands. This partnership involves working with agricultural producers, forest landowners, tribes, and public land managers to invest in large-scale conservation and restoration initiatives. The program addresses multiple objectives, including reducing wildfire risks to communities, safeguarding water quality and supply, and enhancing wildlife habitat for endangered species. In 2023, the USDA invested over \$48.6 million in project coordinated through this program.

Source: Landscape Scale Restoration Competitive Grant Program

Agency: USFS, The Western Forestry Leadership Coalition (WFLC)

Website: <https://www.thewflc.org/landscape-scale-restoration-competitive-grant-program>

Description: The Landscape Scale Restoration Competitive Grant Program aims to support impactful projects that foster collaborative, science-based restoration of vital forest landscapes while leveraging both public and private resources. With funding provided by the USFS, the program focuses on addressing priority challenges and opportunities in western land, prioritizing projects that promote cross-boundary collaboration and coordination with other landscape-scale projects. These efforts should align with State Forest Action Plans and other restoration strategies. The WFLC is responsible for implementing the LSR grant process in the Western region, where they evaluate and score project proposals from western states and Pacific Island territories. Approved recommendations are forwarded to the USFS for funding consideration.

STATE FUNDING INFORMATION

Source: CAL FIRE Grant Programs

Agency: CAL FIRE

Website: <https://www.fire.ca.gov/grants/>

Description: The CAL FIRE Grant Program offers a range of forest-related grants with differing scopes and funding details. Some of the Grants include:

1. Forest Health Grants: <https://www.fire.ca.gov/grants/forest-health-grants/>
2. California Forest Improvement Program: <https://www.fire.ca.gov/grants/california-forest-improvement-program-cfip/>
3. Wildfire Prevention Grants Program: <https://www.fire.ca.gov/grants/fire-prevention-grants/>
4. Urban & Community Forestry Grant Programs: <https://www.fire.ca.gov/grants/urban-and-community-forestry-grant-programs/>
5. Wildfire Resilience and Forestry Assistance Grant- Prop 68: <https://www.fire.ca.gov/programs/resource-management/resource-protection-improvement/landowner-assistance/forest-stewardship/>

Source: California Fire Safe Council Grant Programs

Agency: California Fire Safe Council

Website: <https://cafiresafecouncil.org/grants-and-funding/apply-for-a-grant/>

Description: The California Fire Safe Council provides a range of Federal, State, and Private funding sources in addition to administering the USFS State Fire Assistance (SFA) Grant Programs.

Source: California Environmental Protection Agency (CalEPA) Loans and Grants

Agency: Multiple

Website: <https://calepa.ca.gov/loansgrants/>

Description: The CalEPA Loans and Grants hosts a wide variety of CalEPA grants specifically for California. While these funding sources may not tie directly to fuel management or fire recovery, there is a wide array of funding opportunities for water and air resources which are directly impacted by wildfire.

Source: Adaptation Clearinghouse

Agency: Multiple

Website: <https://resilientca.org/>

Description: This resource has numerous wildfire-related resources such as funding opportunities, assessments, case studies, educational materials, data and tools, example plans and strategies, and additional policy guidance.

Source: State of California's Grants Portal

Agency: Multiple

Website: <https://www.grants.ca.gov/>

Description: The California Grants Portal helps users identify the latest grants that could support fire hazard planning or related implementation efforts that support wildfire risk mitigation, fuels management, and other related projects.

Source: California Air Resources Board Funding Wizard

Agency: Multiple

Website: <https://fundingwizard.arb.ca.gov/web/>

Description: The Funding Wizard aggregates current federal, state, regional, private, and other funding opportunities for environmental and sustainability projects.

Source: California Fire Foundation Grant Programs

Agency: California Fire Foundation

Website: <https://www.cafirefoundation.org/programs/fireprevention/>

Description: The California Fire Foundation (CFF) offers grant opportunities to fire departments, firefighter associations, and community-based organizations whose projects help address wildfire and disaster prevention, preparedness, relief, and recovery needs within the state of California. The CFF directly supports high fire threat and/or under-resourced communities.

Source: Wildfire Recovery Fund

Agency: California Community Foundation

Website: <https://www.calfund.org/wildfirerecoveryfund/>

Description: The Wildfire Recovery Fund supports intermediate and long-term recovery efforts for major California wildfires. The Fund also supports wildfire prevention and preparedness efforts. Since

2003, the fund has granted more than \$32 million to support relief and recovery efforts in the aftermath of destructive wildfires.

Source: Regional Forest and Fire Capacity Grant Program

Agency: California Department of Conservation

Website: <https://www.conservation.ca.gov/dlrp/grant-programs/Pages/Regional-Forest-and-Fire-Capacity-Program.aspx>

Description: The Department of Conservation has announced the release of the 2022 Regional Forest and Fire Capacity (RFFC) Program Final Grant Guidelines. The RFFC Program is made possible through the PRC 4208.1 (California Department of Conservation 2023). The Department provides block grants to regional entities and eligible coordinating organizations to support large and small scale project implementation. The Program aims to achieve community wildfire resilience that is consistent with the California Wildfire and Forest Resilience Action Plan, California Forest Carbon Plan, and Executive Order B-52-18. The State Coastal Conservancy (SCC) is the current grantee for the Central Region.

Source: Wildfire Resilience Program

Agency: State Coastal Conservancy

Website: <https://www.conservation.ca.gov/dlrp/grant-programs/Pages/Regional-Forest-and-Fire-Capacity-Program.aspx>

Description: This program supports local partners for the purpose of implementing projects that will improve forest health and reduce the risk of catastrophic wildfire from occurring in developed areas. The Conservancy has provided over \$17 million to support forest management projects that reduce wildfire risk (Coastal Conservancy 2023). The goal of the Wildfire Resilience Program is to “build organizational capacity at the local and regional level to implement forest health and fire risk reduction projects” (Coastal Conservancy 2023). The Coastal Conservancy funds these projects from a block grant through the Department of Conservation’s Regional Fire and Forest Health Capacity Program, the California Climate Initiative Program, Proposition 68, and Proposition 84. Priorities for the grant program include projects that:

- are in high wildfire risk areas, such as those identified in the CAL FIRE FHSZs or the FRAP Priority Landscape Maps
- implement the California Wildfire and Forest Resilience Action Plan
- provide significant public benefit

Source: Community Economic Resilience Fund

Agency: California Governor’s of Planning and Research

Website: https://opr.ca.gov/economic-development/cerf/docs/20230905-CERF_Fact_Sheet.pdf

Description: In California, economic inequality has been a growing concern due to low-paying jobs and increasing living costs, while the state is aggressively transitioning to a clean energy economy to achieve carbon neutrality by 2045. To address these issues, the Community Economic Resilience Fund, a \$600 million state initiative, aims to ensure that as California’s economy evolves in response to climate change and other challenges, it generates well-paying jobs and thriving communities for all

residents. This program emphasizes empowering diverse regions and residents to actively participate as leaders in this transformation.

PRIVATE FUNDING INFORMATION

Source: State Farm Good Neighbor Citizenship (GNC) Grants

Agency: State Farm

Website: <https://www.statefarm.com/about-us/corporate-responsibility/community-grants/good-neighbor-citizenship-grants>

Description: State Farm funding is directed at:

- Auto and roadway safety
- Teen Driver Education
- Home safety and fire prevention
- Disaster preparedness
- Disaster recovery

Source: The Urban Land Institute (ULI)

Website: <http://www.uli.org>

Description: ULI is a 501(c)(3) nonprofit research and education organization supported by its members. The institute has more than 22,000 members worldwide, representing the entire spectrum of land use and real estate development disciplines, working in private enterprise and public service. The mission of the ULI is to provide responsible leadership in the use of land to enhance the total environment. ULI and the ULI Foundation have instituted Community Action Grants that could be used for Firewise Communities activities. Applicants must be ULI members or part of a ULI District Council. Contact actiongrants@uli.org or review the web page to find your District Council and the application information.

Source: Environmental Systems Research Institute (ESRI)

Website: <http://www.esri.com/grants>

Description: ESRI is a privately held firm and the world's largest research and development organization dedicated to geographic information systems. ESRI provides free software, hardware, and training bundles under ESRI-sponsored Grants that include such activities as conservation, education, and sustainable development, and posts related non-ESRI grant opportunities under such categories as agriculture, education, environment, fire, public safety, and more. You can register on the website to receive updates on grant opportunities.

Source: National Forest Foundation; Innovative Finance for National Forests Grant Program

Website: <https://www.nationalforests.org/grant-programs/innovative-finance-for-national-forests-grant-program>

Description: The Innovative Finance for National Forests Grant Program aims to bring in non-USFS funds to increase forest resilience. There are three main topics for funding: Wildfire Resilience and

Recovery, Sustainable Recreation Access and Infrastructure, and Watershed Health. In addition, three types of projects are funded. Pilot Programs with on-the-ground implementation, Scaling Projects to deliver backlogs of unfunded work, and Research and Development to provide to new forest information.

Source: Matching Awards Program

Agency: National Forest Foundation (NFF)

Website: <https://www.nationalforests.org/grant-programs/map>

Description: The NFF is soliciting proposals for its Matching Awards Program (MAP) to provide funds for direct on-the-ground projects benefitting America's National Forests and Grasslands. By pairing federal funds provided through a cooperative agreement with the USFS with non-federal dollars raised by award recipients, MAP measurably multiplies the resources available to implement stewardship projects that benefit the National Forest System.

Source: Patagonia Environmental Grants and Support

Agency: Patagonia

Website: <https://www.patagonia.com/how-we-fund/>

Description: Patagonia supports innovative work that addresses the root causes of the environmental crisis and seeks to protect both the environment and affected communities. Patagonia focuses on places where they have built connections through outdoor recreation and through their network of retail stores, nationally and internationally.

Source: Leonardo DiCaprio Foundation Grants

Agency: Leonardo DiCaprio Foundation

Website: <https://www.rewild.org/>

Description: The foundation supports projects around the world that build climate resiliency, protect vulnerable wildlife, and restore balance to threatened ecosystems and communities.

Source: U.S. Endowment for Forestry and Communities

Agency: EPA, NRCS, USFS, U.S. Department of Defense, U.S. Economic Development Agency

Website: <https://www.usendowment.org/>

Description: As the nation's largest public charity dedicated to keeping our working forests working and ensuring their bounty for current and future generations, the Endowment deploys the creativity and power of markets to advance their mission: The Endowment works collaboratively with partners in the public and private sectors to advance systemic, transformative and sustainable change for the health and vitality of the nation's working forests and forest-reliant communities.

Source: Action, Implementation, & Mitigation

Agency: Coalitions and Collaboratives Inc. (COCO), USFS

Website: <https://co-co.org/get-involved/grants/aim-grant/>

Description: The Coalitions and Collaboratives Inc. is a nonprofit based out of Colorado that developed the Action, Implementation and Mitigation Program to build capacity and conduct on-the

ground projects to advance fire adaptation and reduce the risk of wildfire across the United States. The grant offers funding for a wide variety of mitigation projects, equipment and personnel enhancements, and planning efforts on non-federal lands. Applicants must contribute a 100% match, and funding may range from \$10,000 to \$75,000. The sponsored organization must have a non-profit (501c3) status or have a fiscal sponsorship from a local government or other entity with non-profit status.

OTHER FUNDING INFORMATION

The following resources may also provide helpful information for funding opportunities:

- Western Forestry Leadership Coalition: <https://www.thewflc.org/>
- USDA Information Center: <https://www.nal.usda.gov/main/information-centers>
- USFS Fire Management website: <https://www.fs.usda.gov/managing-land/fire>
- Insurance Services Office Mitigation Online (town fire ratings): <http://www.isomitigation.com/>
- National Fire Protection Association: <http://www.nfpa.org>
- National Interagency Fire Center, Wildland Fire Prevention/Education: <https://www.nifc.gov/fire-information/fire-prevention-education-mitigation>
- USFA: <https://www.usfa.fema.gov/index.html>

SWCA

APPENDIX G:
Homeowner Resources

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HOMEOWNER'S INSURANCE RESOURCES

The Plan provides recommendations for mitigating wildfire hazard on a county scale, therefore it is not used by private insurance companies to determine individual property risk, because it does not address hazard at a parcel level. The intent of a CWPP is to provide broad scale mitigation of wildfire risk to communities, which requires collaboration by government entities, landowners, and the public.

A partnership between the Insurance Commissioner and the California Governor's Office of Emergency Services (Cal OES), California Public Utilities Commission (CPUC), CAL FIRE, and California Governor's Office of Planning and Research (CA GOPR) has led to the development of regulatory action that creates insurance incentives for implementing actions that build up home and community resilience to wildfire. This new wildfire safety regulation aims to make insurance more affordable while increasing public involvement in risk mitigation and awareness regarding local hazards (CDI 2022a). See Appendix A for more information on the Safer from Wildfires initiative.

Wildfire risk reduction actions identified in this Plan (such as home hardening, creating defensible space, and community collaboration) are in alignment with the mitigation actions specified in the Safer from Wildfires initiative.

For information on how you can make your home, immediate surroundings, and community safer from wildfire, please see the following flyer from CDI: <https://www.insurance.ca.gov/01-consumers/200-wrr/upload/Safer-from-Wildfires-one-pager.pdf.pdf>.

An additional resource to homeowners is non-profit 501(c)(3) United Policyholders. Their mission is to serve as a reliable and valuable information source and advocate for consumers across all 50 states in matters related to insurance. United Policyholders is committed to providing unbiased guidance on purchasing insurance, assisting with claims, and advocating for the rights of consumers. The non-profit operates independently, without financial support from insurance companies, ensuring transparency and unwavering support for the interests of policyholders.

United Policyholders offers free assistance to homeowners who experience significant losses from wildfires. They also offer assistance to homeowners who are having issues getting insured, obtaining risk assessment documents from their insurer, or help with facilitating conversation with insurers about risk scores.

To learn more about United Policyholders, please visit: <https://uphelp.org/>

ADDITIONAL LINKS AND RESOURCES

CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION (CAL FIRE)

Home and Fuels Management

- Property owners Checklist; How to Make Your Home Fire Safe: https://www.lakeshastina.com/Docs_PDFs/Checklist.pdf

- Hardening Your Home: <https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/hardening-your-home/>
- Home Hardening Toolkit: <https://www.readyforwildfire.org/campaign-toolkits/home-hardening-toolkit/>
- Defensible Space: <https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/defensible-space/>
- Defensible Space Toolkit: <https://www.readyforwildfire.org/campaign-toolkits/defensible-space-toolkit/>
- Fire-Resistant Landscaping: <https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/fire-resistant-landscaping/>
- What Property Owners Need to Know to Reduce Wildfire Risk Each Season: <https://www.readyforwildfire.org/forest-health/seasonal-actions/>
- Prescribed Fire Toolkit: <https://www.readyforwildfire.org/campaign-toolkits/prescribed-fires-toolkit/>
- Insurance Institute for Business & Home Safety; Wildfire Prepared: <https://wildfireprepared.org/wp-content/uploads/WFPH-Standard-2022-Homeowner-Guide.pdf>

Preparing for Wildfire

- Wildfire Action Plan: <https://www.readyforwildfire.org/prepare-for-wildfire/get-set/wildfire-action-plan/>
- How to Prepare to Evacuate From a Wildfire: <https://www.readyforwildfire.org/prepare-for-wildfire/get-set/prepare-your-family/>
- Pre-Evacuation Preparation Steps: <https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/pre-evacuation-preparation-steps/>
- Evacuation Steps: <https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/evacuation-steps/>
- Animal Evacuation: <https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/animal-evacuation/>
- GO! Evacuation Guide: <https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/>
- GO! Evacuation Toolkit: <https://www.readyforwildfire.org/campaign-toolkits/go-evacuation-toolkit/>
- Emergency Supply Kit: <https://www.readyforwildfire.org/prepare-for-wildfire/get-set/emergency-supply-kit/>
- Insurance Preparedness: <https://www.readyforwildfire.org/prepare-for-wildfire/get-set/insurance-preparedness/>
- Power Outage Information: <https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/power-outage-information/>
- What To Do If Trapped: <https://www.readyforwildfire.org/prepare-for-wildfire/go-evacuation-guide/what-to-do-if-trapped/>

Preventing Wildfire

- Equipment Use: <https://www.readyforwildfire.org/prevent-wildfire/equipment-use/>
- Debris Burning: <https://www.readyforwildfire.org/prevent-wildfire/debris-burning/>
- Vehicle Use: <https://www.readyforwildfire.org/prevent-wildfire/vehicle-use/>
- Campfire Safety: <https://www.readyforwildfire.org/prevent-wildfire/campfire-safety/>
- Target Shooting Safety: <https://www.readyforwildfire.org/prevent-wildfire/target-shooting-safety/>
- One Less Spark, One Less Wildfire Toolkit: <https://www.readyforwildfire.org/prevent-wildfire/one-less-spark-campaign/>
- Forest Health: <https://www.readyforwildfire.org/forest-health/>
- Forest Health Toolkit: <https://www.readyforwildfire.org/campaign-toolkits/forest-health-toolkit/>

After the Fire

- Returning Home After a Wildfire: <https://www.readyforwildfire.org/post-wildfire/>
- What to Expect After a Wildfire: <https://www.readyforwildfire.org/post-wildfire/after-a-wildfire/>
- Immediate Safety: <https://www.readyforwildfire.org/post-wildfire/returning-home/>
- Rebuilding, Mobilizing Your Community: <https://www.readyforwildfire.org/post-wildfire/rebuilding/>
- Who Can Help? <https://www.readyforwildfire.org/post-wildfire/who-can-help/>

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA):

Protecting Your Home

- Understanding the Wildfire Threat to Homes: <https://www.nfpa.org/News-and-Research/Publications-and-media/Blogs-Landing-Page/Fire-Break/Blog-Posts/2020/12/08/Interactive-online-resource-helps-build-understanding-of-wildfire-risks>
- Preparing Homes for Wildfire: <https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Preparing-homes-for-wildfire>
- If your Home Doesn't Ignite, It Can't Burn: <https://www.youtube.com/watch?v=RqKFDDBGd5o>
- How do Homes Burn in a Wildfire? <https://www.youtube.com/watch?v=3QthynXyml>
- Wildfire Community Preparedness Day Toolkit: <https://go.nfpa.org//14662/2022-01-11/8j6nqh>
- 5 Key Areas Around the Home You Must Examine When Assessing Wildfire Risk: <https://www.youtube.com/watch?v=MIUQVL3BvVg>
- Your Home and Wildfire, Choices That Make a Difference: <https://www.youtube.com/watch?v=pfbEcMeYFFA>
- Home Hardening Fact Sheets: <https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Firewise-USA/Firewise-USA-Resources/Research-Fact-Sheet-Series>

Preparation and Evacuation

- Wildfire Preparedness Tips: <https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Wildfire-safety-tips>
- Wildfire Preparedness for Household Pets: <https://www.nfpa.org/-/media/Files/Public-Education/Campaigns/TakeAction/TakeActionPetsChecklist.pdf>
- Wildfire Preparedness for Horses and Livestock: <https://www.nfpa.org/-/media/Files/Public-Education/Campaigns/TakeAction/TakeActionHorseChecklist.ashx>
- Backpack Emergency GO! Kit: <https://www.nfpa.org/-/media/Files/Public-Education/Campaigns/TakeAction/TakeActionBackPackGoKit.ashx>
- Outthink a Wildfire; Wildfire Action Policies: <https://www.nfpa.org/wildfirepolicy>

FEMA

- Protective Actions for Wildfires FEMA: <https://community.fema.gov/ProtectiveActions/s/article/Wildfire>
- Flood Insurance Information: <https://www.fema.gov/flood-insurance>
- Explore FEMA's National Risk Index by County for risk, expected annual loss, social vulnerability, and community resilience: <https://hazards.fema.gov/nri/map>

MISCELLANEOUS

WILDFIRE SMOKE

- Smoke Ready Toolbox for Wildfires EPA: <https://www.epa.gov/smoke-ready-toolbox-wildfires>
- Airnow: <https://www.airnow.gov/>
- Airnow Fire and Smoke Map: <https://fire.airnow.gov/>
- Smoke Advisories: <https://www.airnow.gov/air-quality-and-health/fires/smoke-advisories/>
- Fires and Your Health: <https://www.epa.gov/pm-pollution/fires-and-your-health>
- Wildfires and Indoor Air Quality: <https://www.epa.gov/indoor-air-quality-iaq/wildfires-and-indoor-air-quality-iaq>
- Frequent Questions About Wildfire Smoke: https://usepa.servicenowservices.com/airnow?id=kb_search&kb_knowledge_base=798f5d172fa050102be2d2172799b6d8&spa=1&kb_category=23bbbd9f1b681c104614ddb6bc4bcb70
- Smoke Sense App: <https://www.epa.gov/air-research/smoke-sense-study-citizen-science-project-using-mobile-app>
- Wildfire Smoke and COVID-19: https://www.cdc.gov/disasters/covid-19/wildfire_smoke_covid-19.html
- Great Basin Unified Air Pollution Control District Webpage: <https://www.gbuapcd.org/>

WILDFIRE RECOVERY

- Wildfire Recovery Home Page: <https://ucanr.edu/sites/fire/Recovery/>
- Avoid Fraud: <https://ucanr.edu/sites/fire/Recovery/Fraud/>
- Landscape Restoration: <https://ucanr.edu/sites/fire/Recovery/Revegetation/>
 - Erosion Control: <https://ucanr.edu/sites/fire/Recovery/Revegetation/Erosion/>
- Forest Recovery: <https://ucanr.edu/sites/fire/Recovery/ForestRecovery/>
 - Burn Assessment: <https://ucanr.edu/sites/fire/Recovery/ForestRecovery/BurnAssessment/>
 - Mortality Assessment: <https://ucanr.edu/sites/fire/Recovery/ForestRecovery/TreeMortality/>
 - Reforestation: <https://ucanr.edu/sites/fire/Recovery/ForestRecovery/Reforestation/>
- Livestock Resources: <https://ucanr.edu/sites/fire/Recovery/Livestock/>
- Vineyard Resources: <https://ucanr.edu/sites/fire/Recovery/Vineyard/>
- Post-fire Management: https://ucanr.edu/sites/fire/Recovery/Helpful_Presentations/

OTHER RESOURCES

- Non-Renewals for California property owners: <https://strongerca.com/wp-content/uploads/2021/06/Non-renewals-for-CA-Homeowners.pdf>
- Mass Tree Mortality, Fuels, and Fire: A Guide for Sierra Nevada Forest Landowners: <https://anrcatalog.ucanr.edu/pdf/8683.pdf>
- Instructor Guide; The ability to identifying, analyzing, and using relevant situational information about topographic features can help predict wildland fire behavior is the responsibility of everyone on the fireline: <https://www.nwcg.gov/sites/default/files/training/docs/s-190-ig04.pdf>
- WiRe – Wildfire Research, an interdisciplinary collaboration on community adaptability to wildland fire: <https://wildfireresearchcenter.org/>
- Wildfire Ready App:
 - App Store: <https://apps.apple.com/us/app/wildfire-ready-virtual/id1540773278?msclkid=4eac0069a71411ecb26fa03c0b08eba2>
 - Google Play: <https://play.google.com/store/apps/details?id=com.BaltiVirtual.Wildfire&gl=US&msclkid=4eabc8f6a71411ecbfe27aa64cd6d835>

Emergency Assistance: Before, During, and After a Fire

Team Rubicon is a veteran-led humanitarian organization that serves communities around the world before, during, and after disasters such as earthquakes, floods, hurricanes, tornadoes, and wildfire. Team Rubicon focuses on serving vulnerable and at-risk populations affected by disasters, and all services are provided free of charge. Services include incident management, debris management, hazard mitigation, volunteer management, home repair, and emergency medicine. With respect to fire-related assistance, Team Rubicon assists with any action that would limit the impact of a wildfire, such as helping property

owners to make their home fire safe, providing staff to assist with mitigation projects (e.g., fuels reduction), and removing debris and hazardous trees (Team Rubicon 2022).

To find out more about Team Rubicon, please visit <https://teamrubiconusa.org/capabilities-services/>.

SWCA

APPENDIX H:
PROJECT OUTREACH

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COMMUNITY OUTREACH

This section details the community engagement process and activities that SWCA, Inyo County OES, the Whitebark Institute, and project partners implemented as part of the planning process.

Several community events were held by Inyo County OES, SWCA, and the Whitebark Institute. Table H.1 lists examples of public outreach events, materials, and releases that were used to provide information to the public and solicit community input. Correspondingly, Figures H.1 through H.7, H.10, and H.11 illustrate the news outlets, social media platforms, including Facebook posts from the Inyo County Sheriff's Office, Bishop FPD, and other local online sources to encourage community participation in the community event and public survey. Flyers, social media posts, press releases, and emails were sent via various channels, including local FPDs, community bulletin boards, local news outlets, local nonprofits, county agencies, and local Fire Safe Council networks.

The first community event was organized by Inyo County OES, Bishop FPD, the Whitebark Institute, and SWCA and held at Bishop FPD Station #1 on August 10, 2023. Residents from different communities attended the event and discussed important topics related to the CWPP. The event involved a presentation led by SWCA and Inyo County OES, followed by a “community roundtable” to discuss community-specific concerns and priorities as well as to identify potential solutions. Figure H.8 shows the “community roundtable.”

The second community event was organized by Inyo County OES, the Lone Pine Paiute-Shoshone Tribe, the Whitebark Institute, and SWCA and was held in Lone Pine on March 7, 2024. Local residents, as well as residents from nearby communities, attended the event and engaged in meaningful discussions related to the planning process. The event involved a presentation by County Wildfire Preparedness Coordinator Kristen Pfeiler, followed by a group discussion regarding community-specific concerns and priorities. Figure H.9 shows the community event.

Feedback, comments, and suggestions received from community members during community events, the community survey, and CWPP review were synthesized and utilized to craft project recommendations for the Inyo CWPP. Therefore, the project recommendations (see Chapter 4) are specifically tailored to address the concerns and priorities of the community.

Table H.1. Public Outreach Resources

Resource Description	Location/Description	Figure Number	Date
Facebook post promoting the public survey	Inyo County Sheriff's Office	Figure H.1	7/20/23
Press release about the Inyo County CWPP project and public survey	Sierra Wave Media	Figure H.2	7/20/23
Inyo County CWPP and public survey notification press release	Eastern Sierra Now	Figure H.3	7/20/23
Inyo County CWPP effort notification	The Inyo Register Website	Figure H.4	7/24/23
Inyo County CWPP press release posting	The Sheet: News, Views & Culture of the Eastern Sierra	Figure H.5	8/5/23

Resource Description	Location/Description	Figure Number	Date
Bishop FPD Facebook post announcing the community event	Bishop FPD Facebook Account	Figure H.6	8/1/23
CWPP public meeting promotional flyer	Inyo County OES	Figure H.7	8/10/23
Community meeting	Bishop FPD Station #1	Figure H.8	8/10/23
Community meeting	Lone Pine	Figure H.9	3/7/24
Public review period announcement	Sierra Wave	Figure H.10	2/27/2024
CWPP public meeting promotional flyer	Inyo County OES and SWCA	Figure H.11	3/7/24

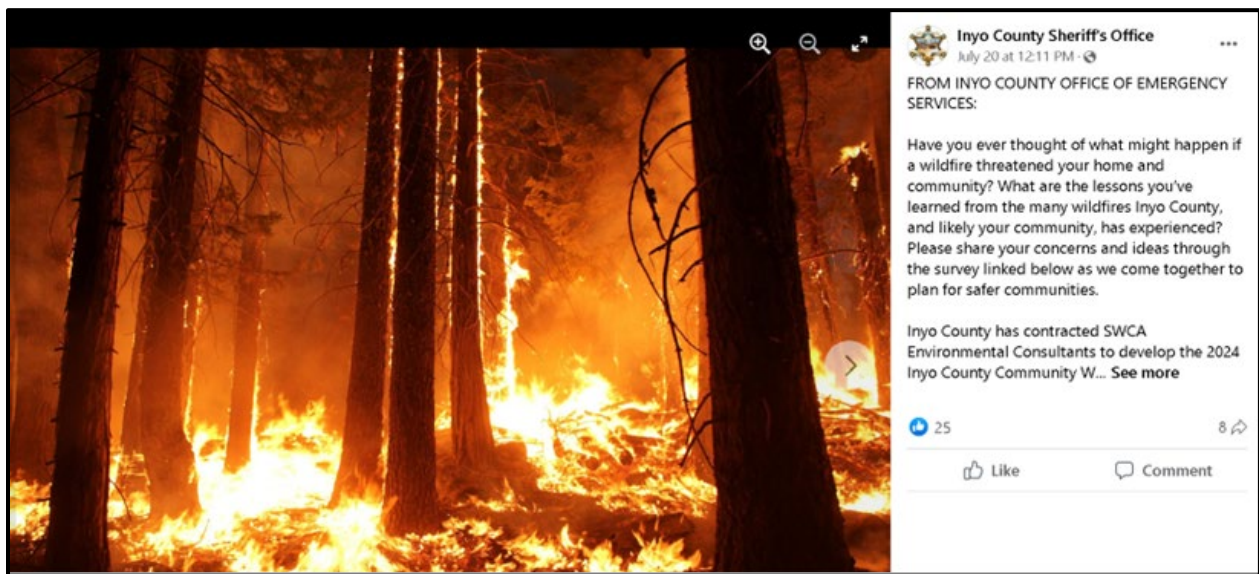


Figure H.1. Facebook promoting the public survey.

The screenshot shows a web page from Sierra Wave Media. At the top left is the Sierra Wave Media logo with the text "SIERRA WAVE MEDIA RADIO • TELEVISION • ONLINE". To the right is a banner for "Visit LADWPEasternSierra.com/runoff2023 For the latest conditions STAY SAFE AROUND WATERWAYS". Below the logo is a navigation menu with items: Home, Radio, Skippable News, Sports, Affiliates, Tales Along El Camino Sierra, Advertising, About, Contact. On the right side of the page are social media icons for Facebook, Instagram, and YouTube. The main headline is "Inyo County Community Wildfire Protection Plan Survey" with a sub-headline "by Press Release on July 20, 2023 in Inyo County, Press Release, Public Safety". Below the headline is a search bar and a "Subscribe to the News via Email" section with a text input field and a "Subscribe" button. The main content area features the Inyo County and SWCA logos, followed by the text "Press Release Inyo County Community Wildfire Protection Plan July 20, 2023". It includes a QR code with the text "Scan here to share your concerns directly with the planning team!" and a link "https://forms.office.com/r/Xfsl5B2uZT". Below this is a paragraph asking for community input on wildfire threats and lessons learned. At the bottom, it states that Inyo County has contracted SWCA Environmental Consultants to develop the 2024 Community Wildfire Protection Plan (CWPP), an update to the 2009 CWPP. On the right side of the page, there is a "KSRW 92.5 FM LIVE STREAMING" logo and a link to "KSRW FCC Public Files".

Figure H.2. Press release regarding the Inyo County CWPP project and public survey on Sierra Wave Media.

eastern sierra NOW

ASTORGA'S MEXICAN RESTAURANT
TAKE OUT! 760-872-3849

Inyo County Community Wildfire Protection Plan
July 20, 2023

SWCA ENVIRONMENTAL CONSULTANTS

Press Release
Inyo County Community Wildfire Protection Plan
July 20, 2023

Scan here to share your concerns directly with the planning team!

You can also access the survey through this link: <https://forms.office.com/r/8Fsk5B2wZT>

Have you ever thought of what might happen if a wildfire threatened your home and community? What are the lessons you've learned through the many wildfires Inyo County and likely your community has experienced? Please share your concerns and ideas as we come together to plan for safer communities.

Inyo County has contracted SWCA Environmental Consultants to develop the 2024 Community Wildfire Protection Plan (CWPP), which is an update to the 2003 CWPP. A CWPP is a plan designed to identify and mitigate wildfire hazards to communities and infrastructure located in the wildland-urban interface (WUI), an area located between wildland and human development. The CWPP makes recommendations for hazardous fuels reduction, public outreach and education, structural ignitability reduction, and fire response capacity.

The development of the Inyo County CWPP is founded in facilitated collaboration among local, tribal, state, and federal officials, as well as non-governmental stakeholders. The 2024 CWPP

Figure H.3. Press release regarding the Inyo County CWPP project and public survey on Eastern Sierra Now.



Figure H.4. Article informing the public about the countywide CWPP effort in the *Inyo Register*.

Inyo Community Wildfire Plan

PRESS RELEASE:

Inyo County has contracted SWCA Environmental Consultants (SWCA) to help develop our 2024 Inyo Community Wildfire Protection Plan (CWPP).

A CWPP is a plan designed to identify and mitigate wildfire hazards to communities and infrastructure located in the wildland-urban interface (WUI; an area located between wildland and human development). The CWPP makes recommendations for hazardous fuels reduction, public outreach and education, structural ignitability reduction, and fire response capacity.

There will be a meeting on Thursday, August 10 from 6 p.m. to 8 p.m. at Bishop Fire Station #1, located at 209 W Line Street (please park in the parking lot to the north of the fire station).

The evening plan is to provide information on how the CWPP can improve your community's resilience and to share your wildfire-related concerns and priorities.

Figure H.5. CWPP press release posting from *The Sheet: News, Views & Culture of the Eastern Sierra*.

Bishop Fire Department

19h · 🌐

...

Have you ever thought of what might happen if a wildfire threatened your home and community? What are the lessons you've learned from the many wildfires Inyo County, and likely your community, has experienced? Please share your concerns and ideas through the survey linked below as we come together to plan for safer communities.

Inyo County has contracted SWCA Environmental Consultants to develop the 2024 Inyo County Community Wildfire Protection Plan (CWPP), which is an update to the previous 2009 CWPP. A CWPP is used to identify and mitigate wildfire hazards to communities. The 2024 CWPP will build upon collaborative interagency efforts to reduce wildfire risk by reviewing and identifying new priority areas for wildfire protection efforts. CWPPs are designed to reflect the needs and concerns of each community. That means we need to hear from YOU! In addition, to the survey, we will host an in-person event on Thursday August 10 from 6pm to 8pm at Bishop Fire Station #1 located at 209 W Line Street (attendees are asked to park in the parking lot to the north of the fire station). Please join us to learn more about how the CWPP can improve your community's resilience and to share your wildfire-related concerns and priorities.

Survey: <https://forms.office.com/r/Xfsk582uZT>

For more information, please contact Inyo County's Wildfire Preparedness Coordinator, Kristen Pfeiler, at kristen.pfeiler@inyocounty.us, or SWCA's Project Manager Montiel Ayala, at Montiel.ayala@swca.com or Lia Webb, at lia.webb@swca.com. In addition, please visit ready.inyocounty.us for updates and information regarding emergency preparedness, response, and recovery.

ARE YOU READY FOR WILDFIRE?

**INYO COUNTY
COMMUNITY WILDFIRE
PROTECTION PLAN**

**COMMUNITY
MEETING**

THURSDAY, AUG 10th
6:00 – 8:00 PM

Bishop Fire Station #1
209 W Line St
Bishop, CA 93514

(park in the lot to the north of the fire station)

Refreshments will be provided

What lessons have you learned from the many wildfires that have threatened our communities?

Join Inyo County and our partners to discuss needs, concerns, and challenges.

For more information visit ready.inyocounty.us

SCAN HERE FOR THE SURVEY

Funding for this project was provided by a grant from the California Department of Forestry and Fire Protection as part of the California Climate Investments Program, through the California Fire Safe Council.

Figure H.6. Bishop FPD Facebook post announcing the public meeting on August 10, 2023.

ARE YOU READY FOR WILDFIRE?

**INYO COUNTY
COMMUNITY WILDFIRE
PROTECTION PLAN**

**COMMUNITY
MEETING**

**THURSDAY, AUG 10th
6:00 – 8:00 PM**

Bishop Fire Station #1
209 W Line St
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For more information visit ready.inyocounty.us

SCAN HERE FOR THE SURVEY

Funding for this project was provided by a grant from the California Department of Forestry and Fire Protection as part of the California Climate Investments Program, through the California Fire Safe Council.

Figure H.7. Community event promotional flyer from Inyo County OES.



Figure H.8. Photograph taken from the public outreach event held at Bishop FPD #1 showing the “community roundtable.”



Figure H.9. Photograph taken from the community event held in Lone Pine showing Inyo County's Wildfire Preparedness Coordinator (Kristen Pfeiler) facilitating the meeting.

Sierra Wave Media
Eastern Sierra News for April 04, 2024

Join the team.
LADWPEasternSierra.com/jobs

HOME LOCAL NEWS LOCAL SPORTS LOCAL EVENTS WEATHER COMMENTS KSRW RADIO LPPTV TALES ALONG EL CAMINO SIERRA ADVERTISING STAFF

Inyo County Announces Public Review Period for the 2024 Inyo County Community Wildfire Protection Plan (CWPP)

by News Staff | Feb 27, 2024 | Inyo County, Press Release, Public Service Announcement

Inyo County Announces Public Review Period for the 2024 Inyo County Community Wildfire Protection Plan (CWPP)

Inyo County Office of Emergency Services (OES), in collaboration with SWCA Environmental Consultants, the Whitebark Institute, and Wildland Fire Associates, is pleased to announce the commencement of the public review period for the 2024 Inyo County Community Wildfire Protection Plan (CWPP). The review period is scheduled from March 7, 2024, through April 15, 2024.

The review period will kick off with an in-person community event hosted by Inyo County OES, the Lone Pine Paiute Shoshone Tribe, the Whitebark Institute, and SWCA on March 7, 2024 from 4:30-6 p.m. at the Lone Pine Paiute Shoshone Tribal Wellness Center located at 1145 E-Sha Road in Lone Pine. All County residents are welcomed and encouraged to attend and participate.

The Eastern Sierra's Classic Rock Station
KSRW
92.5 FM
LIVE STREAMING

KSRW FCC Public Files

Snow Report
Local Earthquakes


MAMMOTH HOSPITAL
Elevate Your Health


BISHOP CALIFORNIA

Figure H.10. Sierra Wave article promoting the CWPP public review period.

INYO COUNTY

COMMUNITY WILDFIRE PROTECTION PLAN



PUBLIC REVIEW PERIOD ANNOUNCEMENT

Inyo County Office of Emergency Services (OES), in collaboration with SWCA Environmental Consultants (SWCA), the Whitebark Institute, and Wildland Fire Associates, is pleased to announce the commencement of the public review period for the 2024 Inyo County Community Wildfire Protection Plan (CWPP). The review period is scheduled from **March 7, 2024, through April 15, 2024.**

HOW YOU CAN PLAY A VITAL ROLE IN THE DEVELOPMENT OF THE PLAN

As we enter this important phase of the planning process, Inyo County seeks the active participation and engagement of Inyo community members. We invite all community members (full and part-time residents, property owners, individuals in the workforce) to review the draft CWPP and accompanying Story Map as well as the Community Risk Explorer (web application) and provide invaluable feedback to ensure its effectiveness and alignment with the unique needs of our community. To kick off the review period, Inyo County OES, the Lone Pine Paiute Shoshone Tribe, the Whitebark Institute, and SWCA will host an in-person event on **March 7th, 2024**, at the **Lone Pine Paiute Shoshone Tribal Wellness Center from 4:30 to 6:00pm**. All County residents are welcomed and encouraged to attend and participate!





SOUTH COUNTY

COMMUNITY MEETING!

Thursday, Mar 7, 2024 from 4:30 to 6:00pm

1145 E-Sha Road, Lone Pine CA 93545

Lone Pine Paiute Shoshone Tribal Wellness Center





Figure H.11. Community event promotional flyer from Inyo County OES and SWCA.

COMMUNITY SURVEY RESULTS

Which community best describes the area you reside in?

Community	Number of Responses	Percent
Bishop	13	35.1%
Old Wilkerson	10	27.0%
New Wilkerson	4	10.8%
Alabama Hills	2	5.4%
Big Pine	2	5.4%
Meadow Creek	2	5.4%
Aspendell	1	2.7%
Lone Pine	1	2.7%
N/A	1	2.7%
Sage Flats	1	2.7%
Grand Total	37	100.0%

How prepared is your community for large wildfire?

Level of Preparation	Number of Responses	Percent
Moderately prepared	21	56.8%
Poorly prepared	15	40.5%
Well prepared	1	2.7%
Grand Total	37	100.0%

How would you rate your house in terms of risk from wildfire? (Consider the proximity of your house to tracts of undeveloped land, vegetated land, emergency response, and access.)

Level of Risk	Number of Responses	Percent
Medium	15	40.5%
High	14	37.8%
Low	8	21.6%
Grand Total	37	100.0%

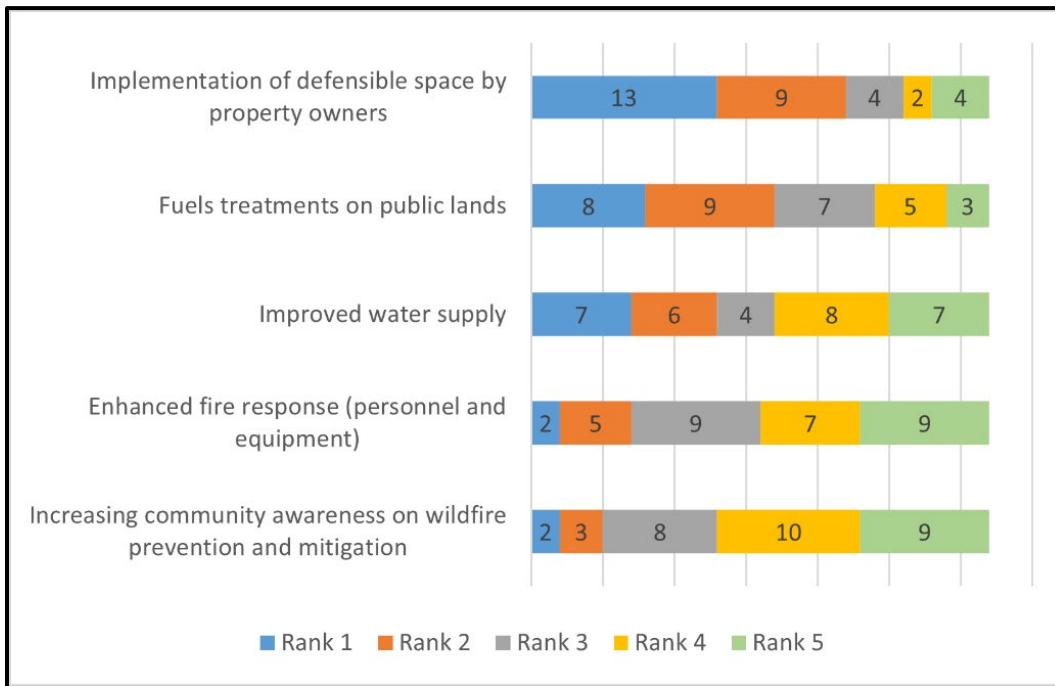
My home is vulnerable to wildfire because of..... (Select top 2 choices)

Concern/Vulnerability	Number of Total Selections
Fuels on neighboring properties	24
Water supply	18
Fuels on my property	11

Concern/Vulnerability	Number of Total Selections
Ignition sources from adjacent areas	10
Building Materials	6
Accessibility	6

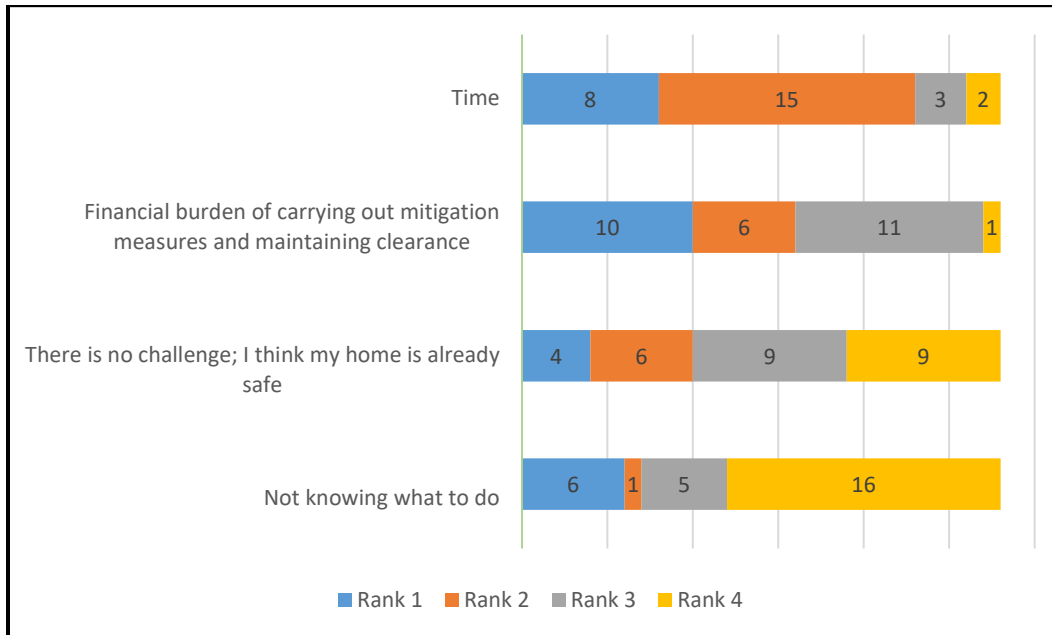
Note: the chart above shows how many time respondents selected each action as one of their two choices.

Rate the following actions in their importance to making the community better prepared for wildfire... (Please RANK 1-5; 1 is most important).



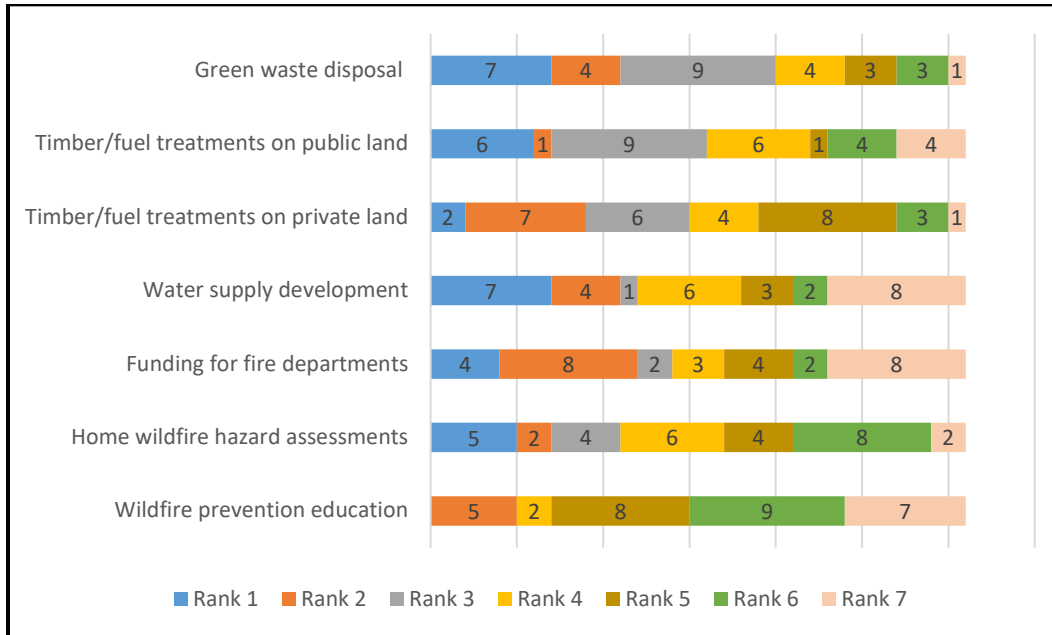
Note: the chart above shows how respondents ranked each potential action. For example, the “*fuels treatments on public lands*” action was selected 8 times as Rank #1, 9 times as Rank #2, 7 times as Rank #3, 5 times as Rank #4, and 3 times as Rank #5. The actions toward the top were chosen more often as top priorities (Ranks 1 – 2), and the actions toward the bottom were chosen more often as low priorities (Ranks 2-4).

My biggest challenge to making my home fire safe is.... (Please RANK 1-4; 1 is most important).



Note: the chart above shows how respondents ranked each potential challenge. For example, the “*Financial burden of carrying out mitigation measures and maintaining clearance*” challenge was selected 10 times as Rank #1, 6 times as Rank #2, 11 times as Rank #3, and 1 time as Rank #4. The challenges toward the top were chosen more often as top priorities (Ranks 1 – 2), and the challenges toward the bottom were chosen more often as low priorities (Ranks 2-4).

**I would be most interested in funding to help me and my community with....
(Please RANK 1-7; 1 is most important).**



Note: the chart above shows how respondents ranked each item. For example, the “*timber/fuel treatments on private land*” item was selected 2 times as Rank #1, 7 times as Rank #2, 6 times as Rank #3, 4 times as Rank #4, 8 times as Rank #5, 3 times as Rank #6, and 1 time as Rank #7. The items toward the top were chosen more often as top priorities (Ranks 1 – 4), and the items toward the bottom were chosen more often as low priorities (Ranks 5-7).

Are you currently using prescribed fire to treat your property?

Answer	Number of Responses	Percentage
No	25	71.4%
No, but I am interested in learning more.	6	17.1%
Yes	4	11.4%
Grand Total	35	100.0%

Do you have an updated evacuation plan for you/your family?

Answer	Number of Responses	Percent
Yes	19	51.4%
No	18	48.6%
Grand Total	37	100.0%

Do you have an emergency evacuation kit ready?

Answer	Number of Responses	Percent
No	26	70.3%
Yes	11	29.7%
Grand Total	37	100.0%

Are you familiar with local evacuation routes?

Answer	Number of Responses	Percent
No	10	27.8%
Yes	26	72.2%
Grand Total	36	100.0%

How likely are you to leave your home under an optional evacuation order?

Answer	Number of Responses	Percent
Will evacuate	15	40.5%
Not sure	13	35.1%
Will not evacuate	9	24.3%
Grand Total	37	100.0%

How likely are you to leave your home under a mandatory evacuation order?

Answer	Number of Responses	Percent
Will evacuate	31	83.8%
Not sure	3	8.1%
Will not evacuate	3	8.1%
Grand Total	37	100.0%

Do you know how to sign up for local emergency notifications?

Answer	Number of Responses	Percent
Yes	30	81.1%
No	7	18.9%
Grand Total	37	100.0%

Are you registered for local emergency notifications?

Answer	Number of Responses	Percent
Yes	27	73.0%
No	10	27.0%
Grand Total	37	100.0%

Name any community resources you would most like to see prioritized for protection from wildfire (e.g., natural areas, cultural sites, municipal infrastructure, and recreation sites).

Community Resources			
<i>Post Office 93549</i>	<i>Residential areas that border wildland fuels</i>	<i>Hospitals and schools</i>	<i>Our mountains and homes</i>
<i>Meadow Creek I and II – LADWP lands</i>	<i>Recreation sites</i>	<i>Campgrounds</i>	<i>Cultural resource sites</i>

Any other areas of concern or comments?

Areas of Concern/Additional Comments			
<i>Assess and implement fuels treatment on LADWP land west of Barlow to Brockman Lane and north of US Hwy 395 to Dixon Lane, so to protect Meadow Creek I and II.</i>			
<i>Wildfire plan for city of Bishop</i>	<i>Water supply development in Old Wilkerson</i>	<i>Emergency Water Systems for fire prevention</i>	<i>Safety zones, community infrastructure.</i>
<i>Remedies for poor ingress and egress for residential neighborhood with dead-end streets; lack of escape routes.</i>			
<i>Area west of Brockman Lane from West line street to Diaz Ln. Fuel are not cut back far enough and creek area needs to be clean out for 76 feet</i>			
<i>Water available, people to fight fires, clearing of property nearby</i>			
<i>An egress route for the 6 homes at the end of Gerkin Road.</i>			
<i>There are too many abandoned nearby properties here. Owners are vacant, fuels are extreme in natural and structural nature.</i>			
<i>Trash/hoarding on properties is a fire and health hazard. These properties present a danger to neighborhoods. The problem requires addressing by county and local fire departments.</i>			
<i>The BLM has closed a lot of dispersed camping in the Alabama hills. This has resulted in people camping very close to the residential area of the Alabama Hills. It's only a matter of time before we have a fire in this area.</i>			
<i>We are limited to ONLY one exit route. We live in a riparian corridor heavy with fuel.</i>			
<i>My main concern is neighboring properties that have fuels, firewood, dead grass and brush and shingle roofs. These are rentals and not owner occupied. Owners do no maintenance. Also on Shepard lane there is only one way out. It would be nice to own an easement for emergencies to the north so we have an escape route through McLaren neighborhood.</i>			
<i>I would love expert advice on what I should do with my backyard trees. I'm considering removing them.</i>			
<i>We're really worried about lack of evacuation routes for Longview Drive.</i>			
<i>Old Wilkerson was largely developed before code enforcement, thus no hydrants, storage tanks for water and roads that cannot handle heavy firefighting trucks.</i>			
<i>Most important issue is keeping insurance options available for the area</i>			
<i>Dixon Lane area has several encounters with fires near by which have occurred on VERY windy days. Fires caused by the public...</i>			

STAKEHOLDER OUTREACH

To convene an all-inclusive Core Team, SWCA, the Whitebark Institute, and the Inyo County OES conducted extensive stakeholder outreach that consisted of emails, calls, video conferencing, and in-person meetings with personnel from the local government, local tribes, private entities, fire organizations, and federal and state land managers (see Figure H.9).



Figure H.9. Inyo County second Core Team meeting (August 9, 2023).

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SWCA

APPENDIX I:
Project Recommendations

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Table I.1. Recommendations for Creating Resilient Landscapes (Hazardous Fuels Reduction)

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #1		H	Ongoing	Sustain maintenance of existing fuel breaks and progress with execution of planned fuel breaks	Inyo County	BLM, CAL FIRE, USFS, NPS, CDFW, LADWP, Edison, tribes	<ul style="list-style-type: none"> Implement a routine maintenance schedule and inspection schedule for existing fuel breaks to ensure their effectiveness <ul style="list-style-type: none"> Maintain existing fuel breaks according to vegetation conditions Investigate prescribed grazing through pilot projects Execute planned fuel break projects according to established timelines and priorities Collaborate with relevant agencies, organizations, and communities to ensure project success Integrate the mitigation of hazards, such as dead or diseased trees, into fuel break maintenance plans Assess if existing fuel breaks on national forest and BLM lands are sufficiently wide to be effective; expand fuel breaks where needed 	Provide continued effectiveness of previously installed fuel breaks	Regular evaluations and maintenance needed to keep fuel break effectiveness	<ul style="list-style-type: none"> USFS CWDG Grants CAL FIRE Grant Programs FEMA BRIC Grants California Fire Safe Council Grants Landscape Scale Restoration Competitive Grant Program Inyo County general fund
RL #2		H	Spring 2025	Strategically install fuel breaks countywide in accordance with risk assessment findings	Inyo County	BLM, CAL FIRE, USFS, NPS, CDFW, LADWP, private landowners, tribes	<ul style="list-style-type: none"> Install fuel breaks in high-risk areas and prioritize underserved, remote, and isolated areas. Potential fuel break locations include: <ul style="list-style-type: none"> Along community perimeters Perpendicular to average wind direction in vulnerable areas Along rights-of-way, including evacuation corridors Along riparian corridors that lead into communities, strategically reducing ladder fuels and breaking up fuel continuity Areas that support protection of the WUI Areas that increase fire responder safety Communities surrounded by steep topography and heavy fuels Around critical infrastructure and facilities Along strategic ridge tops Look for opportunities to expand or tie into existing fuel breaks for improved effectiveness Assess opportunities to implement fuels reduction projects to align with Potential Operational Delineations (PODs) and/or USFS's Strategic Fire Management Zones 	Provide access to fire personnel Establish fuel breaks and fire containment lines Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI Protect communities and critical infrastructure and facilities	Regular evaluations and maintenance needed to keep fuel break effectiveness	<ul style="list-style-type: none"> USFS CWDG Grants CAL FIRE Grant Programs FEMA BRIC Grants California Fire Safe Council Grants Landscape Scale Restoration Competitive Grant Program
RL #3		H	Spring 2025	Collaborate with LADWP to manage fuel loads on unmaintained properties	Inyo County	Inyo County, LADWP, CAL FIRE, NRCS, Inyo-Mono Resource Conservation District (IMRCD)	<ul style="list-style-type: none"> Inyo County to continue working with LADWP and act as a link between property owners and LADWP to manage fuel loads on LADWP owned and/or leased lands Inyo County and LADWP to ensure that vegetation management requirements in the LADWP lease agreements are being met In cases where properties violate county ordinance and the property lessee is absent, Inyo County shall contact LADWP to inform them about the situation Continue to partner with CAL FIRE to implement prescribed burns to improve health of rangelands 	Protect life and property by mitigating fuels. Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI.	Follow up with post-treatment stabilization practices. Arrange a standing multi-agency meeting each year to review accomplishments and address future needs Annual updates and maintenance, including site visits	<ul style="list-style-type: none"> Firewise Grants BRIC Fire Prevention and Safety (FP&S) Grants (FEMA) Community Wildfire Defense Grants (CWDG)

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #4		M	Winter 2024	Establish and maintain a centralized database of organizations, including nonprofit organizations, fire mitigation groups, and land managers for collaborative fuels reduction initiatives to act as project sponsor	Inyo County	Inyo County, Whitebark Institute (the Institute can assist since they already have much of this information)	<ul style="list-style-type: none"> Identify the specific areas and aspects of fuels work where organizations can potentially collaborate <ul style="list-style-type: none"> Categorize organizations based on their expertise and resources Establish relationships with existing organizations who work on such projects Connect with other nonprofits in the region to explore opportunities Facilitate resource sharing between organizations and relevant county agencies, including personnel and funding opportunities Make the centralized list easily accessible to relevant county agencies, fire departments, and community stakeholders Host networking events or workshops that bring together organizations and county stakeholders to foster engagement and collaboration Encourage community members to participate in or support organization-led projects Work on standardizing indemnification or "hold harmless" language to facilitate on the ground efforts Collaborate and share information and resources with Mono County Kern County needs to be added on the south end of Inyo; they are our closest resources. Sage Flats area needs to be monitored. Create a QR code system for incoming fire resources to access maps of water sources on all lands and other relevant information. Consider including roads, town boundaries, and relevant infrastructure. 	<p>Enhance wildfire preparedness and community wildfire resilience</p> <p>Reduce fuel continuity within communities and create resilient landscapes</p>	Regular maintenance and review of effectiveness	<ul style="list-style-type: none"> USFS CWDG Grants CAL Fire Grant Programs FEMA BRIC Grants California Fire Safe Council Grants NFPA Firewise Grants
RL #5		M	Fall 2024	Identify and execute watershed-scale ecosystem projects cross jurisdictions (i.e., private, federal, tribal, state) to enhance wildfire resilience, wildlife habitat, and water quality		Inyo County, LADWP, USFS, BLM, CDFW, CAL FIRE, NPS, tribes, NRCS, IMRCD, ESCOG, SCE, Whitebark Institute	<ul style="list-style-type: none"> Collaborate with agencies, environmental organizations, and community stakeholders to design and implement integrated riparian fuel reduction projects Develop comprehensive project plans that outline specific mitigation strategies and ecological restoration goals Utilize a combination of fuel reduction methods tailored to riparian areas, including prescribed burns, mechanical thinning, debris removal, chipping, and targeted vegetation management <ul style="list-style-type: none"> Ensure that mitigation efforts comply with environmental regulations and best practices to minimize ecological impacts Build on the riparian maintenance documentation to streamline environmental review and permitting. Integrate restoration practices that promote water quality, soil health, and native vegetation recovery Assess and prioritize watersheds based on: <ul style="list-style-type: none"> Wildfire risk Presence of sensitive species Watershed health Develop and implement a monitoring program to track the effectiveness of fuel reduction and restoration projects Partner with Mono County for regional watershed projects 	<p>Reduce hazardous fuels throughout the county.</p> <p>Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI.</p> <p>Ensure the protection of vulnerable ecosystems and values at risk</p>	Maintenance and updates as needed	<ul style="list-style-type: none"> CAL FIRE Forest Health Grants CalEPA Loans and Grants USFS CWDG California Climate Investments Fire Prevention Grant Program (CAL FIRE) Landscape Scale Restoration Competitive Grant Program

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #6		M	Spring 2025	Conduct a community assessment to gauge interest in establishing a prescribed burn association	Inyo County	Inyo County, Mono County, local fire safe councils, Great Basin Unified Air Pollution Control District, CAL FIRE, BLM, USFS, local fire departments	<ul style="list-style-type: none"> Conduct an initial study to gauge interest in prescribed burning Collaborate with regional resource conservation districts Raise awareness of benefits for prescribed fire and cultural burning as ecological practices that can control invasive species and increase wildfire resilience <ul style="list-style-type: none"> Partner with local experts, universities, environmental organization, fire departments, and other agencies to create a framework for the use of prescribed fire for invasive species management Develop educational materials and demonstrations Increase awareness of fire as a means to promote traditional foods and medicines Establish a partnership with Mono County to form a regional prescribed burn association 	Enhance regional landscape resiliency Streamline prescribed burn projects Reduce hazardous fuel loading Potentially restore landscapes Improve understanding of CAL FIRE policy that guides prescribed fire on private lands	Ensure open communication with public Maintenance and updates as needed	<ul style="list-style-type: none"> CAL FIRE Grant Programs USFS CWDG Grants California Fire Safe Council Grants
RL #7		H	Spring 2025	Collaborate with tribal governments and organizations to identify and implement wildfire resilience and ecosystem restoration projects aligned with tribal land management objectives and stewardship	Inyo County	Inyo County, tribal governments and organizations, CAL FIRE, BLM, LADWP, USFS, NPS, Whitebark Institute	<ul style="list-style-type: none"> Develop projects collaboratively with tribal leaders to ensure that efforts are in alignment with tribal land management goals and objectives Develop formal agreements and partnerships between the county, land management agencies, and tribal governments and organizations to outline shared objectives and responsibilities Conduct assessments of tribal lands and adjacent areas to identify vulnerable areas and ecosystems in need of restoration Share resources, knowledge and expertise between county agencies, land management agencies, and tribal groups to enhance effectiveness of projects Provide training and education programs that enhance the capacity of tribal governments and organizations and local communities in wildfire mitigation, ecosystem restoration, and cultural preservation Develop monitoring programs to track the progress and outcomes of restoration projects Foster community engagement and participation in wildfire resilience and ecosystem restoration by involving tribal and non-tribal land community members Promote public awareness and inclusivity in wildfire resilience and restoration projects by highlighting the cultural and ecological significance of tribal lands Collaborate with Mono County for regional projects 	Establish cohesive planning with tribal management approaches and tribal values	Continued communication and collaboration with tribal governments, organizations and members Regular evaluations and maintenance	<ul style="list-style-type: none"> CAL FIRE Forest Health Grants CalEPA Loans and Grants USFS CWDG California Climate Investments Fire Prevention Grant Program (CAL FIRE) Landscape Scale Restoration Competitive Grant Program Regional Forest and Fire Capacity Grant Program

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #8		M	Fall 2025	Expedite completion of post-fire recovery projects for community safety and environmental resilience		USFS, BLM, NPS, Bureau of Indian Affairs	<ul style="list-style-type: none"> Conduct an inventory of USFS post-wildfire recovery projects that remain incomplete Prioritize the identified projects based on their significance for ecosystem objectives, community safety, environmental restoration, and long-term resilience Collaborate with local and regional partners, including nonprofits and volunteer organizations to supplement staffing and resources Coordinate with relevant agencies, such as state and county authorities, to streamline approval and execution of high-priority projects Address immediate safety concerns by prioritizing hazard tree mitigation and road maintenance projects to minimize potential post-fire hazards Focus on ecological restoration, including post-fire planting in non-forested areas, to aid in habitat recovery and environmental resilience Work with Mono County where applicable 	<p>Aid in restoration and rehabilitation of landscape impacted by wildfire</p>	<p>Regular monitoring of post-fire environment.</p> <p>Committed long term effort to tracking post-wildfire recovery and assessing post-wildfire risks.</p> <p>Assessment of WUI and watersheds at risk in the post-fire environment</p>	<ul style="list-style-type: none"> Environmental Quality Incentives Program (EQIP) Red Cross: Disaster Relief and Recovery Services Red Cross Before, During & After Wildfire CAL FIRE Forest Health Grants CalEPA Loans and Grants Landscape Scale Restoration Competitive Grant Program Department of Interior funding for post-wildfire burn area rehabilitation and restoration
RL #9		M	Fall 2025	Integrate and enhance the countywide invasive species management program with other relevant fire, land, and vegetation management plans and programs	Inyo County	Inyo County, BLM, NPS, USFS, CAL FIRE, CDFW, LADWP	<ul style="list-style-type: none"> Synchronize planning objectives between the invasive species management program with other fire, land, and vegetation management plans Conduct a study to identify the extent and impact of invasive species, and identify and prioritize projects throughout the county Prioritize invasive species based on their threat to ecosystems, wildfire risk, and water resources Implement control measures tailored to each invasive species, which may include herbicide application, controlled burns, mechanical removal, and biological control Engage local communities in invasive species management efforts, encouraging residents to participate in removal and reporting Support research and monitoring programs to better understand invasive species' behavior and develop more effective control strategies Collaborate with state and federal agencies to access resources, expertise, and grant opportunities for invasive species management Conduct public education campaigns to inform the residents about the negative impacts of invasive species and the importance of their control <ul style="list-style-type: none"> Increase awareness that the spreading of water in wet years by LADWP increases invasive species growth. In the areas that are dry most times of the year. Collaborate with Mono County for cross county efforts 	<p>Ensure the protection of vulnerable ecosystems</p> <p>Create and restore resilient landscapes</p>	<p>Revise and review strategy on an annual basis</p> <p>Track yearly progress</p>	<ul style="list-style-type: none"> USFS CWDG Grants FEMA BRIC Grants CalEPA Loans and Grants CAL FIRE Forest Health Grants Landscape Scale Restoration Competitive Grant Program

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #10		H	Winter 2024	Enhance green waste disposal capacity: acquire additional chipping equipment and explore curtain burners to efficiently manage green waste disposal	Inyo County	Inyo County, USFS, BLM, CAL FIRE	<ul style="list-style-type: none"> Conduct an assessment of the volume and types of green waste generated through fuels reduction in the county to determine disposal needs Procure additional chippers to enhance green waste disposal capacity Conduct a feasibility study for the use of curtain burners to manage green waste, evaluating safety, environmental impact, and cost-effectiveness Explore options for expanding waste disposal sites, ensuring accessibility where it's most needed Engage the community in discussions about green waste disposal, gathering input on preferences and addressing concerns Allocate necessary resources and funding to support the acquisition of equipment Initiate pilot programs to test the effectiveness of different green waste disposal methods and collect data for decision-making Establish a partnership with Mono County for enhanced resource sharing and allocation Use green waste as part of garden mulch process to enhance poor soil conditions 	<p>Reduce fuel loading and continuity within and around communities</p> <p>Enhance regional landscape resiliency</p>	<p>Revise and review strategy on an annual basis</p> <p>Track yearly progress</p>	<ul style="list-style-type: none"> USFS CWDG Grants FEMA BRIC Grants CalEPA Loans and Grants CAL FIRE Forest Health Grants CAL FIRE Grant Programs
RL #11		M	Fall 2025	Manage vegetation around and within communities throughout the county	Inyo County	LADWP, Inyo County, CAL FIRE, CDFW, USFS, BLM, Tribes	<ul style="list-style-type: none"> Continue and expand upon successful vegetation management efforts, particularly mowing around community perimeters to maintain defensible space <ul style="list-style-type: none"> Expand and improve efforts and engagement in tribal lands Collaborate with tribes and communities to prioritize areas for vegetation management, ensuring alignment with tribal and community needs Conduct public outreach to keep residents informed about ongoing projects and their benefits Allocate necessary resources and funding to support the continuation and expansion of these projects Explore innovative methods, such as BurnBox, to minimize risk and costs of controlled burns and to increase workforce capacity Look for opportunities to use goats and burn piles in the rain and snow. 	<p>Protect life and property by mitigating fuels.</p> <p>Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI.</p>	<p>Follow up with post-treatment stabilization practices.</p> <p>Arrange a standing multi-agency meeting each year to review accomplishments and address future needs</p> <p>Annual updates and maintenance</p>	<ul style="list-style-type: none"> Firewise Grants BRIC Fire Prevention and Safety (FP&S) Grants (FEMA) Community Wildfire Defense Grants (CWDG) Landscape Scale Restoration Competitive Grant Program

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #12		H	Fall 2025	Hazard Tree and Vegetation Survey and Mitigation: Survey and inventory of hazard trees, and areas of overstocked dense vegetation, focusing on high-risk areas, to guide targeted efforts for tree removal, maintenance, and risk reduction, enhancing community and firefighter safety and wildfire resilience	Inyo County	USFS, BLM, NPS, LADWP, SCE, CAL FIRE	<ul style="list-style-type: none"> Initiate a comprehensive survey and inventory of hazard trees (dead and dying trees) throughout the county throughout all jurisdictions (i.e., private, state, and federal land) Compile, centralize and share existing information on hazard trees <ul style="list-style-type: none"> Create a data hub to facilitate information and data sharing between agencies Prioritize the assessment of high-risk areas (e.g., communities, roadways, and recreational sites) and where hazard trees are known to pose an immediate threat Gather data on the location, species, conditions, and proximity to infrastructure and buildings of identified hazard trees Create a detailed map and database to record and store information on hazard trees, ensuring accessibility across agencies Classify hazard trees into different risk categories to guide mitigation efforts, focusing on the most urgent cases Develop a hazard tree mitigation plan that outlines strategies for tree removal, maintenance, or treatment <ul style="list-style-type: none"> Outline responsibilities between collaborating agencies Develop and implement a monitoring system to track the progress of hazard tree mitigation projects and share results to stakeholders and the public 	Create resilient landscapes and address potential trees and stands that may contribute to extreme wildfire behavior	Regular reassessment and post-treatment monitoring	<ul style="list-style-type: none"> USFS CWDG Grants CAL FIRE Grant Programs FEMA BRIC Grants California Fire Safe Council Grants NFPA Firewise Grants Regional Forest and Fire Capacity Grant Program
RL #13		H	Ongoing	Continue to support implementation of projects identified in the Independence and 40 Acres CWPPs	Independence and 40 Acres	Refer to the Independence and 40 Acres CWPPs	<ul style="list-style-type: none"> Refer to the Independence and 40 Acres CWPPs 	Protect life and property through effective wildfire management. Establish cohesive planning approach with regard to wildfire management.	Annual maintenance and updates to materials	<ul style="list-style-type: none"> Community Planning Assistance for Wildfire (CPAW) BRIC FP&S Firewise grants California Fire Safe Council Grants Regional Forest and Fire Capacity Grant Program Landscape Scale Restoration Competitive Grant Program
RL #14		M	Ongoing / as needed	Post-rainfall fuel loading assessment: evaluate fuel loading in high-risk areas, including main access points and community perimeters, after heavy rainfall events	High-risk areas in Inyo County	Inyo County, USFS, CAL FIRE, BLM, LADWP	<ul style="list-style-type: none"> Gather data on the type, quantity, density, and conditions of annual fuels present in these areas to determine potential wildfire risks Classify fuel loading based on risk levels, prioritizing areas that pose the greatest threat to communities Revisit existing fuel breaks to determine if maintenance is needed 	Enhance public safety, improve wildfire response, and limit size of wildfires Evaluate capacity to address vegetative growth and increased fire risk	Updates and enforcements to codes as necessary Perform regular inspections	<ul style="list-style-type: none"> Community Wildfire Defense Grants (CWDG) National Fire Plan (NFP) Grants Building Resilient Infrastructure and Communities (BRIC) California Fire Safe Council Grants Regional Forest and Fire Capacity Grant Program

Project ID	Status	Priority (H,M,L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL #15		L	Fall 2027	Re-run the wildfire risk assessment with calibrated fuel types and at a higher resolution	Highest risk communities	Inyo County OES, USFS, BLM, CAL FIRE	<ul style="list-style-type: none"> Execute the risk assessment at the community scale, focusing on high-risk communities Investigate companies or organizations specializing in high-resolution imagery and fuel mapping to perform the updated assessment Ensure that fuel types used in the new assessment are calibrated to local conditions and accurately represent the fuel loads Analyze the updated risk assessment to identify areas of high wildfire risk to prioritize mitigation efforts 	Increase overall community resiliency	Revise risk assessment as needed (e.g., after major fires)	<ul style="list-style-type: none"> USFS CWDG Grants CAL FIRE Grant Programs California Fire Safe Council Grants NFPA Firewise Grants
RL #16		H	Fall 2024	Evaluate and implement the fuels treatments identified in the fuels treatment map (Figure 4.1)	As identified on the map	CAL FIRE, USFS, BLM, Inyo County OES	<ul style="list-style-type: none"> Review the identified fuels reduction treatments in the fuels treatments layer of the map Conduct on-site assessments of the locations identified for fuels treatments to determine their current conditions and suitability for treatment Consult with local experts to ensure feasibility and functionality (i.e., degree of protection a treatment would provide) Select appropriate fuels reduction treatments based on the site assessments and the specific vegetation and wildfire risk factors present Develop a detailed treatment plan for each location, outlining the specific treatments to be implemented, the methods to be used, and the expected outcomes Monitor the treated areas regularly to assess the effectiveness of the treatments that may arise Modify the treatment plans and strategies as needed based the monitoring results and changing conditions Engage with local communities and stakeholders to ensure that they are aware of the treatments and to solicit feedback and support Prepare regular reports on the progress of the treatments and their effectiveness in reducing wildfire risk 	Provide access to fire personnel Establish fuel breaks and fire containment lines Create resilient landscapes and address potential for extreme wildfire behavior in and around the WUI Protect communities and critical infrastructure and facilities	Conduct regular evaluations and maintenance to maintain fuel break effectiveness	<ul style="list-style-type: none"> USFS CWDG Grants CAL FIRE Grant Programs FEMA BRIC Grants California Fire Safe Council Grants Landscape Scale Restoration Competitive Grant Program

Table I.2. Recommendations for Fire-Adapted Communities (Structural Ignitability and Public Education and Outreach)

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FAC #1		H	Ongoing	Continue to enhance visitor outreach and education while addressing issues related to dispersed camping and recreational activities	Inyo County	Nonprofit organizations, Inyo County, BLM, USFS, NPS, LADWP	<ul style="list-style-type: none"> • Include safety and educational materials to campground reservation websites • Investigate opportunities to add fire safety flyers to wood bundles in popular camping stores (Independence Fire Safe Council model) • Increase awareness and promote the "Camp Like a Pro" program • Utilize consistent branding that is being developed through Visitor Experience/Connection Program • Increase fire safety signage year-round throughout popular dispersed camping areas • Enforce camping rules and regulations on all agency lands (e.g., USFS, LADWP, BLM, NPS, etc.) as well as tribal campgrounds • Upgrade campgrounds to improve emergency response vehicle access • Investigate the feasibility of increasing agency patrols and enforcement 	Reduce loss of life and structures through increased resident and visitor understanding and participation fire safety on recreational lands	Annual program evaluation and updates as necessary. Track and record community participation, identify effective outreach strategies	<ul style="list-style-type: none"> • FEMA Building Resilient Infrastructure and Communities (BRIC) Grants • The Fire Prevention and Safety Grants (FP&S) • USFS CWDG • EPA Environmental Education Grants • CAL FIRE Grant Programs • California Fire Safe Council Grants
FAC #2		H	Fall 2024	Resolve limited access issues (e.g., one way in and out of the community), and incorporate solutions into the General Plan's Safety Element (circulation) element for improved safety and accessibility	Inyo County	Inyo County, private landowners, BLM, USFS	<ul style="list-style-type: none"> • Conduct and initial assessment of ingress and egress issues to identify high-risk roads • Prioritize road maintenance and clearance efforts to ensure safe passage for emergency vehicles and residents <ul style="list-style-type: none"> ○ Maintain fire access roads ○ Promote resident involvement in ROW vegetation clearance efforts ○ Establish regular maintenance schedules to address encroaching vegetation, debris, and road surface conditions ○ Maintain turn around locations, where appropriate, for first responders, and determine the need for improving or construction of new ones • Consider using backroads on public and private lands as alternatives ingress and egress points <ul style="list-style-type: none"> ○ Work with relevant entities to assess feasibility • Develop and communicate plans for communities with limited access. Ensure that residents are aware of all potential evacuation routes • Establish vegetation management programs and/or centralize existing plans from agencies that are responsible for ROW management • Conduct assessments of bridges with unknown capacities to determine their load-bearing capacities <ul style="list-style-type: none"> ○ Upgrade or replace bridges that do not meet safety standards ○ Document load bearing-capabilities of bridges, and ensure proper signage is posted at key bridges, to promote safety of first responders 	Provides safe and effective means of evacuation in case of emergencies	Regular monitoring and maintenance to ensure roads are drivable for emergency response vehicles	<ul style="list-style-type: none"> • FEMA BRIC Grants • FEMA Fire Management Assistance Grant (FMAG) • USFS CWDG • Assistance to Firefighters Grants (AFG)

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Implement fire breaks and fuel reduction measures along key access roads to mitigate fire risks and increase fire responder safety Collaborate with transportation authorities and agencies to address road safety concerns and explore funding opportunities for road improvements Install clear and informative directional signage in communities with dead ends, cul-de-sacs, and complex layouts to aid navigation for emergency responders Collaborate with County planners and community stakeholders to ensure that future development accounts for improved access and safety considerations Create and maintain a map with emergency access roads 			
FAC #3		H	Ongoing	Continue to develop a comprehensive public education and community engagement program	Inyo County	Inyo County, Mono County, Eastern Sierra Council of Governments, local Fire Safe Councils, CAL FIRE, local fire jurisdictions, USFS, BLM, NRCS, IMRCD, local nonprofit organizations, Tribes	<ul style="list-style-type: none"> Develop a comprehensive outreach strategy that considers the County's unique challenges <ul style="list-style-type: none"> Utilize both online and offline communication methods (e.g., bulk mailing, radio, local newspapers) to ensure that all residents and visitors are reached Continue to organize community engagement events, such as defensible space workshops or wildfire simulation and evacuation exercises to engage residents directly and promote involvement Provide an initial announcement to residents, including short-term and absentee residents, living in the WUI that contains copy of Inyo County's WUI ordinance, CAL FIRE's defensible space standards, and fire district information for help and questions <ul style="list-style-type: none"> Utilize the county assessor records to identify changes in property ownership to send the announcements to new residents Develop and distribute educational materials to inform landowners about proper riparian area treatment <ul style="list-style-type: none"> Create and distribute maps with riparian corridors Notify landowners about Fish and Game Section 1602 Work to further the programmatic documentation to streamline work on riparian fuels. Increase awareness and knowledge through community workshops and training classes on buffer strips, defensible space, fire safe landscaping, structural hardening, and the benefits of prescribed burning and mechanical fuels treatments Increase awareness about common human ignition sources and associated dangers (e.g., fireworks, vehicles, and BBQ fires that are not extinguished properly) <ul style="list-style-type: none"> Identify areas with high frequencies of human ignitions to focus educational efforts 	Reduce risk of human-caused wildfire ignitions. Educate citizens about wildfire hazards.	Conduct regular review of outreach materials as needed. Track local engagement.	<ul style="list-style-type: none"> FEMA Building Resilient Infrastructure and Communities (BRIC) Grants USFS CWDG The Fire Prevention and Safety Grants (FP&S) EPA Environmental Education Grants CAL FIRE Grant Programs California Fire Safe Council Grants

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Establish a program to have Fire Safe Council volunteers or community leaders along with fire agency personnel (e.g., USFS, CAL FIRE, etc.) perform a walkthrough with residents in high-risk areas and provide a writeup of potential mitigation actions Increase awareness of the wildfire-related issues of invasive plants Increase awareness and knowledge about the practices and benefits of cultural burning Provide information to the public on forest health, fire ecology, and environmental issues <ul style="list-style-type: none"> Ensure inclusivity and support for vulnerable populations (e.g., disabled residents, low-income individuals, tribal members, non-English-speakers, etc.) in wildfire planning, preparedness, and response efforts Seek partnerships and projects with the UC Extension Continue to expand collaborations with local organizations such as Master Gardeners and UC Extension. <ul style="list-style-type: none"> Partner with federal agencies, special districts, community associations, Fire Safe Councils, schools, and nonprofits to facilitate outreach efforts. Identify and empower community leaders or champions who can advocate for wildfire preparedness and education within their communities Develop a system for periodic updates and feedback collection from the community to ensure that outreach efforts remain effective and responsive to community needs Tailor outreach materials and messages to address the specific concerns of each remote community, including issues related to fire protection, water resources, road access, and evacuation planning Continue to provide resources and guidance to remote communities for fuels reduction efforts <ul style="list-style-type: none"> Maintain a user-friendly website dedicated that centralizes wildfire safety information and resources Establish programs in schools to distribute wildfire safety information to students Establish a partnership with Mono County to create consistent messaging and reach broader audiences Include education and outreach efforts regarding public safety power shutoff events Consider offering the Last Chance Survival Simulation Workshop with field tours to learn about Temporary Refuge Areas and practice evacuation skills 			

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Consider working with the Eastern Sierra GIS Collaborative to improve community engagement and project planning/tracking/implementation, and plan updates in a manner that utilizes innovative GIS technology 			
FAC #4		M	Spring 2026	Explore the feasibility of creating a countywide ordinance for defensible space standards and regulations and synchronize with Policy 1.2 of the General Plan Housing Element Update	Inyo County	Inyo County, CAL FIRE, FPDs, Tribes	<ul style="list-style-type: none"> Investigate the feasibility of enacting a countywide defensible space ordinance. Ordinance should address: <ul style="list-style-type: none"> Regular vegetation management on entire property in accordance with CAL FIRE's defensible space standards Enforcement of the County's WUI code Flammable materials and debris accumulation Unmanaged properties with absentee landowners Clear definitions of fire hazards The El Dorado County Vegetation Management and Defensible Space can serve as a conceptual example: https://library.municode.com/ca/el_dorado_county/codes/code_of_ordinances?nodeId=PTAGEC_OOR_TIT8PUHESA_CH8.09VEMADESP 	Reduce wildfire risk and loss of structures through effective regulation.	Annual ordinance evaluation and updates as necessary.	<ul style="list-style-type: none"> FEMA BRIC Grants USFS CWDG Firewise Grants California Fire Safe Council Grants CAL FIRE Wildfire Prevention Grants
FAC #5		H	Fall 2024	Implement a countywide program to support property owners in defensible space and home hardening measures, green waste disposal, home assessments, and addressing and signage improvements	Inyo County	Inyo County, CAL FIRE, BLM, USFS, NPS, Tribes	<ul style="list-style-type: none"> Establish a mobile tool library with training sessions, serving Inyo and Mono counties and reaching remote areas. Include equipment such as chainsaws, skid steers, chippers, air curtain burners, drills, and impact drivers Synchronize efforts with Policy 1.1 of the General Plan Housing Element Update Conduct an initial assessment to identify service gaps and deficiencies Integrate this program with educational programs and proposed ordinances (see FAC #3 and #5) Procure or share chippers to support fire mitigation efforts (USFS, BLM, CAL FIRE) Establish a defensible space and home hardening assistance program that covers funding and education Establish a wildfire mitigation assistance program for disabled, elderly, and low-income residents Establish a green waste disposal program to support residents in defensible space efforts Prioritize efforts in areas that are high-risk, remote, and that lack adequate water supply Establish an assistance and outreach program for installation of reflective address markers Consider: <ul style="list-style-type: none"> Financial incentives such as tax credits for structure improvements Subsidies to offset mitigation costs (e.g., retrofits and new builds) for economically disadvantaged residents, for example, grants and cost-sharing opportunities 	Reduce wildfire risk and loss of structures through effective regulation. Facilitate sustainable and cohesive urban development.	Annual program evaluation and updates as necessary. Regular assessments in heavily vegetated areas	<ul style="list-style-type: none"> FEMA BRIC Grants USFS CWDG Firewise Grants California Fire Safe Council Grants Good Neighbor Citizenship Grant CAL FIRE Wildfire Prevention Grants

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Expanding technical assistance programs for communities at greatest risk with limited capacity Increasing financial support and technical resources to jurisdictions to hire staff and enhance capacity to adopt, enforce, and maintain building codes and standards that govern construction, design, and development in wildfire-prone areas For defensible space inspections, send notices to all residents prior to inspections Explore and research opportunities for hardening for mobile home parks 			
FAC #6		M	Spring 2026	Form a regional fire adapted communities program serving both Inyo and Mono Counties to enhance wildfire preparedness and safety in the region	Inyo and Mono Counties	Inyo County, Mono County, Eastern Sierra Council of Governments, local Fire Safe Councils, IMRCD	<p>Investigate the viability of creating a regional fire adapted communities program to serve both Inyo and Mono counties</p> <ul style="list-style-type: none"> Tie in initiative with existing efforts from relevant organizations (Resource Conservation District, ESWA, Eastern Sierra Council of Governments) Individual community-based fire safe councils could be nested under the regional umbrella Continue to, and broaden, collaborations with neighboring counties for mutually beneficial projects and initiatives Inyo County OES to continue to develop existing relationships with Resource Conservation Districts, Fire Safe Councils, and Eastern Sierra Council of Governments (ESCOG), and county departments of adjacent counties 	<p>Improve the regions self-reliance addressing wildfire concerns</p> <p>Educate citizens about wildfire hazards.</p> <p>Empower local communities.</p>	Annual program evaluation and updates as necessary.	<ul style="list-style-type: none"> Firewise grants National Urban and Community Forest Program FP&S (FEMA) EPA Grants California Fire Safe Council Grants USFS CWDG
FAC #7		H	Ongoing	Maintain efforts to raise awareness of the emergency notification system	Inyo County	Inyo County	<ul style="list-style-type: none"> Link efforts with educational initiatives (e.g., FAC #5) Conduct outreach campaigns to inform residents that the County is switching to Zonehaven and GEM <ul style="list-style-type: none"> Encourage community members to register for the new programs Conduct trainings for the new platforms Inform residents in areas with poor coverage about receiving alerts and using alternative methods to receive messages Increase subscriptions to Code RED 	Enhance effectiveness of public messaging and safety	Periodic testing to ensure the system is working correctly	<ul style="list-style-type: none"> The Fire Prevention and Safety Grants (FP&S) Assistance to Firefighters Grants (AFG) USFS CWDG CAL FIRE Wildfire Prevention Grants
FAC #8		H	Fall 2025	Develop comprehensive evacuation strategies for remote communities, encompassing the identification of evacuation routes, establishment of potential TRAs, and the implementation of tailored evacuation plans and drills. Additionally, focus on educating residents in these isolated communities with limited access on effective evacuation procedures.	Inyo County	Inyo County, local Fire Safe Councils, Cabin Owners Associations, CAL FIRE, USFS, BLM, Bishop Police Dept.	<ul style="list-style-type: none"> Collaborate with land management agencies and fire protection agencies to discuss and develop evacuation procedures Identify potential TRAs on a map and distribute to all residents Increase awareness of evacuation issues through community events, workshops, and practice drills Develop detailed maps that show all roads with potential ingress and egress points into and out of the particular community and distribute to the respective community members Focus efforts in communities with limited ingress and egress Connect refuge locations with backup batteries and generators. 	Protect public and first responder life and safety	Assess effectiveness and update following evacuations and disaster events.	<ul style="list-style-type: none"> FEMA BRIC Grants FEMA Fire Management Assistance Grant (FMAG) The Fire Prevention and Safety Grants (FP&S) USFS CWDG Assistance to Firefighters Grants (AFG)

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Collaborate with Mono County for roads and areas that intersect county boundaries Develop tailored evacuation plans for isolated and remote communities with only one road for access, addressing their unique challenges and needs Engage community members and local fire safe councils in the planning process to incorporate their local knowledge and preferences Utilize the risk assessment (Chapter 3) and the community summaries (Appendix D) to identify high-risk communities with limited access Plan and conduct evacuation drills in these communities, involving residents in practicing evacuation procedures under different scenarios Develop and test effective communication strategies to notify residents of evacuation orders and provide real-time updates during emergencies Conduct an assessment of locked gates to identify properties inaccessible to fire agencies Allocate resources, including signage, emergency equipment, and personnel, to support implementation of evacuation plans Periodically review and update the community evacuation plans to ensure they remain relevant and effective Collaborate with Mono County for communities and areas that intersect county boundaries Consider partnering with mass transit (Eastern Sierra Transit Authority) and the Sheriff's Office for evacuations and evacuation planning 			
FAC #9		M	Summer 2026	Explore and identify wildfire mitigation applications (e.g., the Fire Aside Program for Enhanced Wildfire Preparedness or FireBreak) for potential implementation	Inyo County	Inyo County, Mono County, Fire districts, IMRCD	<ul style="list-style-type: none"> Conduct a comprehensive community assessment to gauge community interest in implementing wildfire mitigation applications <ul style="list-style-type: none"> Gather input from residents, local organizations, and fire protection stakeholders to determine needs and concerns regarding wildfire preparedness Initiate a cost-benefit analysis to evaluate the advantages and disadvantages of implementing the applications <ul style="list-style-type: none"> Consider factors such as the potential reduction in wildfire risk, resource allocation, level of adoption within communities, and long-term savings in fire response costs Explore customization of the applications to cater to the specific needs and features of the county, ensuring that the applications address local challenges and conditions Assess the viability of implementing the applications in the county, considering factors such as internet coverage, technological capabilities, and potential challenges in community adoption (e.g., individuals who are non-tech-savvy) 	Educate citizens about wildfire hazards. Empower local communities.	Annual program evaluation and updates as necessary.	<ul style="list-style-type: none"> Firewise grants National Urban and Community Forest Program FP&S (FEMA) EPA Grants

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
							<ul style="list-style-type: none"> Develop an education and outreach plan to inform the community about the benefits of the application and evaluate interest Consider initiating a pilot program in a representative area or areas of the county to assess the application's functionality, user-friendliness, and effectiveness in a real-world setting Collaborate with local fire agencies, fire safe councils, nonprofits, and relevant organizations to gain their insights and support Evaluate the technical infrastructure and data capabilities of the county to ensure compatibility with the application's requirements Establish a feedback mechanism to continuously gather input from the communities, users, and stakeholders Utilize feedback to refine and enhance the application 			
FAC #10		H	Spring 2024	Promote and support the formation of local Firewise communities for enhanced community wildfire preparedness	Inyo County	Inyo County, Mono County, Inyo-Mono Firewise Coordinator, CAL FIRE	<ul style="list-style-type: none"> Conduct a comprehensive needs assessment to identify areas within the county that would benefit from the establishment of local Firewise communities Engage with communities to raise awareness of the benefits of Firewise communities Collaborate with existing Firewise communities and organizations to provide training and guidance on establishing and managing Firewise communities Define leadership roles and governance structures for Firewise communities, including selection of leaders and/or coordinators Allocate resources, which may include grants and funding, to support the establishment and initial activities of Firewise communities Utilize the Inyo County risk assessment (Chapter 3) and the community summaries (Appendix D) to identify vulnerable areas and develop localized action plans for each Firewise communities Set up a meeting schedule for regular Firewise communities meetings and reporting to track progress and outcomes Encourage community participation in Firewise communities activities, including community education, fuel reduction projects, home hardening, and evacuation planning Have individual community based Firewise communities attend the regional Firewise community meeting to disseminate consistent information. <ul style="list-style-type: none"> Work with existing entities such as Master Gardeners, RCD, ESCOG 	Educate citizens about wildfire hazards. Empower local communities.	Annual program evaluation and updates as necessary.	<ul style="list-style-type: none"> Community Planning Assistance for Wildfire (CPAW) BRIC FP&S Firewise grants California Fire Safe Council Grants Community Economic Resilience Fund

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FAC #11		M	Ongoing	Continue to align objectives between the CWPP, Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), Emergency Operations Plan, and General Plan Safety Element and Housing Element updates and revisions to enhance consistency and leverage funding opportunities for accessibility and circulation issues, evacuation planning, communications systems, water supply infrastructure, and hazardous fuel treatments, fostering an integrated and effective approach to wildfire risk reduction.	Inyo County	Inyo County	<ul style="list-style-type: none"> Facilitate coordination among relevant agencies and stakeholders responsible for updating and revising the CWPP, MJHMP, and the General Plan Safety Element Conduct a thorough review of existing documents to identify areas of inconsistency, overlap, or gaps in addressing wildfire risk reduction Establish a set of common goals and objectives that can be shared across all three planning documents to ensure synergy Identify opportunities for leveraging funding and resources by aligning grant applications, projects, and initiatives across the three planning documents Implement a schedule for regular updates and collaborative work sessions to keep all plans current and synchronized Involve the community in the alignment process by seeking input and feedback Enhance data sharing and integration among agencies, ensuring that all planning documents benefit from the latest information Review policies and regulations across the planning documents to ensure consistency and to prevent conflicts Develop mechanisms for monitoring progress, tracking implementation, and reporting results Explore innovative and collaborative approaches to planning, implementation, and monitoring, including technology and work force development 	<p>Protect life and property through effective wildfire management.</p> <p>Establish cohesive planning approach with regard to wildfire management.</p>	Updates to planning goals as needed	<ul style="list-style-type: none"> USFS CWDG CAL FIRE Wildfire Prevention Grants The Fire Prevention and Safety Grants (FP&S) California Fire Safe Council Grants Community Planning Assistance for Wildfire (CPAW) Community Planning Assistance for Wildfire (CPAW)
FAC #12		H	Ongoing	Continue to support tribal communities with wildfire preparedness and capacity building	Inyo County	Inyo County, tribal partners, USFS, CAL FIRE, BLM, NPS, LADWP, NRCS, IMRCD, Bureau of Indian Affairs tribal governments and organizations	<ul style="list-style-type: none"> Focus efforts on community education, fuels reduction, debris and rubbish removal and disposal, grant applications, and capacity building Develop tailored community education programs to address the unique requirements and cultural considerations of tribal communities Provide support and resources for fuels reduction efforts, including defensible space assistance Offer guidance and support for home hardening measures Organize debris and rubbish removal initiatives in tribal communities, addressing fire hazards and environmental concerns Engage with tribal leaders and community representatives to ensure that assistance programs align with tribal priorities and cultural values Seek partnerships with state, federal, and tribal agencies to support these initiatives Maintain ongoing outreach and communication with tribal communities to ensure their needs are being met and their concerns addressed 	<p>Improve local ability and self-reliance of tribal communities to address its wildfire concerns</p> <p>Reduce risk of loss of life and property from wildfire</p>	Annual assessment of personnel and equipment capacity.	<ul style="list-style-type: none"> FEMA BRIC Grants FEMA Fire Management Assistance Grant (FMAG) Firewise Grants 2022 Infrastructure Investments and Jobs Act Assistance to Firefighters Grants (AFG)

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FAC #13		H	Ongoing	Continue to support implementation of projects identified in the Independence and 40 Acres CWPPs	Independence and 40 Acres	Refer to the Independence and 40 Acres CWPPs	Refer to the Independence and 40 Acres CWPPs	Protect life and property through effective wildfire management. Establish cohesive planning approach with regard to wildfire management.	Annual review and updates to materials	<ul style="list-style-type: none"> Community Planning Assistance for Wildfire (CPAW) BRIC FP&S Firewise grants National Urban and Community Forest Program California Fire Safe Council Grants Regional Forest and Fire Capacity Grant Program Landscape Scale Restoration Competitive Grant Program
FAC #14		M	Summer 2025	Collaborative fire mitigation toolkit: develop an accessible and informative toolkit for private property owners to navigate the process of collaborating with land managers		Inyo County, LADWP, BLM, USFS, CAL FIRE, CDFW, NPS	<ul style="list-style-type: none"> Develop a comprehensive toolkit for private property owners, outlining the process and requirements for collaborating with land managers (e.g., LADWP, BLM, USFS, etc.) on fire mitigation projects Ensure that the toolkit is easily accessible and transparent, with clear instructions and contact information for relevant land management agencies <ul style="list-style-type: none"> Include a detailed map that clearly shows jurisdictional boundaries Provide information on the legal and regulatory consideration for conducting fire mitigation work on land managed by governmental agencies (e.g., creeks and streams, areas with sensitive species, etc.) <ul style="list-style-type: none"> Include guidance on the permitting process, documentation requirements, and any associated fees or costs Offer resources and contact details for agency representatives who can assist private property owners in project planning and implementation Conduct outreach to inform homeowners about the toolkit's availability and importance Establish a feedback mechanism to gather input and suggestions from property owners for toolkit improvement 	Increase collaboration Enhance community resilience	As needed	<ul style="list-style-type: none"> FEMA Building Resilient Infrastructure and Communities (BRIC) Grants USFS CWDG CAL FIRE Grant Programs California Fire Safe Council Grants
FAC #15		H	Spring 2026	Manage hazardous rubbish and debris on private property and unoccupied lots for improved safety	Inyo County	Inyo County, LADWP, private landowners	<ul style="list-style-type: none"> Assess the viability of establishing a County ordinance to require the removal of rubbish and debris Promote and establish reporting mechanisms for residents to report illegal dumping activities Establish programs and resources to assist elderly property owners in clearing rubbish and debris from their properties Launch public awareness campaigns to inform residents about the importance of maintaining their properties to reduce fire hazards <ul style="list-style-type: none"> Provide information on affordable disposal options, recycling, and responsible waste management 	Protect life and structures in proximity to overgrown lots by mitigating fuels Enhance safety for firefighters	Follow up with post-treatment stabilization practices. Frequent communication, collaboration, and cooperation with landowners. Regular maintenance to ensure area remains clear of vegetation. Monitor and treat invasive species.	<ul style="list-style-type: none"> Community Wildfire Defense Grants (CWDG) National Fire Plan (NFP) Grants Building Resilient Infrastructure and Communities (BRIC) California Fire Safe Council Grants Regional Forest and Fire Capacity Grant Program

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							<ul style="list-style-type: none"> Engage with property owners who resist to maintain their properties through respectful communication and education about the benefits of hazard reduction Encourage community members to be proactive in identifying and reporting hazardous properties Establish community cleanup events <ul style="list-style-type: none"> Organize community events in collaboration with community residents, nonprofits, and other community organizations to address excess rubbish Seek funding sources to offer incentives, such as free disposal vouchers or waived landfill fees, to encourage participation in cleanup efforts Develop and maintain a map of areas that experience the highest proportion of properties with excess rubbish 			
FAC #16		M	Ongoing	Ensure adequate clearance between power lines and trees for enhanced safety and wildfire prevention	Inyo County	Inyo County, LADWP, SCE, community residents, local fire safe councils	<ul style="list-style-type: none"> Hazard trees, or trees with improper powerline/power pole clearance may be reported to the appropriate service provider through the hotlines listed below <ul style="list-style-type: none"> LADWP: (760) 873-0251 SCE: (800) 655-4555 Increase awareness of the LADWP and SCE programs (hazard tree and vegetations management) by disseminating relevant information during public outreach campaigns (see FAC #2) 	Reduce ignitability and wildfire risk Enhance safety for firefighters	Follow up with post-treatment stabilization practices. Frequent communication, collaboration, and cooperation with landowners. Regular maintenance to utilities remains clear of vegetation.	<ul style="list-style-type: none"> Community Wildfire Defense Grants (CWDG) National Fire Plan (NFP) Grants Building Resilient infrastructure and Communities (BRIC) California Fire Safe Council Grants Regional Forest and Fire Capacity Grant Program
FAC #17		M	Fall 2027	Execute a road/evacuation risk analysis to identify high-risk roads (e.g., communities with one way in and out, narrow roads, roads with blind corners, roads with heavy vegetation, steep roads, unpaved roads, etc.)	Inyo County (communities with access and evacuation issues)	Inyo County OES, local fire jurisdictions	<ul style="list-style-type: none"> Develop an inventory of all the communities with access and evacuation issues. If possible, document road names and characteristics such as width, surface type, visibility, grade, and surrounding vegetation Prioritize analysis on the communities with the highest risk (based both on local knowledge and this CWPP's risk ratings) Consider field assessments or GIS-based analysis or a combination of both to perform the risk analysis Seek input from stakeholders, fire personnel, and community members to validate the identified high-risk roads Once the highest risk roads are identified, develop an inventory with high-priority roads Collaborate with relevant stakeholders to develop mitigation strategies for high-risk roads 	Enhance community and firefighter safety	Annual review	<ul style="list-style-type: none"> USFS CWDG California Fire Safe Council Grants California Fire Foundation Grant Program Building Resilient infrastructure and Communities (BRIC)
FAC #18		M	Spring 2026	Transition the existing Access and Functional Needs (AFN) sign up system to a digital version	Inyo County	Inyo County OES	<ul style="list-style-type: none"> Evaluate the existing AFN sign-up system to understand its workflow, requirements, and limitations Chose a digital platform or software that meets the needs of the AFN sign-up system Develop the digital AFN sign-up system, including user-friendly interfaces, accessibility features, and data security measures Provide training to county personnel and users on how to use the new system 	Streamline AFN sign-ups	As needed	<ul style="list-style-type: none"> USFS CWDG California Fire Safe Council Grants California Fire Foundation Grant Program County general fund

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							<ul style="list-style-type: none"> Launch and promote the new system among the target audience through various channels Gather feedback from users and stakeholders to identify areas for improvement and make necessary adjustments 			
FAC #19		M	Spring 2029	Develop a countywide Climate Action Plan that includes climate effects on wildfires	Inyo County	Inyo County	<ul style="list-style-type: none"> Form a task force including local government officials, environmental experts, community leaders, and representatives from vulnerable and tribal populations Host public meetings and workshops to gather input from residents on their priorities and suggestions for climate and wildfire resiliency strategies Evaluate the current CWPP to identify areas where climate action initiatives could enhance or align with wildfire prevention and mitigation efforts Ensure that the climate action plan objectives support and enhance the wildfire resilience measures outlined in the CWPP Develop educational materials and programs that inform the public about climate change impacts, mitigation strategies, and how these relate to wildfire risks Create opportunities for young people to engage with and contribute to the Climate Action Plan Ensure that all data and outcomes are openly available to the public to maintain transparency and trust 	Enhance community resiliency to climate impacts and wildfires	Regular updates	<ul style="list-style-type: none"> USFS CWDG California Fire Safe Council Grants California Fire Foundation Grant Program Building Resilient infrastructure and Communities (BRIC)
FAC 20		M	FALL 2027	Determine whether community-scale CWPPs are needed for relatively large and complex communities in Inyo County (e.g., City of Bishop)	Inyo County	Inyo County OES	<ul style="list-style-type: none"> Conduct a comprehensive assessment of the communities in Inyo County to identify those that would necessitate a detailed, community-level CWPP Engage with residents, stakeholders, community organizations, and community leaders to understand the need for community-scale CWPPs Conduct a feasibility study to evaluate the practicality and potential benefits of implementing community-scale CWPPs in identified communities Determine the resources required, including personnel, funding, and technical support, to develop and implement community-scale CWPPs 	Provide specific and targeted action plans at the community level	Regular updates	<ul style="list-style-type: none"> USFS CWDG California Fire Safe Council Grants California Fire Foundation Grant Program Building Resilient infrastructure and Communities (BRIC)

Table I.3. Recommendations for Safe and Effective Wildfire Response

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FR #1		H	Fall 2024	Identify, assess, and map existing water resources for fire suppression, ensuring comprehensive coverage	Inyo County	Inyo County, local fire jurisdictions, community service districts, water system owners, State Water Board	<ul style="list-style-type: none"> Assess existing water resources throughout the county and create a map and/or web map showing all water sources (e.g., tanks, hydrants, ponds, ditches, etc.) <ul style="list-style-type: none"> Record flow rates, pressure, and overall condition for fire hydrants Record water availability, proper fittings, and landowner willingness to collaborate for maintaining water tanks For ditches, identify areas where drafting water is accessible (e.g., where there is little to no vegetation) Record areas where drafting water is feasible (e.g., ditches and ponds) Work with fire personnel to explore the best method to host, utilize, and maintain the information 	Improve efficiency and speed of wildfire response and suppression Reduce wildfire threats to life and property	Annual assessment/review of water resources	<ul style="list-style-type: none"> Emergency Management Performance Grant (EMPG) (FEMA) RCP BRIC Firewise grants CAL FIRE Grant Programs CalEPA Loans and Grants
FR #2		H	Spring 2025	Investigate and explore approaches to enhancing water sources for firefighting purposes	Inyo County (prioritize high-risk areas that have poor or no water resources)	Inyo County, LADWP, private landowners, CAL FIRE, local fire jurisdictions	<ul style="list-style-type: none"> Establish relationships with private property owners and assess their interest in collaborating with fire departments (i.e., making their tanks, ponds, wells, or ditches accessible to firefighters during emergencies) <ul style="list-style-type: none"> Work with willing private owners to install universal fittings to water tanks Conduct community outreach to community residents to increase awareness of firefighting water supply issues and provide a list of actions they can take to support firefighting efforts (e.g., coming together as a community to map water resources in the community; installing universal fittings to water tanks; and keeping water tanks full) Maintain water resources accessible (e.g., reduce heavy vegetation near tanks, hydrants, and ditches) Collaborate with the tribes for water infrastructure improvements Conduct outreach to agricultural or industrial operators with ample water sources (e.g., large water tanks) to assess interest in collaborating with fire departments Consider painting fire hydrants according to their flow rates (NFPA standards) Implement a regular testing and maintenance program for fire hydrants to ensure they are in good working condition Consider amending the County's WUI code to require that water tanks for new development in the WUI should be kept full at all times Assess the feasibility of adding water tanks, cisterns, or dry hydrants in areas with scarce water resources 	Protect life and property through improved firefighting response Improve firefighter safety	Annual assessment/review of water resources	<ul style="list-style-type: none"> Emergency Management Performance Grant (EMPG) (FEMA) RCP BRIC Firewise grants CAL FIRE Grant Programs CalEPA Loans and Grants

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FR #3		H	Winter 2024	Establish a unified naming and signage system for street signs (naming and directional) and home addressing for improved consistency	Inyo County (focused on Charleston View, Darwin, and Homewood Canyon)	Inyo County	<ul style="list-style-type: none"> Conduct outreach to residents about the dangers of inconsistent street names and home addressing <ul style="list-style-type: none"> Seek input and feedback from local communities, residents, and relevant stakeholders to ensure that the new system aligns with community needs Inyo County Planning Department to assess potential solutions Install directional signage in communities with complex road layouts (e.g., many dead ends and cul-de-sacs) Utilize mapping and GIS technology to map and record the standardized addressing system and street names Develop a phased implementation schedule to transition to the new system while minimizing disruption to residents and services Coordinate with emergency service providers, such as fire departments and law enforcement, to ensure that the new addressing system aligns with their emergency response protocols Integrate the standardized addressing system into emergency response databases and communications systems to facilitate rapid location identification Conduct regular audits of the addressing and signage system to identify and rectify any inconsistencies or issues 	Protect life and property through Improved firefighting response	Assess current situation and determine where signage can be improved (e.g., increasingly popular recreation areas).	<ul style="list-style-type: none"> Community Planning Assistance for Wildfire (CPAW) BRIC FP&S Firewise grants National Urban and Community Forest Program Challenge Cost Share Grant Program CDWDG California Fire Foundation Grant Program California Fire Safe Council Grants

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FR #4		H	Ongoing	Explore opportunities to strengthen countywide fire department capacity building	Inyo County (focusing on high-risk areas with understaffed and underequipped fire departments)	Inyo County, local fire jurisdictions	<ul style="list-style-type: none"> Establish fire protection services contracts with communities that don't contribute to the tax base but receive services <ul style="list-style-type: none"> Encourage FDs to establish service contracts with communities that don't fall under a specific jurisdiction Centralize and provide fire protection protocols between agencies (e.g., federal response is only for vegetation fires, not structure fires) Continue to assist fire departments with grant applications and to find new sources of funding Continue to assist fire departments with the acquisition of firefighting equipment and vehicles as well as with fire station upgrades Create online resources to facilitate sharing of information between fire chiefs in Inyo County Consider establish a monthly or quarterly roundtable for regular status updates Establish and/or expand relationships with high schools, colleges, and nonprofits to encourage volunteer recruitment Inform communities about the challenges faced by FDs to emphasize the significance of supporting these organizations through volunteering, fundraising, and personal actions Explore innovative methods, such as BurnBot, to minimize risk and costs of controlled burns and to increase workforce capacity Assess the Forestry and Fire Recruitment Program for potential opportunities: https://www.forestryfire.org/what-we-do Consider establishing internships with the Cerro Coso Community College Wildland Fire and Forestry Outdoor Recreation Program 	Protect life and property through improved firefighting response	Assess capacity on an annual basis	<ul style="list-style-type: none"> FEMA Assistance to Firefighters Grants FEMA Staffing for Adequate Fire and Emergency Response Firewise grants National Urban and Community Forest Program GSA-Federal Excess Personal Property (GSA) California Fire Foundation Grant Program
FR #5		H	Ongoing	Create dedicated countywide positions for a wildfire preparedness coordinator and fire marshal to enhance wildfire readiness	Inyo County	Inyo County	<ul style="list-style-type: none"> Assess feasibility of creating a permanent countywide wildfire preparedness coordinator (Fire Prevention Officer position is vacant) and fire marshal positions. The Wildfire Preparedness Coordinator will serve to support: <ul style="list-style-type: none"> Development of annual operating plans Coordination and cooperation between agencies, organizations, and communities Implementation of projects identified in this CWPP Efforts regarding public outreach, awareness, and knowledge Volunteer fire departments and fire safe councils with building capacity Acquisition of grant funding Fostering of local forestry and mitigation businesses through strategic partnerships and workforce development initiatives The Fire Marshal would serve to support code enforcement and oversight of regulatory compliance, among other responsibilities 	<p>Improve local ability and self-reliance of Inyo County to address its wildfire concerns</p> <p>Enhance wildfire response capabilities</p>	<p>Annual review of outreach materials</p> <p>Schedule frequent check-in to monitor progress and effectiveness</p>	<ul style="list-style-type: none"> Staffing for Adequate Fire and Emergency Response (SAFER) USFS CWDG California Fire Safe Council Grants California Fire Foundation Grant Program Community Economic Resilience Fund Action, Implementation, & Mitigation Inyo County general fund

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FR #6		H	Spring 2025	Resolve communications systems issues in remote communities for enhanced connectivity and emergency response			<ul style="list-style-type: none"> Assess feasibility of upgrading existing communication systems to improve intra- and interdepartmental communications <ul style="list-style-type: none"> Explore the Inmarsat satellite communication system or related technologies Ensure that communications systems are interoperable and compatible with neighboring jurisdictions and agencies Develop a routine maintenance schedule for communications systems, including regular testing and power supply assessments <ul style="list-style-type: none"> Conduct drills and exercises to test the functionality of communications systems during simulated emergency scenarios Create coverage maps that identify areas with communication aps or weak signals <ul style="list-style-type: none"> Prioritize those areas for infrastructure improvements or satellite based-technology deployment 	Improve efficiency and speed of wildfire response and suppression Enhance emergency response communications and capabilities	Assess annual effectiveness Establish a feedback mechanism to gather input from department members	<ul style="list-style-type: none"> FEMA Building Resilient Infrastructure and Communities Grants (BRIC) California Fire Foundation Grant Program Action, Implementation, & Mitigation
FR #7		M	Ongoing	Plan and implement activities required to address SB552, particularly related to fire flows and water supply	Inyo County	Inyo County Drought Task Force	<ul style="list-style-type: none"> Conduct an assessment of water supply systems and infrastructure throughout the county to identify gaps or areas of improvement Ensure that the county complies with the provisions of SB552 Develop and distribute emergency water supply plans that outline procedures for accessing water during wildfire incidents Coordinate closely with fire departments to align fire flow needs with emergency response strategies 	Protect life and property through improved firefighting response Improve firefighter safety	Annual review of water supply	<ul style="list-style-type: none"> USFS CWDG Grants Wildfire Resilience Program CAL FIRE Grant Programs CalEPA Loans and Grants
FR #8		M	Summer 2025	Enhance wildfire alertness and response by expanding the coverage of Alert California live cameras	Inyo County	Alert California Core University Partners	<ul style="list-style-type: none"> Reach out and coordinate with Alert California Core University Partners to assess interest of expanding camera coverage where there are gaps and/or limited coverage Conduct an assessment of areas to determine high-risk areas with coverage gaps <ul style="list-style-type: none"> Evaluate locations that would be of strategic importance for early detection and situational awareness Consider areas that are known hotspots for fire starts Integrate effort with public outreach campaigns to encourage community members to monitor camera feeds for potential fire starts and early reporting 	Improve efficiency and speed of wildfire response and suppression Reduce wildfire threats to life and property	Annual review of effectiveness and assessment of camera locations	<ul style="list-style-type: none"> FEMA Assistance to Firefighters Grants FEMA Staffing for Adequate Fire and Emergency Response California Fire Foundation Grant Program

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FR #9		M	Spring 2026	Establish a Fuels management crew: create a dedicated crew trained in fuels management, defensible space inspections, and community engagement. The crew will conduct fuels reduction projects, collaborate with fire departments, and contribute to increased local capacity for wildfire prevention and firefighting	Inyo County	Inyo County, CAL FIRE, USFS, BLM, IMRCD, Cerro Coso	<ul style="list-style-type: none"> Investigate opportunities to create employment and expand the fire and fuels management workforce through the Community Economic Resilience Fund <ul style="list-style-type: none"> A fuels management crew could be utilized as a cross county (Inyo-Mono) resource to provide support during wildfire incident response, while simultaneously achieving significant progress in fuels management and defensible space inspections in the region Research providing job training through community college, CAL FIRE Fire Academy, internships, etc. Provide crew members with extensive training in fuels management, wildland fire, defensible space assessments, and wildfire prevention, ensuring they meet all relevant qualifications <ul style="list-style-type: none"> The crew may also be trained in post-fire projects (e.g., vegetation restoration and monitoring protocols for completed fuels reduction projects) Allocate the necessary resources, equipment, and funding to support the crew and their activities Collaborate with local fire departments to assist in firefighting efforts when necessary, adding to local firefighting capacity Seek a partnership with Mono County to tackle the initiative jointly Coordinate wildland fire training and qualification requirements with state and federal agencies 	Enhance public and firefighter safety and mitigate wildfire risk within the county	<p>Convene annually to assess and document the status of firefighting capabilities.</p> <p>Maintain list of trained personnel and volunteers that can be utilized across all field and incident command positions.</p>	<ul style="list-style-type: none"> Building Resilient Infrastructure and Communities (BRIC) Staffing for Adequate Fire and Emergency Response (SAFER) California Fire Safe Council Grants California Fire Foundation Grant Program Community Economic Resilience Fund Action, Implementation, & Mitigation
FR #10		H	Ongoing	Continue to support implementation of projects identified in the Independence and 40 Acres CWPPs	Independence and 40 Acres	Refer to the Independence and 40 Acres CWPPs	<ul style="list-style-type: none"> Refer to the Independence and 40 Acres CWPPs 	<p>Protect life and property through effective wildfire management.</p> <p>Establish cohesive planning approach regarding wildfire management.</p>	<p>Annual maintenance and updates to materials</p>	<ul style="list-style-type: none"> Community Planning Assistance for Wildfire (CPAW) BRIC FP&S Firewise grants National Urban and Community Forest Program California Fire Safe Council Grants Regional Forest and Fire Capacity Grant Program Landscape Scale Restoration Competitive Grant Program

Project ID	Status	Priority (H/M/L)	Target Date	Project Description	Location	Partners and/or Collaborating Agencies	Methods/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FR #11		M	Fall 2026	Centralize projects, priorities, and timelines from all relevant agencies into one comprehensive document	Inyo County	Inyo County OES, BLM, CAL FIRE, USFS, NPS, local fire jurisdictions	<ul style="list-style-type: none"> Identify all relevant projects related to wildfire protection and community safety from various agencies Engage and collaborate with relevant stakeholders to gather information on their projects, priorities, and timelines Compile all relevant projects into a single, comprehensive document, ensuring it is organized and easy to navigate Review the compiled document with stakeholders to ensure accuracy and completeness Establish a process for regular updates to the document to reflect changes or new projects 	Increase interagency collaboration and transparency Create opportunities for project synchronization	Regular updates	<ul style="list-style-type: none"> USFS CWDG California Fire Safe Council Grants California Fire Foundation Grant Program Inyo County general fund

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APPENDIX J:

Fuel Treatment Types and Methods

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FUELS TREATMENT SCALES AND METHODS

DEFENSIBLE SPACE

Defensible space is perhaps the fastest, most cost-effective, and most efficacious means of reducing the risk of loss of life and property. Although fire agencies can be valuable in providing guidance and assistance, creating defensible space is the responsibility of the individual homeowner (Figure J.1).

The definition of defensible space via state and local codes, its maintenance by property owners, and enforcement by fire agencies as needed is a common part of wildfire risk mitigation. The California State Board of Forestry issued General Guidelines for Creating Defensible Space in 2008, following a change in that expanded defensible space clearance requirements from 30 to 100 feet around buildings and structures within SRAs or very high FHSZs within LRAs. The PRC was amended in January 2021 to require an ember-resistant zone within 5 feet of the home/structure on or before January 1, 2023. This translates to having a clearance of 5 feet between the home/structure and any materials that would likely be ignited by embers (CAL FIRE 2022c).

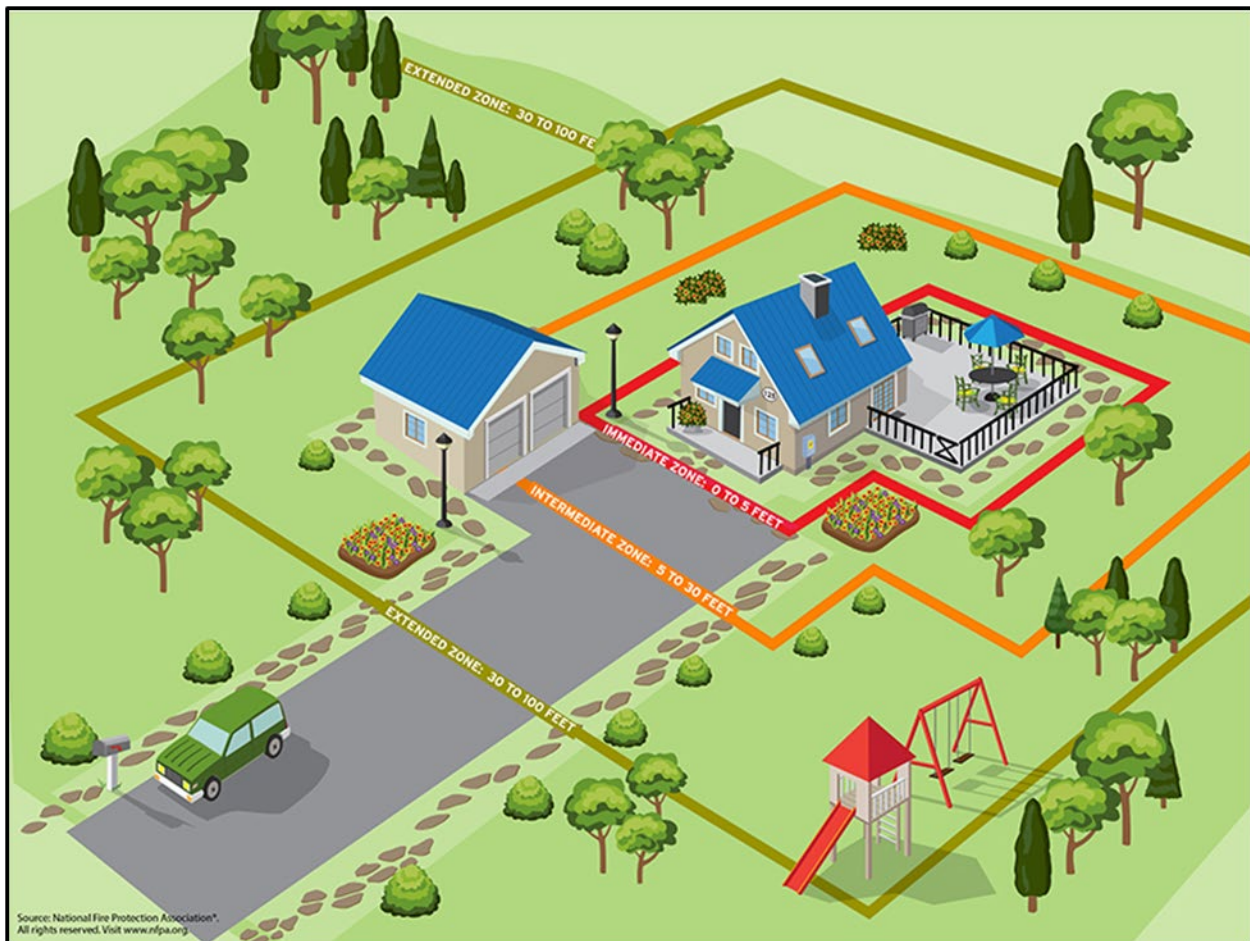


Figure J.1. Defensible space zones providing clearance between a structure and adjacent woodland or forest fuels.

Source: NFPA

Some aspects about WUI defensible space that are often overlooked include:

- The amount of defensible space needed may vary due to local conditions, such as slope, fuel density, building materials, or location.
- Fuel reduction has more to do with disrupting fuel continuity so that the spread of fire is impeded, rather than creating a denuded zone around a home. For example, pruning the lower limbs of trees creates a break between ground fuels and tree canopies, reducing the chances that a fire will move from a ground fire to a crown fire.
- Communities may wish to develop defensible space areas that are greater than 100 feet for even better protection; the code sets only a minimum distance. However, expanding treatments beyond property lines can only be done if allowed by state law, local ordinance, rule, or regulation.
- Defensible space also provides a safer environment within which firefighters can work. This environment is more than vegetation clearance; defensible space also involves emergency vehicle access, water supply, and clear street signs and addresses. All these factors, and many more as identified by previous community-level CWPPs, affect the usefulness of defensible space in structure protection.
- Vegetation fuel reduction projects require compliance with all federal, state, or local environmental protection laws.

Effective defensible space is an essentially fire-free zone adjacent to the home, a treated secondary zone that is thinned and cleaned of surface fuels, and (if the parcel is large enough) a transitional third zone that is basically a managed forest area (Figure J.2). These components work together in a proven and predictable manner. Zone 1 keeps fire from burning directly to the home; Zone 2 reduces the adjacent fire intensity and the likelihood of torching, crown fire, and ember production; and Zone 3 does the same at a broader scale, keeping the fire intensity lower by maintaining a more natural, historic condition (Figure J.2).

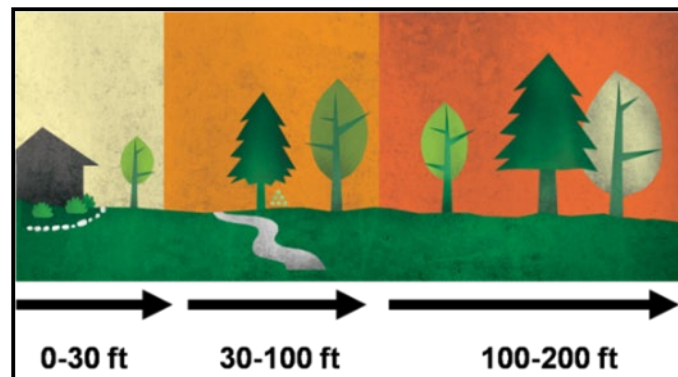


Figure J.2. Defensible space zones.

Source: Firewise.org

It should be emphasized that defensible space is just that—an area that allows firefighters to work effectively and with some degree of safety to defend structures. While defensible space may increase a home's chance of surviving a fire on its own, a structure's survival is not guaranteed, with or without firefighter protection. Nevertheless, when these principles are consistently applied across a neighborhood, everyone benefits. The three zones for defensible space actions are described below (CAL FIRE 2022c):

Zone 0 – Immediate Zone, Ember Resistant: This zone is not currently required by state law. However, as of January 1, 2023, Assembly Bill 3074 will require the Board of Forestry and Fire Protection to develop the regulation for Zone 0. While not yet required, Zone 0 has been proven to be the most important defensible space zone for protecting a home against wildfire. This zone consists of the immediate area around a home and is defined as 0 to 5 feet from the property structure, including areas under and around all structure attachments, such as sheds or decks. Zone 0 requires the most stringent wildfire fuel reduction methods as actions taken within this zone can directly influence whether a property ignites. Recommendations for treating Zone 0 include (CAL FIRE 2022c):

- Use non-combustible landscaping materials, such as gravel in place of mulch.
- Clear all dead and dying debris from around a structure, including branches, dead leaves, pinecones, pine needles, grasses, and shrubs. Remember to check areas where the debris can accumulate, such as gutters, stairways, porches, and roofs.
- Clear all branches or vegetation within 10 feet of any chimney or stovepipe outlet.
- To keep vegetation within the 5-foot buffer around a structure, make sure plants are thoroughly watered, and keep non-woody, low-growing plant species if possible.
- Limit the use of combustible materials, such as outdoor furniture, on decks or patios.
- Relocate firewood or lumber to Zone 2.
- Replace structures attached to a home, such as fencing or gates, with non-combustible materials.
- If possible, keep garbage receptacles outside of Zone 0.
- If possible, keep all vehicles, boats, ATVs, and any other machines outside of Zone 0.

Zone 1 – Intermediate Zone, Clean and Green: Zone 1 consists of the first 30 feet from structures, including home, decks, garages, etc. If a property line extends less than 30 feet, Zone 1 is the distance from structures to the property line. This zone features fuel reduction efforts and serves as a transitional area between Zones 0 and 2. Recommendations for treating Zone 1 include (CAL FIRE 2022c):

- Remove all dead and dying vegetation, including vegetation debris such as leaf litter. Be sure to check the roof and gutters as well.
- Maintain a minimum buffer of 10 feet between a chimney and any vegetation, including dead or overhanging branches. Be sure to remove all branches that hang over the roof.
- Maintain trees by trimming them regularly and keeping a minimum 10-foot buffer between tree canopies.
- Relocate fire or lumber to Zone 2.
- Trim or remove any flammable vegetation near windows.
- Remove any items or vegetation that could catch fire and ignite other property structures, such as vegetation under decks or stairs.
- Separate any items that could ignite, such as trees, shrubs, swing sets, patio furniture, etc.

Zone 2 – Extended Zone, Reduced Fuel: This zone encompasses an area 30 feet from a structure out to 100 feet, or the property line, whichever is closer. This zone addresses fuel reduction to prevent wildfires from spreading. Recommendations for treating Zone 2 include (CAL FIRE 2022c):

- Maintain all grasses to reach a maximum height of 4 inches.

- For shrubs or trees, maintain a distance between plants of at least two times a plant's size. Additional space between vegetation is needed for properties on slopes (Figure J.3).
 - Flat to mild slope (less than 20%): Minimum distance of 10 feet between trees and two times the size of other plants. Example: For shrubs 2 feet in diameter, at least 4 feet are needed between shrubs.
 - Mild to moderate slope (20%–40%): Minimum distance of 20 feet between trees and four times the size of other plants. Example: For shrubs 2 feet in diameter, at least 8 feet are needed between shrubs.
 - Moderate to steep slope (greater than 40%): Minimum distance of 30 feet between trees and six times the size of other plants. Example: For shrubs 2 feet in diameter, at least 12 feet are needed between shrubs.
- Create vertical space between vegetation by clearing all branches at least 6 feet from the ground for isolated trees, or for trees with nearby shrubs, clear at least 3 times the shrub height (Figure J.4).
 - Example: A 4-foot shrub is growing near a tree; a clearance of 12 feet (3×4) is needed between the top of the shrub and the lowest tree branch.
- Vegetation debris such as dead leaves, branches, twigs, pinecones, etc., may be allowed up to 3 inches in depth. However, it is best to remove vegetation debris.
- All wood or lumber piles must have a 10-foot buffer of bare mineral soil in all directions; no vegetation is allowed.

In addition to the recommendations listed above, CAL FIRE suggests maintaining a clearance zone of 10 feet around any outbuildings or liquid propane gas storage tanks, and an additional 10-foot clearance zone with no flammable vegetation (CAL FIRE 2022c).

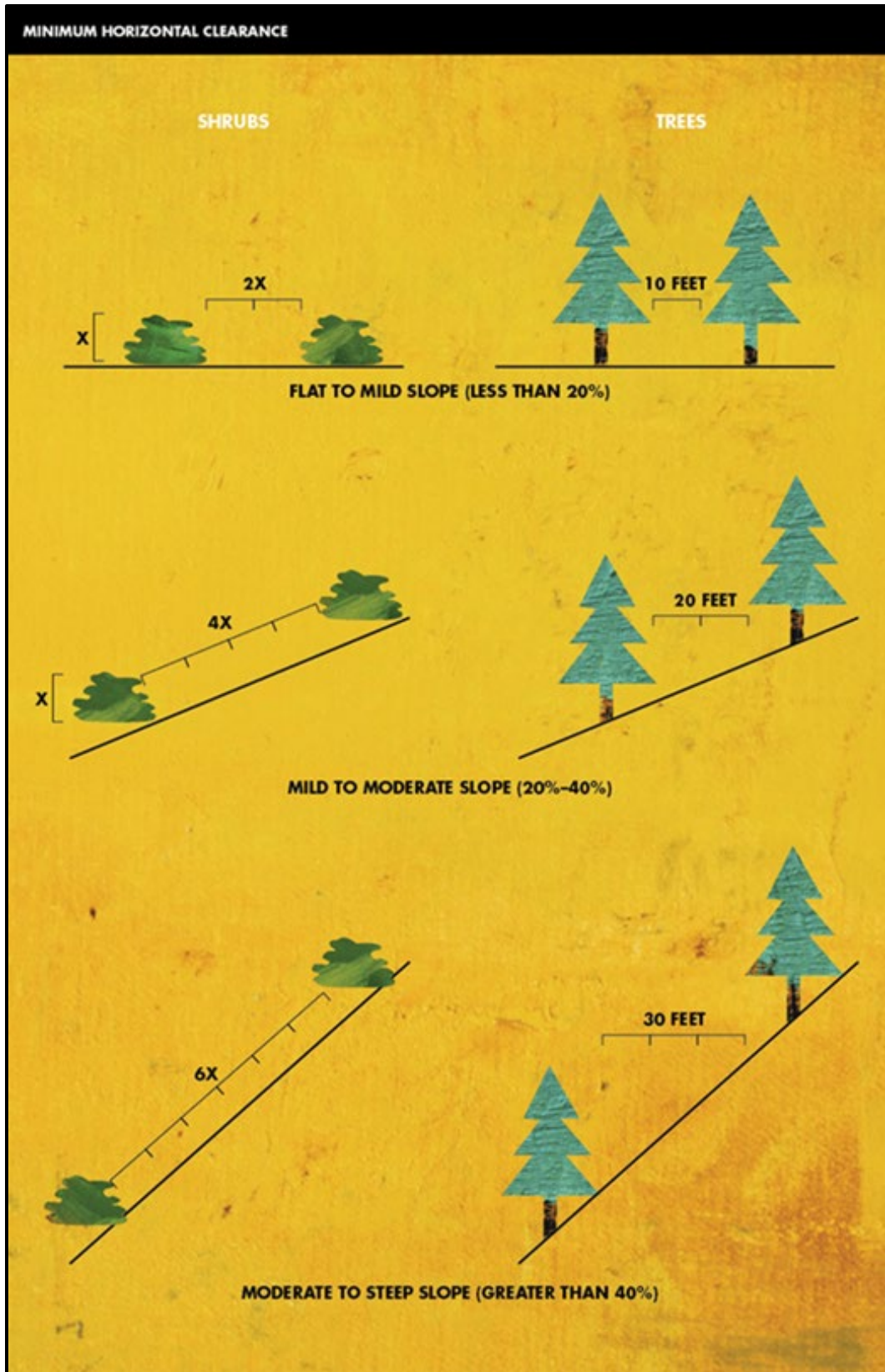


Figure J.3. Minimum horizontal clearance.

Source: CAL FIRE 2022c



Figure J.4. Minimum vertical clearance.

Source: CAL FIRE 2022c

Specific recommendations should be based on the hazards adjacent to a structure such as slope steepness and fuel type. Firewise guidelines and the Homeowner Resources appendix (see Appendix G) are excellent resources but creating defensible space does not have to be an overwhelming process. The NFPA offers a free [Community Wildfire Risk Assessment Tutorial](#) and an online learning module: [Understanding the Wildfire Threat to Homes](#). Both tools are great resources for learning about, and implementing, defensible space.

Assisting neighbors may be essential in many cases. Property owners should consider assisting the elderly, sharing ladders for gutter cleaning, and assisting neighbors with large thinning needs. Homeowner actions have been found to also motivate neighbors to act, increasing the scope of wildfire mitigation across a community (Evans et al. 2015). Adopting a phased approach can make the process more manageable and encourage maintenance (Table J.1).

Table J.1. Example of a Phased Approach to Mitigating Home Ignitability

Year	Project	Actions
1	Basic yard cleanup (annual)	Dispose of clutter in the yard and under porches. Remove dead branches from yard. Mow and rake. Clean off roofs and gutters. Remove combustible vegetation near structures. Coordinate disposal as a neighborhood or community. Post 6-inch reflective address numbers visible from road.

Year	Project	Actions
2	Understory thinning near structures	Repeat basic yard cleanup. Limb trees up to 6–10 feet. Trim branches back 15 feet from chimneys. Trim or cut down brush. Remove young trees that can carry fire into forest canopy. Coordinate disposal as a neighborhood or community.
3	Understory thinning on private property along roads and drainages	Limb trees up to 6–10 feet. Trim or cut down brush. Remove young trees that can carry fire into forest canopy. Coordinate disposal as a neighborhood or community.
4	Overstory treatments on private property	Evaluate the need to thin mature or diseased trees. Prioritize and coordinate tree removal within neighborhoods to increase cost effectiveness.
5	Restart defensible space treatment cycle	Continue the annual basic yard cleanup. Evaluate need to revisit past efforts or catch those that were bypassed.

FUEL BREAKS AND OPEN SPACE CLEANUP

The next location priority for fuels treatments should be where the community meets wildland. This may be the outer margins of a town or an area adjacent to occluded open spaces such as a park. Fuel breaks (also known as shaded fuel breaks) are strips of land where fuel (for example, living trees and brush, dead branches, leaves, or downed logs) has been modified or reduced to limit the fire’s ability to spread rapidly. Fuel breaks should not be confused with firebreaks, which are areas where vegetation and organic matter are removed down to mineral soil. Also, firebreaks are typically used after the fire (for suppression purposes) and fuel breaks are usually installed before fires occur (to reduce extreme fire behavior). Shaded fuel breaks may be created to provide options for suppression resources or to provide opportunities to introduce prescribed fire. In many cases, shaded fuel breaks may be created by thinning along roads. This provides access for mitigation resources and firefighters, as well as enhancing the safety of evacuation routes.

LARGER SCALE TREATMENTS

Farther away from WUI communities, the emphasis of treatments often becomes broader. While reducing the buildup of hazardous fuels remains important, other objectives are often included, such as forest health and resiliency to catastrophic wildfire and climate change considerations. Wildfires frequently burn across jurisdictional boundaries, sometimes on landscape scales. As such, these larger treatments need to be coordinated on a strategic level. This requires coordination between projects and jurisdictions, as is currently occurring.

ACTION ITEMS FOR PROPERTY OWNERS TO REDUCE STRUCTURAL IGNITABILITY

Low or No Cost Investment (<\$50)

Regularly check fire extinguishers and have a 100-foot hose available to wet perimeter.

Maintain defensible space for 30 feet around home. Work with neighbors to provide adequate fuels mitigation in the event of overlapping property boundaries.

Install an environmentally appropriate xeriscape yard instead of grass

Screen vents with non-combustible meshing with mesh opening not to exceed nominal 1/8-1/16-inch size.

Ensure that house numbers are easily viewed from the street.

Keep wooden fence perimeters free of dry leaves and combustible materials. If possible, non-combustible material should link the house and the fence.

Keep gutters free of vegetative litter. Gutters can act as collecting points for fire brands and ashes.

Store combustible materials (firewood, propane tanks, grills) away from the house; in shed, if available.

Clear out materials from under decks and/or stacked against the structure. Stack firewood at least 30 feet from the home, if possible.

Reduce your workload by considering local weather patterns. Because prevailing winds in the area are often from the west-southwest, consider mitigating hazards on the west corner of your property first, then work around to cover the entire area.

Seal up any gaps in roofing material and enclose gaps that could allow fire brands to enter under the roof tiles or shingles.

Remove flammable materials from around propane tanks.

Minimal Investment (<\$250)

When landscaping in the home ignition zone (HIZ) (approximately 30 feet around the property), select non-combustible plants, lawn furniture, and landscaping material. Combustible plant material like junipers and ornamental conifers should be pruned and kept away from siding. If possible, trees should be planted in islands and no closer than 10 feet to the house. Tree crowns should have a spacing of at least 18 feet when within the HIZ. Vegetation at the greatest distance from the structure and closest to wildland fuels should be carefully trimmed and pruned to reduce ladder fuels, and density should be reduced with approximately 6-foot spacing between trees crowns.

Box in eaves, attic ventilation, and crawl spaces with non-combustible material.

Work on mitigating hazards on adjoining structures. Sheds, garages, barns, etc., can act as ignition points to your home.

Enclose open space underneath permanently located manufactured homes using non-combustible skirting.

Clear and thin vegetation along driveways and access roads so they can act as a safe evacuation route and allow emergency responders to access the home.

Purchase or use a National Oceanic and Atmospheric Administration weather alert radio to hear fire weather announcements.

Moderate to High Investment (>\$250)

Construct a non-combustible wall or barrier between your property and wildland fuels. This could be particularly effective at mitigating the effect of radiant heat and fire spread where 30 feet of defensible space is not available around the structure.

Construct or retrofit overhanging projections with heavy timber that is less combustible.

Replace exterior windows and skylights with tempered glass or multilayered glazed panels.

Invest in updating your roof to non-combustible construction. Look for materials that have been treated and given a fire-resistant roof classification of Class A. Wood materials are highly combustible unless they have gone through a pressure-impregnation fire-retardant process.

Construct a gravel turnaround in your driveway to improve access and mobilization of fire responders.

Treat construction materials with fire-retardant chemicals.

Install a roof irrigation system.

Replace wood or vinyl siding with nonflammable materials.

Relocate propane tanks underground.

Additional resources regarding home hardening can be found in Appendix G.

FUEL TREATMENT METHODS

Since specifics of the treatments are not provided in detail in Table J.2, different fuels reduction methods are outlined in the following narrative.

Several treatment methods are commonly used for hazardous fuels reduction, including manual treatments, mechanized treatments, prescribed fire, and grazing (Table J.2). This brief synopsis of treatment options is provided for general knowledge; specific projects will require further planning. The appropriate treatment method and cost will vary depending on factors such as the following:

- Diameter of materials
- Proximity to structures
- Acreage of project
- Fuel costs
- Steepness of slope
- Area accessibility
- Density and type of fuels
- Project objectives

It is imperative that long-term monitoring and maintenance of all treatments is implemented. Post-treatment rehabilitation such as seeding with native plants and erosion control may be necessary. In addition, post-treatment fuel clean-up is a must as neglected piles of vegetation may result in increased fire risk.

Table J.2. Summary of Fuels Treatment Methods

Treatment	Comments
Machine mowing	Appropriate for large, flat, grassy areas on relatively flat terrain.
Manual treatment with chipping or pile burning	Requires chipping, hauling, and pile burning of slash in cases where lop and scatter is inappropriate. Pile burning must comply with smoke management policy.
Brush mastication	Brush species tend to re-sprout vigorously after mechanical treatment. Frequent maintenance of treatments is typically necessary. Mastication tends to be less expensive than manual (chainsaw) treatment and eliminates disposal issues.
Timber mastication	Materials up to 10 inches in diameter and slopes up to 30% can be treated. Eliminates disposal issues. Environmental impact of residue being left on-site is still being studied.
Prescribed fire	Can be very cost effective for public land but not close to the city. Ecologically beneficial. Can be used as training opportunities for firefighters. May require manual or mechanical pretreatment. Carries risk of escape. Unreliable scheduling due to weather and smoke management constraints.
Feller buncher	Mechanical treatment on slopes more than 30% or of materials more than 10 inches in diameter may require a feller buncher rather than a masticator. Costs tend to be considerably higher than masticator.

Treatment	Comments
Grazing (goats)	Can be cost effective. Ecologically beneficial. Can be applied on steep slopes and shrubby and flashy fuels. Requires close management.

MANUAL TREATMENT

Manual treatment refers to crew-implemented cutting with chainsaws. Although it can be more expensive than mechanized treatment, crews can access many areas that are too steep or otherwise inaccessible with machines. Treatments can often be implemented with more precision than prescribed fire or mechanized methods allow. Merchantable materials and firewood can be removed while non-merchantable materials are often lopped and scattered, chipped, or piled and burned on-site. Care should be exercised to not increase the fire hazard by failing to remove or treat discarded material in a site-appropriate manner.

Strategic timing and placement of fuels treatments is critical for effective fuels management practices and should be prescribed based on the conditions of each treatment area. Some examples of this would be to place fuel breaks in areas where the fuels are heavier and in the path of prevailing winds and to mow grasses just before they cure and become flammable. Also, fuel reductions on slopes/ridgelines extending from the WUI to enhance community protection. In areas where the vegetation is sparse and not continuous, fuels treatments may not be necessary to create a defensible area where firefighters can work. In this situation, where the amount of fuel to carry a fire is minimal, it is best to leave the site in its current condition to avoid the introduction of nonnative species.

MECHANIZED TREATMENTS

Mechanized treatments include mowing, mastication (ground-up timber), and whole tree felling. These treatments allow for more precision than prescribed fire and are often more cost-effective than manual treatment.

Mowing, including ATV and tractor-pulled mower decks, can effectively reduce grass fuels adjacent to structures and along highway rights-of-way and fence lines. For heavier fuels, several different masticating machines can be used, including drum- or blade-type masticating heads mounted on machines and ranging in size from a small skid-steer to large front-end loaders. Some masticators can grind standing timber up to 10 inches in diameter. Other masticators are more effective for use in brush or surface fuels. Mowing and mastication do not actually reduce the amount of on-site biomass but alter the fuel arrangement to a less combustible profile.

In existing fuel break areas maintenance is crucial especially in areas of encroaching shrubs or trees. In extreme risk areas more intensive fuels treatments may be necessary to keep the fire on the ground surface and reduce flame lengths. Within the fuel break, shrubs should be removed, and the branches of trees should be pruned from the ground surface to a height of 4 to 8 feet, depending on the height of the fuel below the canopy, and thinned with a spacing of at least two to three times the height of the trees to avoid movement of an active fire into the canopy.

Mechanical shears mounted on feller bunchers are used for whole tree removal. The stems are typically hauled off-site for utilization while the limbs are discarded. The discarded material may be masticated, chipped, or burned to reduce the wildfire hazard and to speed the recycling of nutrients.

TARGETED GRAZING

Fuel modifications targeted toward decreasing both vertical and horizontal continuity in fuels is critical as a prevention method against fire proliferation. The primary objectives for these modifications are treating surface fuels and producing low-density and vertically disconnected stands. Goat grazing is an effective, nontoxic, nonpolluting, and practically carbon-neutral vegetation treatment method. A goat grazing system typically consists of a high density of goats enclosed by a metallic or electrified fence guided by herders. Goats feed on a variety of foliage and twigs from herbaceous vegetation and woody plants (Lovreglio et al. 2014).

PRESCRIBED BURNING

Prescribed burning is also a useful tool to reduce the threat of extreme fire behavior by removing excessive standing plant material, litter, and woody debris while limiting the encroachment of shrubby vegetation. Where possible, prescribed fire could occur on public land since fire is ecologically beneficial to this fire-adapted vegetation community and wildlife habitat. CAL FIRE, USFS, and BLM are already implementing prescribed burning in the region.

All prescribed fire operations will be conducted in accordance with federal and state guidelines, laws, and regulations. Public safety would be the primary consideration in the design of any prescribed burn plan to not negatively impact the WUI. Agency use of prescribed fire on public land would be carried out within the confines of the agency's fire management planning documents and would require individual prescribed burn plans that are developed for specific burn units and consider smoke management concerns and sensitive receptors within the WUI. Smoke monitors could be placed in areas where smoke concerns have been raised in the past.

Following any type of fuels reduction treatment, post-treatment monitoring should continue to ensure that management actions continue to be effective throughout the fire season. The vegetation within this ecosystem can change rapidly in response to drought or moisture from year to year and during the season, so fuels treatments should be adjusted accordingly. To learn more about firing techniques, visit the EFIRE Fire Techniques webpage: <https://efire.cnr.ncsu.edu/efire/fire-techniques/>.

Several burns may be needed to meet full resource management objectives, so a solid maintenance plan is needed to ensure success.

Cultural Burning

Note: this section is a general overview of cultural burning in the Pacific West and doesn't explicitly apply to tribal lands of Inyo County.

Within the Pacific West, fire has historically been a means forest management and restoration by Indigenous communities (Long et al. 2021). Cultural burning has been defined as the "purposeful use of fire by a cultural group (e.g., family unit, Tribe, clan/moiety, society) for a variety of purposes and outcomes," and is included under the terms Indigenous fire management, Indigenous burning, and Indigenous stewardship (Long et al. 2021).

Rather than focusing solely on fuel reduction, as a means of wildfire mitigation, cultural burning is done with a more holistic view, under the philosophy of “reciprocal restoration,” meaning, as stewardship responsibilities to the land are fulfilled, those actions will in turn benefit the peoples who depend on those ecosystems (Long et al. 2021). Cultural burning is typically performed with a variety of objectives, such as landscape management, ecosystem and species biodiversity and health, transmission of environmental and cultural knowledge, ceremonies and spiritual wellbeing, a sense of place, and material services (i.e., food, medicine, plant materials, etc.). Extensive site preparation is typically done before a burn, and post-burn monitoring and additional cultural practices are a common factor of the land stewardship tradition (Long et al. 2021).

Impacts of Prescribed Fire on Communities

Prescribed fires can have impacts on air quality that may impact local communities. Impacts on a regional scale are typically only acute when many acres are burned on the same day. Local problems are occasionally acute due to the large quantities of smoke that can be produced in each area during a short period of time. Residents with respiratory problems may be impacted during these burning periods since smoke consists of small particles of ash, partly consumed fuel, and liquid droplets that are considered air pollutants. Other combustion products include invisible gases such as carbon monoxide, carbon dioxide, hydrocarbons, and small quantities of nitrogen oxides. Oxides of nitrogen are usually produced at temperatures only reached in piled or windrowed slash or in very intense wildfires that are uncommon in the region. In general, prescribed fires produce inconsequential amounts of these gases. Inappropriate management of prescribed fires can be bothersome to residents, and it can negatively affect community health.

Smoke from burning vegetation produces air pollutants that are regulated by both the EPA and the State of California (EPA 2019). Additionally, smoke can increase ambient air pollution levels to a point where it exceeds air quality standards (California Air Resources Board 2003). Therefore, effective smoke management is a vital component of planning and conducting prescribed fires (Figure J.5). The California Air Resources Board has smoke management guidelines that protect the health and welfare of Californians from the impacts of smoke (California Air Resources Board 2001). In Inyo County, a permit from the local fire agency must be obtained to start a prescribed burn and can only do so during “permissive burn days,” which are determined by the State Air Resources Board or the local air district (Great Basin Unified Air Pollution Control District 2023).

In addition, the NWCG released the NWCG Smoke Management Guide for Prescribed Fire in 2020 (NWCG 2020). This plan is designed to act as a guide to all those who use prescribed fire. Smoke management techniques, air quality regulations, public perception of prescribed fire, foundational science behind prescribed fire, modeling, smoke tools, air quality impacts, and more are all discussed in this plan. The document is meant to pair with NWCG’s Interagency Prescribed Fire Planning and Implementation Procedures Guide for planning and addressing smoke when prescribed fire is used (NWCG 2020). To view the plan, please visit: <https://www.nwcg.gov/sites/default/files/publications/pms420-3.pdf>.

Effects of smoke can be managed by burning on days when smoke will blow away from smoke-sensitive areas. Precautions are taken when burning near populated areas, highways, airports, and other smoke sensitive areas. Any smoke impact downwind is considered before lighting a fire. Smoke management is a significant component of all prescribed burn plans. Other mitigating actions include alerting the public of upcoming burning activities, including the purpose, best conditions for ensuring good smoke dispersal, duration, size, and location of projects. Local radio, newspapers, social media, and TV can provide broad coverage for alerts. Land management agencies in the county consistently work with concerned citizens

regarding smoke management and attempt to provide solutions such as the placement of smoke monitors at sensitive sites.



Figure J.5. Photograph showing the “Artesian Burn,” a controlled burn by CAL FIRE northeast of Independence.

Source: Bill Michael, President, Independence Fire Safe Council.

Combining thinning and prescribed fire can be the most effective treatment (Graham et al. 2004). In forests where fire exclusion or disease has created a buildup of hazardous fuels, prescribed fire cannot be safely applied, and pre-burn thinning is required. The subsequent use of fire can further reduce residual fuels and reintroduce this ecologically imperative process.

MANAGEMENT OF NONNATIVE PLANTS

Fuel treatment approaches should always consider the potential for introduction or proliferation of invasive nonnative species as a result of management actions. The USDA maintains a list of introduced, invasive, and noxious plants by state (USDA 2023b). The CDFA also maintains a list of plant species that are considered noxious and therefore actionable at the county level. The California Invasive Plant Council (Cal-IPC) provides on its website an inventory of nonnative plant species that threaten California’s wildlands.

For more info on Cal-IPC’s and CDFA’s invasive plant lists, please visit the following links:

Cal-IPC: <https://www.cal-ipc.org/plants/profiles/>

CDFA: <https://www.cdfa.ca.gov/plant/ipc/encycloweedia/pdf/CaliforniaNoxiousWeeds.pdf>

SWCA

APPENDIX K:

Post-Fire Response and Restoration

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POST-FIRE RESPONSE AND REHABILITATION

Large and high-severity wildfires can strip terrain of stabilizing vegetative cover, decreasing the water-retention capacity of hillsides and increasing the probability of debris flows during large, high-intensity runoff events. Debris flows can be landscape-altering occurrences that degrade and further destabilize habitat during critical post-fire recovery periods while also posing threats to life and property. In southern California, post-fire debris flows have been extensively documented, and in 2008, 1 year after the Inyo Complex Fires, massive debris flows developed just northwest of Independence in the North and South Fork Oak Creek drainages of the burn scar. The flows, triggered during a heavy rain event (up to 3.8 inches/hour) associated with the remnants of Hurricane Bertha moving inland from the Gulf of Mexico, ran nearly 4.5 miles onto the floor of the Owens Valley. Boulders up to approximately 57,000 pounds, large trees, and sediment up to 10 feet deep in spots (Figure K.1) were deposited throughout the drainages and their alluvial fans, reportedly destroying 25 homes, damaging a considerable portion of the Mount Whitney Fish Hatchery facilities (Figure K.2), and causing millions of dollars of damage (Wagner et al. 2012).

In the summer of 2023, Hurricane Hillary caused rainfall of about 5 inches in 12 hours, giving way to widespread flooding, mud, and debris flows. These record conditions led to severe damage on 24 county roads, with 22 experiencing extended closures due to issues like undercutting, rockslides, and washouts. Major highways such as State Route 190 in and out of Death Valley National Park and State Route 136 outside of Olancho sustained heavy damage, causing closures. The storm also destroyed or damaged LADWP diversion and flow measurement structures in the area (Inyo County 2023). When drafting this CWPP, a full damage assessment has not been completed. While events of this scale have been relatively rare since Inyo County has been permanently inhabited, they have occurred repeatedly over geologic history, as evidenced by large alluvial fans throughout the Owens Valley and are almost certain to occur again in the future. Although these debris flows were not due to wildfires, the topography and climate of the region make many areas of the county that have very little vegetation susceptible to mud and debris flows. Thus, severe fires that significantly reduce vegetation can lead to similar impacts during hurricanes or heavy rainfall events.



Figure K.1. Heavy sediment was deposited throughout the North and South Oak Creek alluvial fans just northwest of Independence during a large debris flow event in July 2008.

Source: Rick Kattelmann, The Whitebark Institute.



Figure K.2. The 2008 debris flow caused extensive damage, including to the Mount Whitney Fish Hatchery, pictured here.

Source: USFS

There are many facets to post-fire recovery, including but not limited to:

- Ensuring public health and safety—prompt removal of downed and hazard trees, addressing watershed damage, and mitigating potential flooding.
- Rebuilding communities and assessing economic needs—securing the financial resources necessary for communities to rebuild homes, business, and infrastructure.
- Restoring the damaged landscape—restoration of watersheds, soil stabilization, and tree planting.
- Reducing fire risk in the future—identifying hazard areas and implementing mitigation.
- Prioritizing the needs of vulnerable and disadvantaged communities during response and disaster recovery efforts.
- Reducing post-fire recovery time by replanting native species.
- Ensuring fire protection measures enhance sustainability of restoration projects e.g., introducing prescribed fire to a fire-dependent ecosystem where fire had previously been excluded.
- Retaining downed logs for erosion control and habitat maintenance.
- Evaluating and updating disaster recovery plans every 5 years to respond to changing needs and characteristics of the community.
- Coordinating with planning, housing, health and human services, and other local, regional or state agencies to develop contingency plans for meeting short-term, temporary housing needs of those displaced during a catastrophic wildfire event.
- Incorporating forecasted impacts from climate change into trends and projections of future risk and consideration of policies to address identified risk.
- Updating codes and ordinances to specify procedures and standards for planning and permitting the reconstruction of buildings destroyed by wildfire.

COMMUNITY RESPONSE AND RECOVERY

Recovery of the vegetated landscape is often more straightforward than recovery of the human environment. Assessments of the burned landscape are often well coordinated through interagency crews who are mobilized immediately after a fire to assess the post-fire environment and make recommendations for rehabilitation efforts.

For the community impacted by fire, however, there is often very little planning at the local level to guide their return after the fire. Residents impacted by the fire need assistance making insurance claims; finding temporary accommodation for themselves, pets, and livestock; rebuilding or repairing damaged property; removing debris and burned trees; stabilizing the land for construction; mitigating potential flood damage; repairing infrastructure; reconnecting to utilities; and mitigating impacts to health. Oftentimes, physical impacts can be mitigated over time, but emotional impacts of the loss and change to surroundings are long-lasting and require support and compassion from the community.

After the Fire

Rebuilding and recovery from wildfire can vary greatly across income levels and demographics. Rural areas, low-income neighborhoods, and immigrant communities generally do not have the necessary resources to cover insurance and rebuilding expenses that occur after a fire. Due to this, many of these areas take more time to recover than those with greater access to resources. In addition, the occurrence of wildfire can worsen existing mental health conditions and lead to post-traumatic stress (PTS), low self-esteem, and depression for at-risk populations (CA GOPR 2022).

Returning Home

First and foremost, follow the advice and recommendations of emergency management agencies, fire departments, utility companies, and local aid organizations regarding activities following the wildfire. Do not attempt to return to your home until fire personnel have deemed it safe to do so.

When driving, watch for trees, brush, and rock which may have been weakened or loosened by the fire. Be aware of any damage or debris on roads and driveways. Traffic may be delayed, or lanes closed due to firefighter operations. Use extreme caution around trees, power poles, and any other tall objects that may have been weakened by the fire (CAL FIRE 2020b).

Even if the fire did not damage your house, do not expect to return to normal routines immediately. Expect that utility infrastructure may have been damaged and repairs may be necessary. When you return home, check for hazards, such as gas or water leaks and electrical shorts. Turn off damaged utilities if you did not do so previously. Request that the fire department or utility companies turn the utilities back on once the area is secured. Similarly, water supply systems may have been damaged; do not drink from the tap until you have been advised that it is safe to do so. Finally, keep a “fire watch”; look for smoke or sparks in houses and other buildings. Once at home, check for the following (CAL FIRE 2019b):

- Check the roof and exterior areas for sparks or embers
- Check grounds for hot spots, smoldering stumps, and vegetation
- Check for fire damage to your home, turn off all appliances and make sure the meter is not damaged before turning on the main circuit breaker
- Check the attic and throughout your house for any hidden burning sparks or embers
- Do not drink water from the faucet until emergency officials say it is okay, water supply systems can be damaged and become polluted during wildfires
- Discard any food that has been exposed to heat, smoke, flood water, or soot
- If you have a propane tank or natural gas, leave valves closed until the supplier or utilities can inspect your system
- If you have a solar electrical system, this system should be inspected by a licensed technician to verify that the solar panels and electrical wiring are safe for continued operation
- Consult local experts on the best way to restore and plant your land with fire-safe landscaping
- Contact 911 if any danger is perceived

- Ash contains toxic substances and may be irritating to the eyes, nose, throat, and skin. Ash is harmful to breathe and may trigger asthma attacks. Follow these tips to reduce your exposure to ash (California Department of Public Health 2017):
- Do not allow children to play in the ash and wash off children’s toys before children play with them.
- Immediately wash any part of your body that touches ash to avoid irritation.
- Wash fruits and vegetables from your garden thoroughly before eating them.
- Keep pets out of ash areas.
- Frequently clean indoor surfaces by wet mopping.
- Wear protective clothing and a respirator when working outside.

Insurance Claims

Your insurance agent is the best source of information for submitting a claim. It is recommended you take photos of your home, of both the inside and outside, in preparation of an emergency. Keep the photos in a safe place as this will make the insurance claim process easier. Most expenses incurred during the time you are forced to live elsewhere may be reimbursed, so be sure to keep all receipts. Additional items that may be covered are extra transportation costs to and from work or school, telephone installation, furniture rental, extra food costs, and water damage. Do not start any repairs without the approval of your claims adjuster (CDI 2021).

Natural disasters aren’t always predictable, but there are steps property owners can make to better prepare for an emergency.

- Review your insurance policy annually to see if your home is adequately insured
- Know your “loss of use” section – this covers living expenses should your home become unlivable due to fire, smoke, or otherwise

You can view a guide on creating a home inventory here: <https://www.iii.org/article/how-create-home-inventory>

Community Safety: Post-Fire Floods and Debris Flows

There are numerous natural hazards after a wildfire. Perhaps the most dangerous are potential flash floods, debris flows, and landslides following rainfall in a burned area upstream of a community. Wildfires increase the risk of flooding because burned soil cannot absorb rainfall and becomes hydrophobic. Factors that contribute to flooding and debris flows are steep slopes, heavy rainfall, weak or loose rock and soil, lack of canopy and ground cover, and improper construction and grading. Even small rainfall can cause a flash flood, transporting debris and damaging homes and other structures. Listen and look for emergency updates, weather reports, and flash flood warnings (California Department of Conservation 2019). Develop an evacuation plan with your family and stay away from waterways, storm channels, and arroyos. Be aware of your risk, pay attention to weather forecasts, listen to local authorities, and have a household inventory with copies of critical documents (California Department of Water Resources 2021).

Mobilizing Your Community

Wildfires that produce extensive damage require a community-scale response for recovery efforts. The local Emergency Manager will collaborate with state and federal partners to manage disaster response and urgent needs. Still, mobilizing a response and recovery team or a group of teams in a community can function as a vital part of the recovery procedure. Coordinated and informed direction throughout community-level volunteers and all levels of government are necessary for successful recovery (California Silver Jackets Team [California SJT] 2019).

As opposed to wildfire response, post-fire response is not typically managed by a unified state or federal team. Rather, each organization and each tier of government acts on its own authority. This produces a greater demand for coordination at the local level and the sharing of information between organizations to coordinate recovery efforts (California SJT 2019).

Residents throughout California are encouraged to join forces to create local fire safe councils to minimize and prevent wildfire losses. Fire safe councils are community-based organizations that mobilize residents to protect their properties, communities, and environments from disastrous wildfires. Fire safe councils educate property owners about community wildfire preparedness activities while collaborating with local fire officials to plan and implement projects that increase the wildfire resilience of their communities (California Fire Safe Council 2021).

In addition, each community is encouraged to create its own type of Post-Fire Coordination Group (PFCG) to direct the response to any ensuing post-wildfire natural hazards and aid in determining post-fire mitigation actions. The PFCG should work directly with local, state, or federal agencies, emergency response officials, and others to aid in a coordinated response. Primary duties of the PFCG include coordinating the exchange of information among agencies and the risk assessment, assembling and exchanging geospatial data, assisting public communications, and coordinating with elected officials (California SJT 2019).

Communities are also encouraged to establish a post-fire coordinator. The post-fire coordinator is appointed by the community to assist in a coordinated response to a wildfire and to aid the community's post-fire recovery efforts. The post-fire coordinator is likely to collaborate with local, state, and federal organizations that participate in emergency response and post-fire recovery efforts. It is important that the post-fire coordinator have demonstrated management, internet, and social media skills, community knowledge, and experience with government agencies and programs (California SJT 2019).

The recovery coordinator should become familiar with representatives from local, state, and government agencies that will be helping with coordination or funding of post-fire recovery. The following resources may be helpful for the post-fire and volunteer coordinators (California SJT 2019):

1. Housing
 - FEMA
 - Federal Housing Administration
 - California Department of Housing and Community Development
 - The Salvation Army
2. Debris Removal
 - California Department of Resources Recycling and Recovery
 - USACE

3. Debris Modeling
 - USGS
4. Hazardous Waste and Pollution
 - CalEPA
5. Pets and Livestock
 - American Society for the Prevention of Cruelty to Animals
 - CDFA
6. Food
 - USDA Supplemental Nutrition Assistance Program
 - California Department of Social Services, Disaster CalFresh
7. Social Services
 - California Employment Development Department
 - FEMA Disaster Unemployment Assistance
 - U.S. Administration for Children and Families
 - Office of Access and Functional Needs
 - California Foundation for Independent Living Centers
8. Farm Rehabilitation
 - Farm Service Agency
 - USDA Rural Development Disaster Assistance
 - NRCS General Environmental Quality Incentives Program Financial Assistance
9. General
 - The American Red Cross
 - NRCS – Emergency Watershed Protection Program (EWP)
 - California Governor’s Office of Emergency Services
 - USFS
 - NPS
 - CAL FIRE
 - Bureau of Indian Affairs

Any large wildfire will also involve an Incident Command System (ICS), an appropriately sized team assigned to aid in post-fire recovery. Learn more are <https://www.nps.gov/articles/wildland-fire-incident-command-system-levels.htm>.

Communication

After a team is assembled and immediate tasks are identified, find the best way to spread information in your community. You may distribute flyers, set up a voicemail box, work to find pets or livestock that have been displaced, develop a mailing list for property owners, hold regular public meetings, etc. It is important that a long-term communications plan is developed (California SJT 2019). Applying the following steps can aid in successful communication (California SJT 2019):

- Convey post-wildfire hazards to the public.
- Develop and maintain emergency notification systems that allow authorized officials to alert residents of emergency situations.
- Public meetings to inform the public about programs and services available in the community.
- Determine the best way to relay information, e.g., phone calls, radio, TV, or social media.
- Find out how emergency response teams, local officials, and volunteers will communicate with the community.

Post-Fire Emergency Stabilization, Rehabilitation, and Resources

There are three phases of rehabilitation following wildfires on federal lands:

- Fire suppression damage repair
- Emergency stabilization – Burned Area Emergency Response (BAER)
- Long-term recovery and restoration

Wildfires that cause extensive damage necessitate dedicated efforts to avert issues afterwards. As aforementioned, loss of vegetation increases soil susceptibility to erosion; water runoff may increase and lead to flooding; sediments and debris may be transported downstream and damage properties or saturate reservoirs putting endangered species and water reserves at risk. Following a fire, the primary priorities are repairing damage caused by putting out the fire and emergency stabilization to prevent additional damage to life, property, or natural resources. The soil stabilization work starts immediately and may proceed for up to a year. The rehabilitation effort to restore damage caused by the fire starts after the fire is out and may persist for various years. For the most part, rehabilitation efforts focus on the lands not likely to recover naturally from wildfire damage (USFS 2021d).

Fire suppression damage repair is a series of immediate post-fire actions taken to repair damages and minimize potential soil erosion and impacts resulting from fire suppression activities and usually begins before the fire is contained, and before the demobilization of an Incident Management Team (IMT). This work repairs the hand and dozer lines, roads, trails, staging areas, safety zones, and drop points used during fire suppression efforts.

The USFS post-fire emergency stabilization program is called the Burned Area Emergency Response (BAER) program, and the Department of Interior (DOI) emergency post-fire program is called Emergency Stabilization (ES). The goal of these programs is to discover post-wildfire threats to human life and safety, property, and critical natural or cultural resources on USFS, DOI, and Tribal trust lands and take appropriate actions to mitigate unacceptable risks (NIFC 2022b). BAER teams are composed of trained professionals in different fields: soil scientists, engineers, hydrologists, biologists, botanists, archaeologists, and others who quickly assess the burned area and advise emergency stabilization treatments (NIFC 2022b).

The NRCS Emergency Watershed Protection (EWP) program provides technical and financial services for watershed repair on **public (state and local) and private land**. The goal is to reduce flood risk via funding and expert advice for land treatments. The EWP program can provide up to 75% of funds; remaining funds can be paid with in-kind volunteer labor. This funding is used by the State Emergency Rehabilitation Team (a multi-agency group assembled by the NRCS) to develop specific recovery and treatment plans. Additional information on the EWP program can be found here:

<https://www.nrcs.usda.gov/programs-initiatives/ewp-emergency-watershed-protection>

Examples of potential treatments include (USFS 2021d):

- Hillside stabilization (for example, placing bundles of straw parallel to the slope to slow erosion)
- Hazard tree cutting
- Felling trees perpendicular to the slope contour to reduce runoff
- Mulching areas seeded with native vegetation
- Stream enhancements and construction of catchments to control erosion, runoff, and debris flows
- Planting or seeding native species to limit spread of invasive species

In some cases, additional funding to improve burned areas and achieve desired conditions for up to five years after containment is obtained. Burned Area Rehabilitation (BAR) supports the healing process and provides a “bridge” to long-term recovery.

For longer-term recovery and restoration efforts, the USFS provides a science-based framework to guide post-fire restoration efforts in National Forest lands in California. The framework is based on a five-step process that leads to the development of a restoration portfolio that can inform project planning and monitoring (USFS 2021d). The framework is available at:

https://www.fs.usda.gov/psw/publications/documents/psw_gtr270/psw_gtr270.pdf

A comparison of potential hillside, channel, and road treatments is available at:

<https://www.afterwildfirenm.org/post-fire-treatments/which-treatment-do-i-use>

For additional post-fire recovery resources please visit the links below:

<https://www.bia.gov/service/post-wildfire-recovery>

<https://www.nifc.gov/programs/post-fire-recovery>

Emergency Stabilization-Specific Treatment Details

Hillslope Treatments

Cover Applications:

Dry mulch: provides immediate ground cover with mulch to reduce erosion and downstream flow.

Wet mulch (hydromulch): provides immediate cover to hold moisture and seeds on slopes using a combination of organic fibers, glue, suspension agents, and seeds (most effective on inaccessible slopes).

Slash spreading: provides ground cover to reduce erosion by felling trees in burned areas.

Seeding: reduces soil erosion over time with an application of native seed mixtures (most successful in combination with mulching). Breaking up and loosening topsoil to break down the hydrophobic layer on top of the soil is also effective.

Erosion Barrier Applications:

Erosion control mat: organic mats staked on the soil surface to provide stability for vegetation establishment.

Log erosion barrier: trees felled perpendicular to the hillslope to slow runoff.

Fiber rolls (wattles): rolls placed perpendicular to the hillslope to reduce surface flows and reduce erosion.

Silt fencing: permeable fabric fencing installed parallel to the slope contour to trap sediment as water flows down the hillslope.

Channel Treatments

Check dam: small dams built to trap and store sediment in stream channels.

In-channel tree felling: felling trees in a staggered pattern in a channel to trap debris and sediment.

Grade stabilizer: structures made of natural materials placed in ephemeral channels for stabilization.

Stream bank armoring: reinforcing streambanks with natural materials to reduce bank cutting during stream flow.

Channel deflector: an engineered structure to direct flow away from unstable banks or nearby roads.

Debris basin: constructed to store large amounts of sediment moving in a stream channel.

Road and Trail Treatments

Outsloping and rolling dips (water bars): alter the road shape or template to disperse water and reduce erosion.

Overflow structures: protect the road by controlling runoff and diverting stream flow to constructed channels.

Low water stream crossing: culverts replaced by natural fords to prevent stream diversion and keep water in the natural channel.

Culvert modification: upgrading culvert size to prevent road damage.

Debris rack and deflectors: structure placed in a stream channel to collect debris before reaching a culvert.

Riser pipes: filter out debris and allow the passage of water in stream channels.

Catchment-basin cleanout: using machinery to clean debris and sediment out of stream channels and catchment basins.

Trail stabilization: constructing water bars and spillways to provide drainage away from the trail surface.

These treatments and descriptions are further detailed at: <https://afterwildfirenm.org/post-fire-treatments/treatment-descriptions>

For more information about how to install and build treatments, see the Wildfire Restoration Handbook at: https://www.rmfi.org/sites/default/files/hero-content-files/Fire-Restoration-HandbookDraft_2015_2.compressed_0.pdf

Timber Salvage

Private and federal landowners may decide to harvest trees killed in the fire, a decision that can be highly controversial. Trees remaining post-fire can be instrumental for soil and wildlife habitat recovery, but dead standing trees may also pose safety concerns and fuel loadings may still be conducive to future high intensity wildfires. Burned soil is especially susceptible to soil compaction and erosion so it is recommended to have professionals perform the timber salvage. Several programs assist landowners with timber salvage, including the NRCS Environmental Quality Incentives Program (EQIP) and the Farm Services Emergency Forest Restoration Program (EFRP): <https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/emergency-forest-restoration/index>

Invasive Species Management and Native Revegetation

Wildfire provides an opportunity for many invasive species to dominate the landscape because many of these species thrive on recently burned landscapes. It is imperative that landowners prevent invasive establishment by eradicating weeds early, planting native species, and limiting invasive seed dispersal.

Planting native seeds is an economical way to restore a disturbed landscape. Vegetation provides protection against erosion and stabilizes exposed soils. In order to be successful, seeds must be planted during the proper time of year and using correct techniques. Use a native seed mixture with a diversity of species and consider the species' ability to compete with invasive species. Before planting, the seedbed must be prepared with topsoil and by raking to break up the hydrophobic soil layer. If you choose to transplant or plant native species, consider whether the landscape has made a sufficient recovery to ensure the safety of the individuals.

Long-Term Community Recovery

On non-federal land, recovery efforts are the responsibility of local governments and private landowners. Challenges associated with long-term recovery include homes that were severely damaged or were saved but are located in high severity burn areas. Furthermore, homes saved but located on unstable slopes or in areas in danger of flooding or landslides present a more complicated challenge.

Economically, essential businesses that were burned or were otherwise forced to close pose a challenge to communities of all sizes. Given these complications, rebuilding and recovery efforts can last for years, with invasive species control and ecosystem restoration lasting even longer. It is critical that a long-term plan is in place and there is sufficient funding and support for all necessary ecosystem and community recovery. To learn about more post-fire recovery resources, visit the After the Flames website here: <https://aftertheflames.com/resources/>.

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