OCTOBER 2025

CITY OF ESCONDIDO

COMMUNITY WILDFIRE PROTECTION PLAN

Working together to build fire-adapted communities, resilient to wildfire

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ENVIRONMENTAL CONSULTANTS

We would like to formally thank the Core Team and all stakeholders, notably the City of Escondido and the Escondido Fire Department, 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.

For additional information, questions, or concerns regarding this project, please contact Project Manager Chloe Lewis at chloe.lewis@swca.com.

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

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The entities listed below participated in the development of and/or reviewed and are in support of the City of Escondido Community Wildfire Protection Plan:

Signature	**Signature**
Name (printed)	**Name (printed)**
Date	**Date**
Agency /Position (printed)	**Agency /Position (printed)**
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Agency /Position (printed)	**Agency /Position (printed)**

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EXECUTIVE SUMMARY

WHAT IS THE ESCONDIDO COMMUNITY WILDFIRE PROTECTION PLAN (CWPP) AND WHY DOES IT MATTER?

The 2025 City of Escondido Community Wildfire Protection Plan (CWPP) is a comprehensive, locally driven strategy to reduce wildfire risk, protect lives and property, and foster community resilience. Building on lessons learned from recent fire seasons and informed by the latest science and stakeholder input, the CWPP provides a framework for wildfire preparedness, mitigation, and adaptation tailored to Escondido's unique landscape and community values.

WHO DEVELOPED THE PLAN AND HOW WAS THE COMMUNITY INVOLVED?

The CWPP was collaboratively developed by a Core Team led by the City of Escondido and the Escondido Fire Department, with input from local experts, emergency management professionals, and community stakeholders. The planning process included public meetings, surveys, and workshops, ensuring broad engagement and meaningful input from residents, property owners, and partner organizations. The draft plan has been made available for public review and comment, and all feedback has been considered in finalizing the plan.

WHAT AREA DOES THE PLAN COVER, AND WHO DOES IT PROTECT?

The planning area encompasses the entire City of Escondido and the adjacent Rincon del Diablo Fire Protection District, totaling approximately 79 square miles. This area includes a diverse mix of urban neighborhoods, rural communities, critical infrastructure, open space preserves, and wildland-urban interface (WUI) zones. The CWPP aims to protect roughly 151,000 residents, thousands of homes and businesses, and a wide range of natural, cultural, and economic assets.

See Chapter 1 for more information on the planning area.

WHAT ARE THE MAIN WILDFIRE RISKS AND CHALLENGES IN ESCONDIDO?

Escondido faces a heightened wildfire risk stemming from its Mediterranean climate, rugged topography, and extensive ignitable vegetation, all of which are compounded by ongoing development within the WUI (defined in Chapter 2). The region is particularly vulnerable to fast-moving, destructive wildfires, which pose significant threats to homes, infrastructure, and sensitive natural habitats. Santa Ana wind events pose a further threat, historically having led to highly destructive wildfire throughout in the region. Factors such as limited defensible space in certain neighborhoods, overgrown and unmanaged vegetation, challenging evacuation routes, and an increased likelihood of human-caused ignitions further intensify these risks.

For more information about the fire environment in Escondido, see Chapter 2.

HOW DOES THE CWPP ADDRESS WILDFIRE RISK AND BUILD RESILIENCE?

The CWPP provides a thorough assessment of wildfire hazards and risks, combining field-based community hazard evaluations with advanced quantitative wildfire risk modeling. The plan identifies and

prioritizes high-risk areas and communities, and outlines actionable mitigation strategies across three core goals:

Restoring and maintaining resilient landscapes through hazardous fuel reduction, ecological restoration, and invasive species management.

Promoting fire-adapted communities by supporting defensible space, home hardening, public education, and targeted outreach to vulnerable populations.

Enhancing wildfire response capabilities by strengthening interagency coordination, improving emergency access and water supply, and supporting fire department staffing and training.

WHAT DID THE FINDINGS OF THE QUANTITATIVE WILDFIRE RISK ASSESSMENT REVEAL ABOUT WILDFIRE RISK IN ESCONDIDO?

The Quantitative Wildfire Risk Assessment for the 2025 Escondido CWPP used advanced wildfire modeling and spatial data to identify areas of highest risk, particularly along the city's eastern and northern edges where homes, infrastructure, and wildland fuels converge. These analyses showed that, while the urban core faces lower direct risk, neighborhoods near open space and steep terrain are especially vulnerable to intense wildfire behavior and rapid fire spread. Field assessments complemented these findings and helped validate local conditions, also allowing for the identification of additional areas of elevated risk that were not captured through the desktop risk assessment due to data limitations.

WHAT ARE SOME KEY RECOMMENDATIONS AND PRIORITIES?

The CWPP's recommendations are organized within the plan according to the three goals outlined above. Some examples of recommended actions include but are not limited to:

- Implementing fuel breaks and green waste programs in WUI areas
- Conducting defensible space inspections and supporting home hardening
- Enhancing public education and community engagement, including outreach to at-risk residents
- Improving evacuation planning and signage, especially in remote and high-risk communities
- Investing in fire response infrastructure, equipment, and interagency coordination
- Monitoring and adapting strategies based on ongoing evaluation and changing conditions

See Chapter 4 for a comprehensive description of the recommended wildfire mitigation measures identified for the City of Escondido through this planning process.

HOW WILL PROGRESS BE MEASURED AND THE PLAN KEPT CURRENT?

A robust monitoring and evaluation framework is included to track implementation, assess outcomes, and guide adaptive management. The Core Team will oversee annual reviews, update priorities as needed, and ensure the plan remains responsive to new data, evolving risks, and community needs. Major updates are scheduled every 5 years, with interim revisions as necessary after significant fire events or policy changes.

See Chapter 5 for information regarding CWPP monitoring and implementation.

DOES THE CWPP HAVE REGULATORY AUTHORITY?

The CWPP is a non-regulatory, voluntary plan that provides guidance and a collaborative framework for wildfire mitigation. Its effectiveness depends on the joint actions of city officials, local agencies, partner organizations, and property owners. The plan's true value lies in fostering shared responsibility, informed decision making, and coordinated action across the Escondido community.

WHY IS ONGOING COLLABORATION AND ADAPTATION IMPORTANT?

Wildfire risk in Escondido is dynamic, shaped by climate, development, and social factors. Building and maintaining resilience requires a sustained commitment to learning, adaptation, and partnership.
By working together, the City of Escondido, its residents, and its partners can reduce wildfire risk, protect what matters most, and create a safer, more resilient future for all.

HOW IS THE PLAN ORGANIZED?

Chapter 1: Introduction
Introduces the purpose, scope, and collaborative development process of the CWPP, outlining the planning area and core team.

Chapter 2: Fire Environment
Describes Escondido's climate, topography, vegetation, and fire history, highlighting factors that influence local wildfire behavior.

Chapter 3: Risk-Hazard Assessment
Presents a detailed assessment of wildfire hazards and risks using both field evaluations and advanced risk modeling.

Chapter 4: Mitigation Strategies
Outlines prioritized recommendations for reducing wildfire risk, including fuels management, public outreach, and response enhancements.

Chapter 5: Monitoring and Evaluation
Establishes a framework for tracking progress, evaluating outcomes, and adapting strategies to ensure the CWPP remains effective and current.

Chapter 6: Homeowner Actions and Resources
Provides practical guidance and resources for residents to create defensible space, harden homes, and prepare for wildfire emergencies.

Appendix A: Planning Process and Background Legislation
Details the legislative context, planning approach, and compliance with state and federal CWPP requirements.

Appendix B: Community Information
Offers supporting data on local infrastructure, evacuation resources, and recreational assets relevant to wildfire planning.

Appendix C: Community Field Assessments
Summarizes on-the-ground wildfire hazard assessments for neighborhoods and key areas within the planning area.

Appendix D: Supporting Maps
Includes maps illustrating wildfire hazards, risk zones, and other spatial data used throughout the CWPP.

Appendix E: Funding Sources
Lists local, state, federal, and private funding opportunities to support wildfire mitigation and community resilience projects.

Appendix F: Project Outreach
Documents the community outreach process, including public engagement activities and survey results.

Appendix G: Pre-Fire Fuel Treatment Types and Methods
Describes common fuel reduction strategies and best practices for vegetation management in fire-prone areas.

Appendix H: Post-Fire Response and Restoration
Provides guidance on post-fire hazards, recovery strategies, and resources for ecological and community restoration.

CHAPTER 1 INTRODUCTION

1.1 INTRODUCTION

The United States is facing growing challenges to forest and watershed health, driven in large part by increasingly severe wildfires. Since 2000, both the total acreage burned and the average fire size have risen sharply. Between 2013 and 2022, wildfires burned an average of 7.2 million acres annually, more than double the average from the 1990s (NIFC 2024). Some years stand out as especially destructive, including 2007, 2012, 2015, and 2020. The 2015 fire season holds the record for the most acreage burned in a single year since modern recordkeeping began in 1960, with 10.13 million acres lost, followed closely by 10.12 million acres in 2020. In 2024, 64,897 wildfires burned 8.92 million acres nationwide, approximately 27% above the 10-year national average (NIFC 2024).

The California's Forests and Rangelands: 2017 Assessment remains the most recent comprehensive statewide evaluation, identifying major challenges such as increased wildfire severity, prolonged drought, pest outbreaks, and ecosystem degradation.

An updated assessment is in progress through the California Department of Forestry and Fire Protection (CAL FIRE FRAP 2017) Fire and Resource Assessment Program (FRAP), with draft chapters under review and public release expected in late 2025. A new interactive viewer is also being developed to display wildfire severity and vegetation trends from 2015 to 2023.

In the meantime, strategic guidance documents such as the Fire and Resource Assessment Program (CAL FIRE FRAP 2017) and the California Wildfire and Forest Resilience Action Plan (2021) continue to inform policy and implementation. These plans call for accelerated, coordinated vegetation management, fuel reduction, and fire-adapted community planning, with progress tracked by the California Wildfire and Forest Resilience Task Force.

California faced a particularly severe fire season in 2024, with 8,110 wildfires burning 1,077,771 acres statewide. The fires destroyed 1,837 structures and damaged 644 others, with one reported civilian fatality (CAL FIRE 2024a, 2025e). San Diego County has a long and well-documented history of significant wildfires that have repeatedly impacted the region, including the City of Escondido. The area's combination of coastal foothills, chaparral ecosystems, and expanding wildland-urban interface (WUI) makes it especially susceptible to fast-moving and destructive fires, particularly during Santa Ana wind events.

Over the past two decades, Escondido and its surrounding communities have faced multiple fire events that led to evacuations, property loss, and regional emergency coordination. These incidents have underscored the need for robust wildfire preparedness, interagency planning, and ongoing community engagement.

More broadly, Southern California's wildfire regime continues to evolve in response to prolonged drought, dense fuel accumulation, and climate-driven changes in wind and precipitation patterns. While large fires in nearby counties have gained national attention in recent years, the risk factors influencing Escondido's fire vulnerability remain consistent with regional trends.

Historically, fire played a critical role in shaping California's ecosystems. Prior to Euro-American settlement, an estimated 1.8 million acres burned annually, much of it through low-intensity lightning strikes or cultural burning practices led by Indigenous communities (Kolden 2007). The legacy of fire suppression has significantly altered these dynamics, leading to hazardous fuels build-up and increasing the likelihood of severe fire behavior under modern conditions (Calkin et al. 2015; Stephens et al. 2007). These realities make proactive fire management and planning essential for community safety and resilience.

1.2 THE ROLE OF CWPPs

As wildfire severity and frequency continue to increase, communities must proactively plan for, mitigate, and adapt to wildfire risks. A community wildfire protection plan (CWPP) provides a locally driven framework for identifying hazards, reducing risk, and strengthening fire resilience through coordinated action.

This CWPP for the City of Escondido functions as both a strategic planning document and a community action guide.

This plan follows a customized format designed to reflect local priorities and planning context while fully meeting the requirements for CWPPs established by CAL FIRE and the Office of the State Fire Marshal (OSFM). Although it does not adopt the optional structure of the California CWPP Toolkit (CAL FIRE 2024b), it aligns with all state criteria, including:

- Collaborative development with public engagement
- Assessment of wildfire hazards and risks
- Identification and prioritization of fuel reduction and community protection actions
- Strategies to reduce structural ignitability
- Formal approval by the City of Escondido, Escondido Fire Department, and CAL FIRE San Diego Unit
- An approach that ensures the plan remains locally relevant while satisfying all state requirements for an approved CWPP.

In addition, the plan includes clear goals and objectives, a defined planning area, implementation roles and responsibilities, and an overview of fire response capabilities.

The Escondido CWPP aligns with CAL FIRE's San Diego Unit Fire Plan and supports statewide resilience strategies by integrating defensible space, home hardening, vegetation management, public outreach, and interagency coordination. Drawing from recent wildfire experiences at the local and state levels, this plan aims to foster a safer, more fire-adapted community.

1.3 GOAL OF A COMMUNITY WILDFIRE PROTECTION PLAN

The goal of a CWPP is to help local communities strengthen their capacity for wildfire mitigation while working in partnership with government agencies to identify high-risk areas. A CWPP guides the prioritization of wildfire mitigation, fire suppression efforts, and emergency preparedness activities. It also plays a critical role in increasing public awareness by helping residents better understand both natural and human-caused wildfire risks that threaten lives, safety, and the local economy.

Under the Healthy Forests Restoration Act of 2003 (HFRA), a CWPP must meet the following minimum requirements (Society of American Foresters 2004):

- Collaboration: Local and state government representatives must develop the CWPP collaboratively, in consultation with federal agencies and other interested parties.
- Prioritized Fuel Reduction: The plan must identify and prioritize areas for hazardous fuel reduction and recommend appropriate treatment types and methods to protect communities at risk and critical infrastructure.
- Structural Ignitability Treatments: The CWPP must include recommendations for actions that property owners and communities can take to reduce the ignitability of structures within the planning area.

Additional information on the planning process is available in Appendix A.

1.4 ALIGNMENT WITH THE NATIONAL COHESIVE WILDLAND MANAGEMENT STRATEGY

The 2025 CWPP update for the City of Escondido aligns with the National Cohesive Wildland Fire Management Strategy (Cohesive Strategy) (WFLC 2014), the Phase III Western Regional Action Plan, and CAL FIRE's California CWPP Toolkit (OSFM 2022) criteria and requirements. It supports the national vision "to safely and effectively extinguish fire when needed; use fire where allowable; manage our natural resources; and as a Nation, live with wildland fire."

The Cohesive Strategy (Figure 1.1) outlines three primary national goals essential to achieving this vision:

Restore and Maintain Landscapes: Promote fire-resilient landscapes across all jurisdictions, managed according to ecological and land use objectives.

Promote Fire-Adapted Communities: Support communities and infrastructure that are prepared for wildfire and capable of withstanding fire events without major loss of life or property.

Enhance Wildfire Response: Encourage coordinated, risk-informed wildfire response across jurisdictions to improve safety and effectiveness.

Figure 1.1. The three primary goals of the National Cohesive Wildland Fire Management Strategy, with the addition of post-fire recovery.

Escondido's CWPP incorporates these three core goals along with planning for post-fire recovery. The plan acknowledges the hazards that follow wildfire and the elevated risks they pose to public safety, infrastructure, and ecosystem health. Together, these components form a comprehensive framework for wildfire adaptation and long-term community resilience.

This CWPP supports these goals through locally informed strategies outlined in Chapter 4, Mitigation Strategies.

For more information on the Cohesive Strategy, please visit:
https://www.forestsandrangelands.gov/strategy/documents/strategy/CSPhaseIIINationalStrategyApr2014.pdf.

1.5 ALIGNMENT WITH PLANS AND AGREEMENTS

This CWPP update is aligned with multiple local, state, and federal planning efforts, which are summarized in more detail in Appendix A. These plans and strategies collectively aim to reduce wildfire risk, protect communities and natural resources, and enhance overall fire resilience throughout the Escondido area and greater San Diego County.

Key plans and documents that inform and support this CWPP include:

- City of Escondido Local Hazard Mitigation Plan
- City of Escondido General Plan – Community Protection
- San Diego County Multi-Jurisdictional Hazard Mitigation Plan
- San Diego County General Plan – Safety Element
- CAL FIRE San Diego Unit Strategic Fire Plan
- CAL FIRE California Strategic Fire Plan (Statewide)
- San Diego County Operational Area Emergency Operations Plan
- San Diego Association of Governments (SANDAG) Regional Plan and wildfire resilience initiatives
- Fire Safe Council of San Diego County – CWPP Guidance and Local Fuel Treatment Priorities

CWPPs from Surrounding Communities and Local Jurisdictions:

- Vista Fire Protection District CWPP (2023)
- Fire Safe Council Of Ramona West End (2024)
- Deer Springs Fire Protection District CWPP (updated 2022)
- San Marcos CWPP (2024)
- Valley Center CWPP
- Harmony Grove/Elfin Forest CWPP (2022)
- Fallbrook CWPP (2022)
- Palomar Mountain CWPP
- Julian CWPP (2023)
- Alpine/Viejas CWPP (2023)
- Olivenhain Fire Safe Council CWPP (2023)

1.6 CORE TEAM

The development of the 2025 Escondido CWPP update was guided by the City of Escondido and the Escondido Fire Department. Central to this process was a dedicated Core Team, comprising fire department leadership, emergency management professionals, administrative staff, and representatives from local, state, and federal agencies. This diverse group played a vital role in shaping a meaningful and actionable CWPP by contributing to key decision making, data sharing, field assessments, and community engagement efforts. By bringing together a wide range of perspectives and expertise, the Core Team ensured that the planning process was collaborative, inclusive, and responsive to the needs of the community.

The project officially kicked off on June 20, 2025, followed by the first Core Team meeting on June 24, 2025. The team reconvened for Core Team Meeting #2 on July 16–17, 2025, and held Core Team Meeting #3 on August 12, 2025. The Core Team and SWCA will present the final CWPP at the October 15, 2025, City Council Meeting.

Table 1.1. City of Escondido Core Team List

Name	Title
John Tenger	Fire Chief
Kevin Beverly	Battalion Chief
Tyler Batson	Division Chief (Training & EMS)
Brian Salazar	Battalion Chief
Jeff Murdoch	Emergency/Disaster Preparedness Manager
La Vona Koretke	Deputy Fire Marshal
Laura Costello	Administrator

1.7 PLANNING AREA

The planning area (Figure 1.2) encompasses the entire City of Escondido, California, as defined by its geographic and political boundaries, along with the adjacent Rincon del Diablo Fire Protection District (FPD), which receives fire and emergency medical services through a longstanding contract with the City (Figure 1.3) (City of Escondido 2023).

Located in northern San Diego County, approximately 30 miles northeast of downtown San Diego and 18 miles inland from the coast, Escondido spans about 37 square miles. The Rincon del Diablo FPD adds another 42 square miles of unincorporated, primarily rural and semi-rural territory to the planning area, bringing the total service area to roughly 79 square miles (Rincon del Diablo FPD 2024). While emergency response is provided by the City of Escondido Fire Department, administrative oversight for the Rincon del Diablo FPD is maintained by the Rincon del Diablo Municipal Water District, a special district that also manages local water service. This combined jurisdiction encompasses a diverse mix of land uses, including urban neighborhoods, commercial centers, agricultural areas, large-lot residential development, and extensive WUI zones.

Escondido and the surrounding Rincon del Diablo FPD area are characterized by rugged terrain, coastal foothills, and significant open space. Notable natural features such as Daley Ranch, Lake Wohlford, and the San Pasqual Valley support native vegetation communities like chaparral, coastal sage scrub, and oak woodland, ecosystems that are both fire-adapted and fire-prone (California Native Plant Society [CNPS] 2022; SANDAG 2023). According to the 2022 U.S. Census estimate, Escondido is home to approximately 151,000 residents and more than 47,000 households (San Diego Parks Department 2025; U.S. Census Bureau 2022). These landscape characteristics, coupled with population density and continued development, contribute to the area's overall wildfire risk.

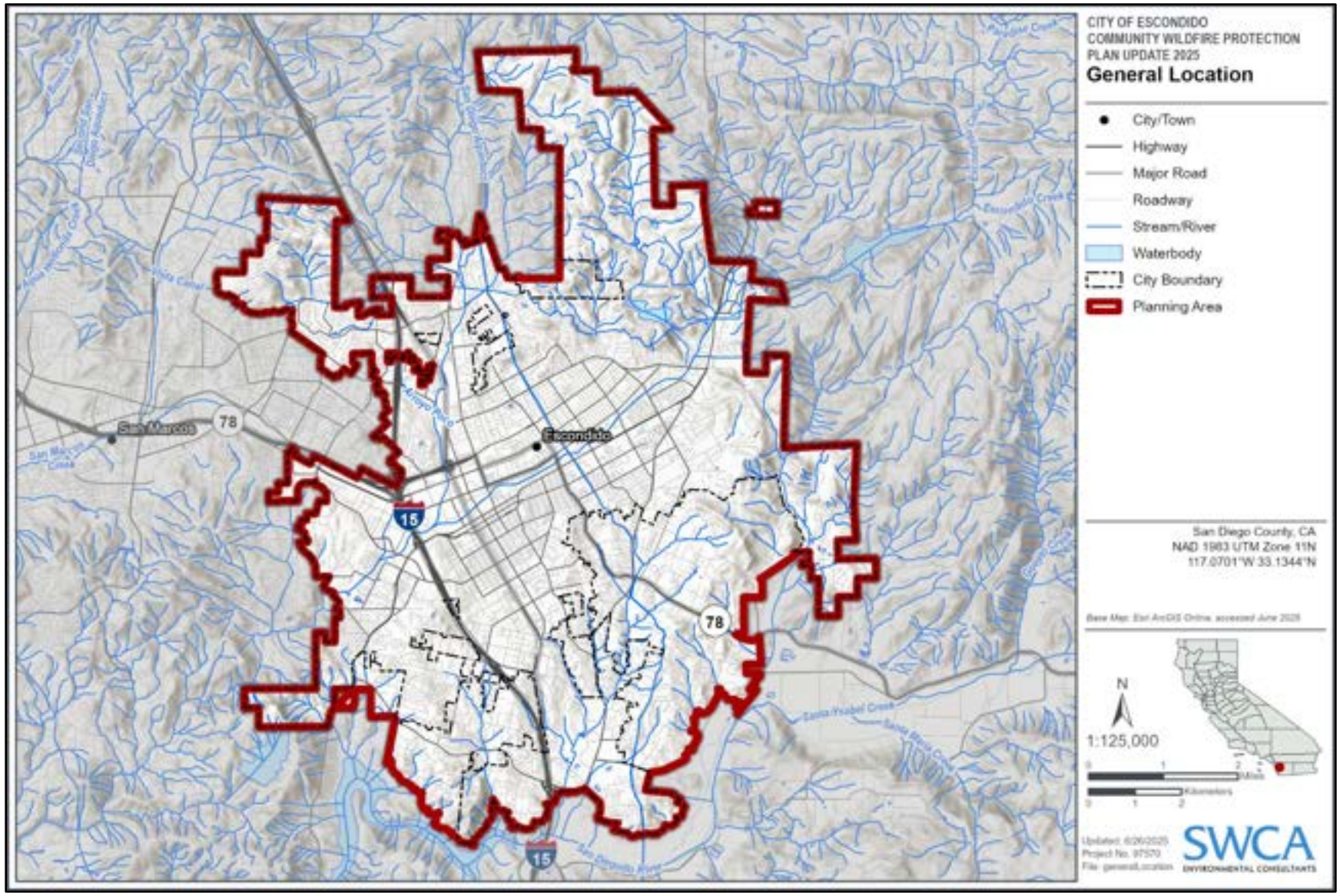

Figure 1.2. City of Escondido CWPP planning area.

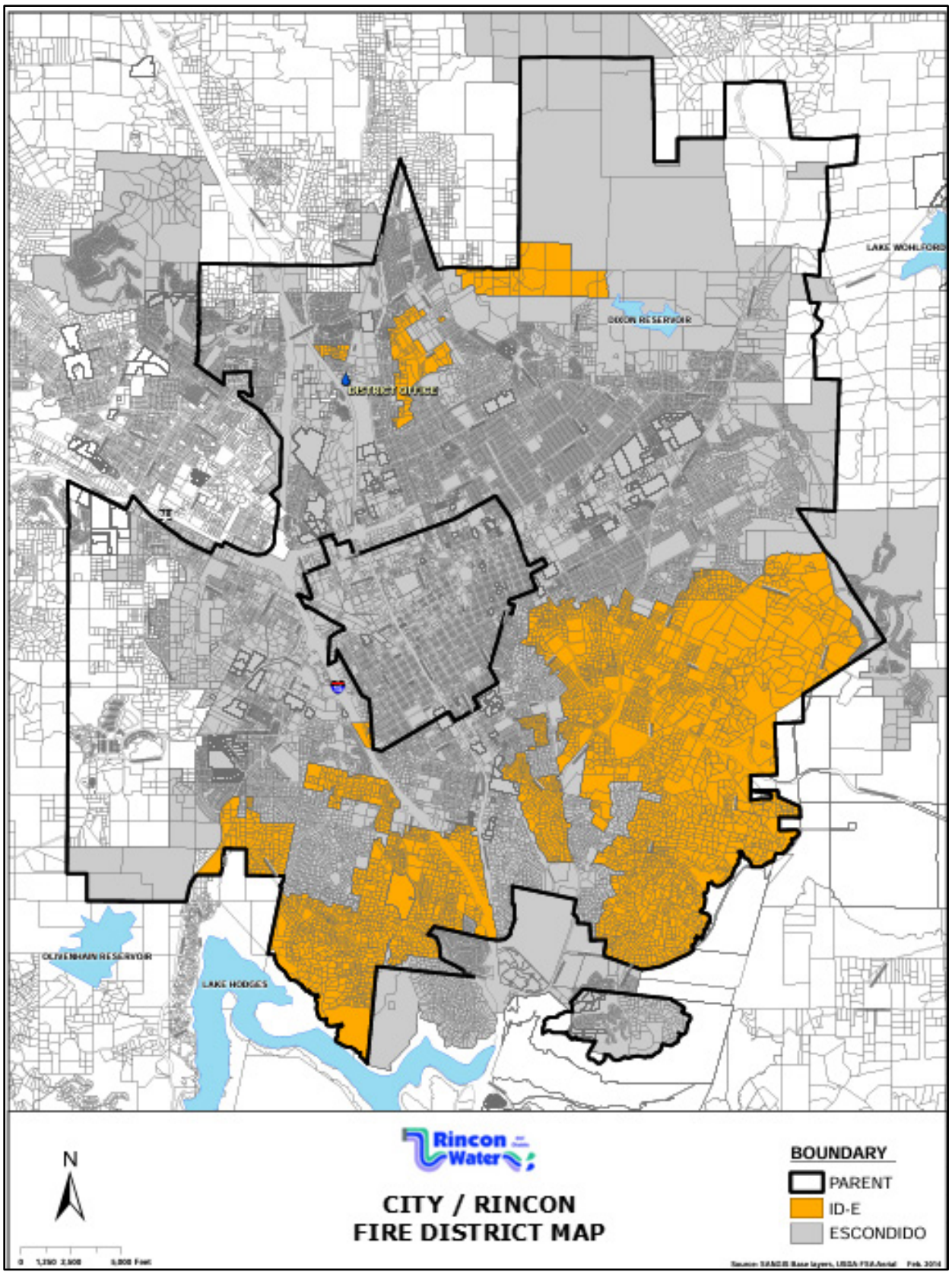

Figure 1.3. Rincon del Diablo service area.

https://rinconwater.org/fire-district/our-history/

1.7.1 Community Values

A primary goal of the CWPP is to identify, prioritize, and protect the wide range of values and assets within the city of Escondido that are at risk from wildfire. These community values are identified collaboratively through research and input from the Core Team, publicly available data sources, and feedback gathered during stakeholder engagement and public outreach efforts.

Residents utilizing Eagle Scout Lake within Kit Carson Park (natural community value) for recreation.

Values at risk include natural, cultural, and socioeconomic resources, along with human life and property. The area's natural resources, including open space preserves, sensitive habitats, and watershed areas hosting native vegetation and wildlife reflect Escondido's natural importance to the surrounding region and its biodiversity. Parks and trails allow for a deepened connection between residents and natural resources and are essential in providing recreational opportunities and social gatherings. Cultural values such as historic buildings and cemeteries are present, and due to their irreplaceable nature, are key resources to consider when discussing fire protection. Socioeconomic values such as public safety infrastructure and critical facilities such as hospitals, schools, fire stations, police stations, care centers and utilities form the backbone of civic life, providing essential services and maintaining the community's well-being.

While the scope of this CWPP does not include a comprehensive valuation of all assets potentially affected by wildfire, it provides a framework for understanding what the community considers important to protect and prioritizes mitigation measures to reduce the vulnerability of those highly valued resources and assets (HVRAs).

Escondido City Hall.

1.7.2 Social Vulnerability

The Federal Emergency Management Agency (FEMA) defines social vulnerability as the susceptibility of social groups to the negative impacts of natural hazards, such as wildfires. These impacts may include disproportionate injury, death, property loss, or disruption of livelihoods. A single hazard event can have significantly different consequences for different individuals, even when the hazard itself affects an entire community equally. Certain populations may be more vulnerable due to factors such as income level, age, language access, health status, or housing conditions (FEMA 2022).

For example, older adults may face greater difficulty evacuating during a wildfire, increasing the risk of injury or entrapment. Similarly, lower-income households may lack the financial means to retrofit their homes for defensible space or structural hardening, leaving them more exposed to wildfire damage. Language barriers or lack of access to transportation can also limit awareness of evacuation orders and response capabilities during emergencies.

In Escondido, social vulnerability varies across neighborhoods based on income levels, housing types, age demographics, and proximity to the WUI. According to regional data and U.S. Census information, parts of Escondido with higher proportions of renters, seniors, and lower-income households may be more at-risk during wildfire events. These communities may experience more difficulty preparing for, responding to, and recovering from a fire.

The CWPP incorporates an equity lens to help identify and prioritize areas where socially vulnerable populations overlap high wildfire risk. This approach supports the development of targeted outreach strategies, evacuation planning, and mitigation investments that serve the most at-risk communities. These maps cover the following indicators:

- Age
- Disability
- Limited English proficiency
- Minority populations
- Mobile homes
- No vehicle access
- Poverty
- Overall Social Vulnerability Index

1.7.2.1 Communities at Risk Designation (Federal and State)

The National Fire Plan was established to reduce wildfire risk to communities, with an initial list of high-risk WUI communities published in the Federal Register in 2001. This list was developed through collaboration between federal and state agencies, focused on communities adjacent to federal lands, and has not been formally updated at the federal level since its release (USDA 2001). In California, responsibility for maintaining and expanding this list has transitioned to the State Forester (CAL FIRE Director). Due to California's unique fire-prone landscape, CAL FIRE has broadened the scope to include communities beyond those bordering federal lands (California State Forester 2014).

Within Escondido, several communities were identified as high-risk WUI areas in the original 2001 Federal Register list and have since been reaffirmed or further defined in subsequent CAL FIRE assessments, including the 2025 Fire Hazard Severity Zone (FHSZ) maps. Recognized communities at elevated wildfire risk include:

- Felicita Park Area
- Del Dios
- San Pasqual Valley
- Citracado/West Escondido Foothills
- Lake Hodges Area
- El Norte Parkway Foothills
- East Valley Parkway Corridor
- Midway/La Honda Drive Area
- North Broadway Foothills

These areas face increased wildfire exposure due to factors such as steep topography, dense native vegetation, and proximity to open space or undeveloped wildlands. While not all were included in the original federal list, current state-level data and hazard mapping confirm their continued designation as communities at risk.

In addition to these recognized areas, this CWPP identifies additional at-risk neighborhoods based on local fire history, spatial hazard modeling, field assessments, and stakeholder input. For more detail on community-specific risk profiles and prioritization, refer to Chapter 3 and Appendix C.

1.7.3 Land Ownership

1.7.3.1 Public and Institutional Ownership

Land ownership within the City of Escondido's approximately 23,880-acre planning area is predominantly private, consisting of residential, commercial, and agricultural properties. These privately held lands are interspersed with public and institutional holdings that support critical functions such as recreation, habitat conservation, watershed protection, and wildfire risk reduction. Table 1.2 and Figure 1.4 provide the distribution of land ownership across the planning area.

Table 1.2. Public and Institutional Land Ownership Within the Planning Area

Owner	Acres within Planning Area
City of Escondido	4,790.16
San Diego County	417.54
Bureau of Land Management	40.76
Other Federal	9.76
State of California	13.33
State (Caltrans)	507.78
School Districts	516.94
Other Special Districts	604.05
Water Districts	30.60

City of Escondido (4,790 acres)

The City of Escondido is the largest public landowner in the planning area, managing several key WUI areas that support fire resilience, ecological management, and public recreation. Major sites include Daley Ranch (3,058 acres), Lake Wohlford, Lake Dixon, and surrounding habitat corridors and trails. These lands are actively managed for fuel reduction, habitat restoration, and community access.

San Diego County (418 acres)

The County of San Diego holds property within the Escondido area for public infrastructure and services, including regional parks, roadways, and flood control. County-owned lands are primarily located near foothill areas and along the southern boundary of the planning area.

School Districts (517 acres)

Local school districts manage over 500 acres of land for educational facilities and associated infrastructure. While most of these areas are developed, some sites include open space or vegetated edges that may intersect WUI zones.

Other Special Districts (604 acres)

Special district holdings include land owned by fire protection, community services, and other local agencies. These lands vary in use and location and represent important partners in wildfire planning and preparedness.

Water Districts (31 acres)

Water agencies within the planning area manage a small amount of land associated with reservoir facilities and watershed protection zones. These properties support both utility infrastructure and fire prevention objectives.

State Lands (521 acres)

State-owned properties include approximately 508 acres under California Department of Transportation (Caltrans) management, primarily for transportation corridors and rights-of-way, along with 13 acres of other state lands. These areas are generally undeveloped but may require vegetation management to reduce wildfire risk near critical infrastructure.

Federal Lands (51 acres)

Federal landholdings within the planning area include approximately 41 acres managed by the Bureau of Land Management (BLM) and 10 acres under other federal agencies. While limited in area, these parcels may require coordination for fuel reduction and cross-jurisdictional planning efforts.

Conservation and Regional Partnerships

Nonprofit organizations such as The Escondido Creek Conservancy and the San Dieguito River Valley Conservancy are active within and near the planning area. These groups hold conservation easements, conduct ecological restoration, and collaborate on wildfire resilience, habitat connectivity, and long-term land stewardship.

Although federal ownership within the city is limited, nearby open space areas such as the San Pasqual Valley and Lake Hodges contribute significantly to regional wildfire mitigation and conservation goals. These areas are supported by ongoing interagency and nonprofit partnerships.

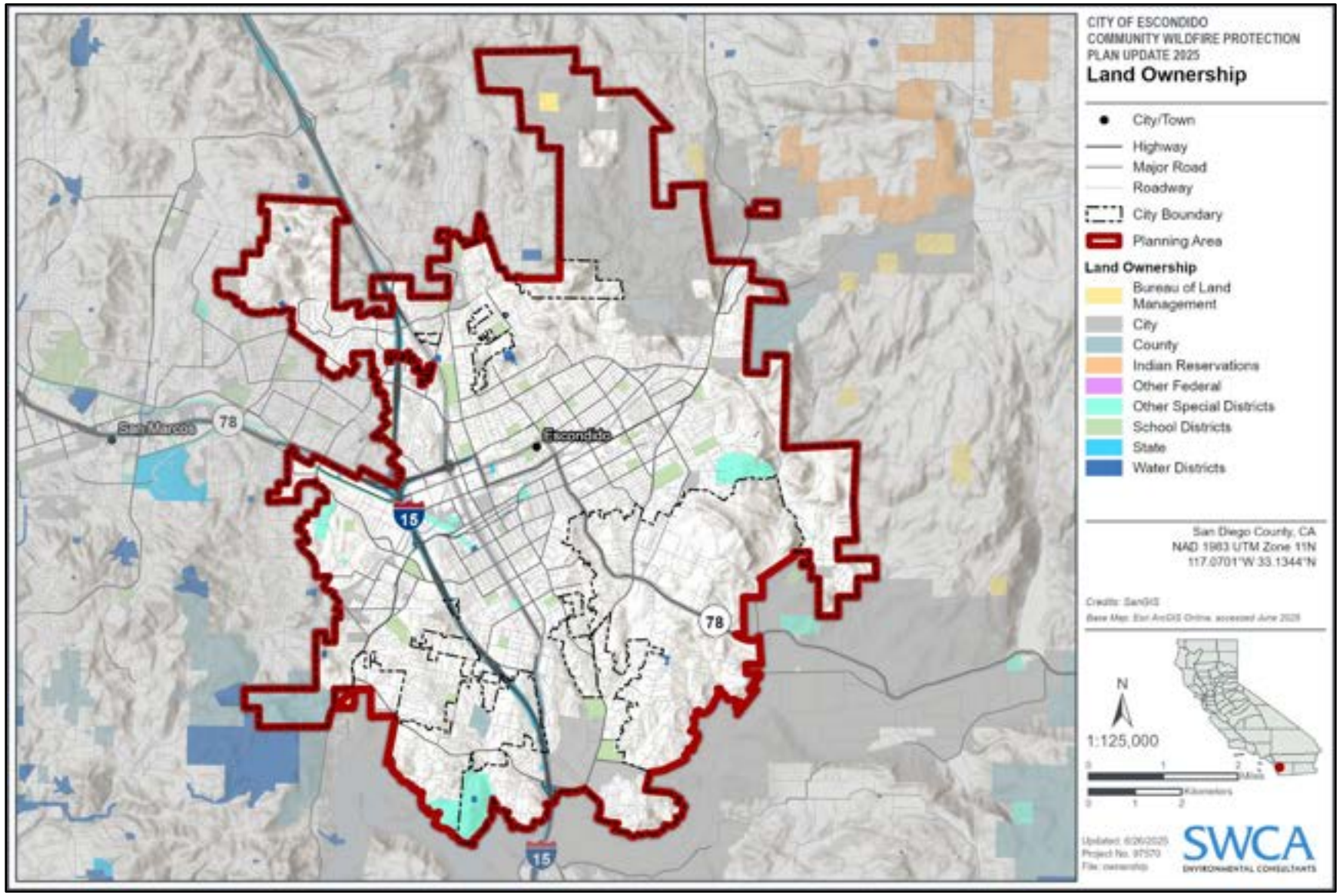

Figure 1.4. City of Escondido land ownership.

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

1.8 PUBLIC INVOLVEMENT

A key element in the CWPP process is the meaningful discussion it fosters among community members about priorities for local fire protection and forest management (Society of American Foresters 2004). The draft CWPP was available for public review from August 15 through September 16, 2025. During this period, the City and project team hosted public meetings and events to gather community input, as detailed in Appendix F, which provides a full description of the outreach process and summarizes community survey results.

The public outreach effort engaged a broad cross section of the community through multiple communication channels, including social media posts, press releases, a publicly available version of the draft CWPP, an online community survey, and an online public comment form. Outreach events included participation in Escondido's annual National Night Out on August 5, 2025; a virtual public meeting on September 9, 2025, from 6:00 to 7:30 p.m.; and an in-person public meeting on September 15, 2025, from 6:00 to 8:00 p.m. Community members were encouraged to participate in all outreach activities and were provided with several opportunities to share feedback, including through the community survey and the public review period for the draft CWPP.

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

Public education and outreach programs are critical to engaging the public and other organizations around wildfire issues.

Typical intersection within the City of Escondido

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CHAPTER 2 FIRE ENVIRONMENT

2.1 WILDLAND-URBAN INTERFACE

The wildland-urban interface (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 (USDA 2001). 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.

According to the HFRA and the CAL FIRE California CWPP Guide/Toolkit, CWPPs must identify and map the WUI. For this plan, WUI boundaries were established using CAL FIRE's FRAP 2019 WUI datasets. A 1.5-mile buffer was applied to the WUI boundary to represent the broader influence zone, areas where conditions exist that can facilitate the spread of fire from wildland fuels to homes and other structures.

The WUI represents an environment where fire can move readily between structural and vegetative fuels, increasing the risk of wildland fire ignitions and the potential loss of life and property. As human development continues to expand into wildland ecosystems, the extent of the WUI grows, influencing fire management practices across the city.

Figure 2.1 illustrates the WUI for the Escondido CWPP planning area, divided into influence zone, intermix, and interface.

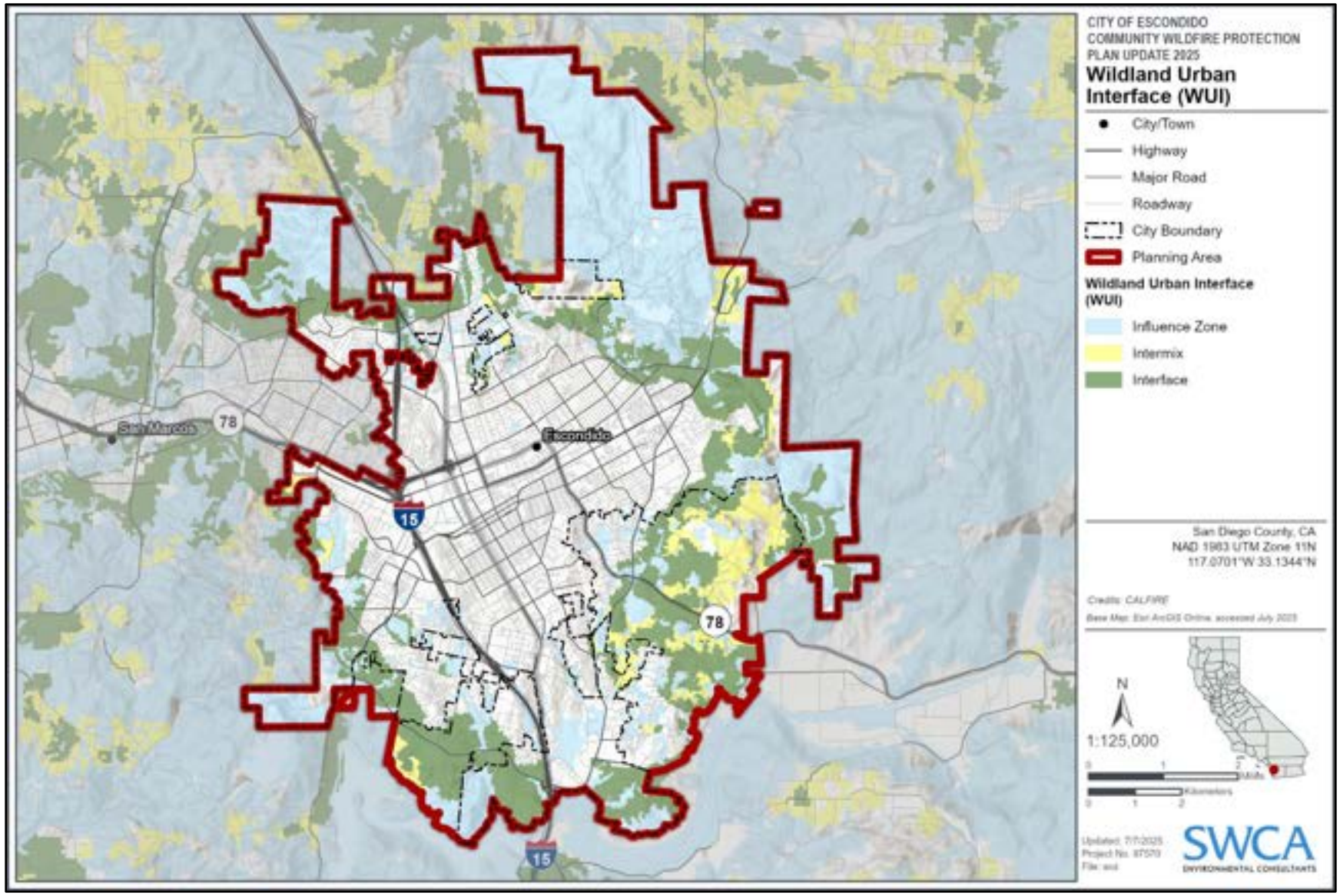


Figure 2.1. Escondido CWPP WUI delineations.

2.1.1 WUI Land Use

California cities continue to face critical challenges in providing safe, affordable housing. By 2030, an estimated 2.5 million new homes will be needed statewide, with at least 1 million designated for low-income households (California Department of Housing and Community Development 2022). Many of these new housing units are being constructed near wildland areas, increasing development within the WUI. Across the United States, more than 46 million homes in approximately 70,000 communities are at risk of wildfire due to their location in the WUI (USFS n.d.).

According to CAL FIRE's Strategic Fire Plan, California has seen a significant increase in the number of structures destroyed by wildfire, underscoring the growing vulnerability of communities in the WUI (CAL FIRE 2018). In recent years, large and destructive fires have occurred more frequently in areas where housing and wildland vegetation overlap, placing additional strain on emergency response systems and public safety infrastructure.

To address these challenges, the City of Escondido has adopted a comprehensive fire code that sets minimum safety standards for buildings, operations, and land use. The code emphasizes fire prevention, protection, life safety, and the regulation of hazardous materials (City of Escondido 2025a). Additionally, the County of San Diego has strengthened its fire and building codes, resulting in a measurable reduction in structure loss compared to areas governed by less stringent regulations. These updates include ignition-resistant construction standards, required fuel modification zones, residential fire sprinkler systems, and minimum water supply requirements such as strategically located water tanks. Together, these measures help reduce wildfire risk to homes and improve community resilience in fire-prone areas.

2.1.2 Vegetation

The City of Escondido contains a diverse mosaic of native vegetation communities that shape wildfire behavior across the landscape (City of Escondido 2001, 2012). These plant communities are especially important in the WUI, where undeveloped open space meets residential and commercial development. Dominant vegetation types include chaparral, coastal sage scrub, oak woodland, grasslands, and riparian corridors. Each exhibits distinct fire ecology and natural fire return intervals that influence landscape-level fire patterns (Los Padres Forest Watch 2019).

Although many of these communities are fire-adapted, their structure, species composition, and ecological function can be altered by extended fire exclusion or the spread of invasive species (Agee 2005). These shifts may disrupt natural fire regimes and increase the likelihood of high-intensity fire (Syphard, Keely, et al. 2006). The presence and condition of native vegetation play a key role in determining wildfire behavior and ecosystem resilience.

For further detail on how vegetation influences modeled fire behavior in Escondido, see the Quantitative Wildfire Risk Assessment section in Chapter 3.

2.1.2.1 Chaparral

Chaparral is the most extensive vegetation type within Escondido’s WUI. It is characterized by dense, evergreen shrubs such as chamise (*Adenostoma fasciculatum*), manzanita (*Arctostaphylos* spp.), ceanothus (*Ceanothus* spp.), and scrub oak (*Quercus berberidifolia*). These communities are adapted to infrequent, stand-replacing fires with natural fire return intervals ranging from 30 to 100 years (Zedler et

al. 1983). Chaparral supports rich biodiversity and post-fire regeneration strategies, including seed banks and resprouting mechanisms.

2.1.2.2 Coastal Sage Scrub

Found at lower elevations and on south- and west-facing slopes, coastal sage scrub includes species such as California sagebrush (*Artemisia californica*), black sage (*Salvia mellifera*), and white sage (*Salvia apiana*). Historically, this community burned at intervals of 20 to 40 years (Keeley 2006; Minnich and Dezzani 1998). Coastal sage scrub is adapted to periodic fire but is highly vulnerable to conversion by invasive grasses when fire occurs too frequently, reducing native cover and habitat value.

2.1.2.3 Oak Woodland

Oak woodlands occur along foothills and valley margins and are dominated by coast live oak (*Quercus agrifolia*), Engelmann oak (*Quercus engelmannii*), and associated species such as sycamores (*Platanus racemosa*). These systems historically experienced low- to moderate-severity fires every 10 to 25 years (Stephens et al. 2007). Fire plays an important ecological role in promoting acorn germination and maintaining a diverse herbaceous understory. Extended fire exclusion can lead to denser understories and increased competition for water and light.

2.1.2.4 Riparian Corridors

Riparian areas support a mix of moisture-tolerant native vegetation, including willows (*Salix* spp.), mule fat (*Baccharis salicifolia*), cottonwoods (*Populus fremontii*), and sycamores. While native riparian plants are typically less flammable due to higher moisture content, the encroachment of nonnative species such as *Arundo donax*, *Tamarix* spp., and *Eucalyptus* increases vegetation density and alters fire behavior in these corridors (Brooks et al. 2004; Coffman et al. 2010). These areas also serve as critical habitat and migration corridors for sensitive species.

2.1.2.5 Nonnative Grasslands

Grasslands in Escondido are composed of both native perennial bunchgrasses and widespread nonnative annual grasses, including red brome (*Bromus madritensis*) and ripgut brome (*Bromus diandrus*). These communities historically experienced frequent low-intensity fires every 5 to 10 years, often due to lightning or Indigenous land stewardship (Anderson 2005). Native grasslands are typically more resilient to fire, while nonnative grasslands are prone to rapid ignition and can carry fire across the landscape more easily, especially under windy conditions.

Understanding the structure and fire ecology of these vegetation types is essential for effective land management, conservation, and community protection.

2.2 TOPOGRAPHY

Topography significantly influences fire behavior by affecting the rate and direction of fire spread. Fires tend to accelerate as they move upslope due to increased exposure to wind, preheating of fuels above the flame front, and enhanced heat transfer (National Wildfire Coordinating Group [NWCG] 2024; Pyne et al. 1996). The interaction between topography and wind plays a crucial role in wildfire dynamics. Valleys

and canyons can funnel winds, increasing wind speed and flame lengths, while ridges can alter wind patterns and create unpredictable fire behavior (Countryman 1972). In Escondido, topography further amplifies wildfire risk. Steep slopes can dramatically increase the rate of fire spread. Narrow canyons and drainage corridors concentrate heat and wind, intensifying fire behavior and making suppression more difficult, especially when the topographic features align with wind direction. These conditions are further compounded by seasonal Santa Ana winds, which funnel through the region during late summer and fall. Under these wind-driven conditions, wildfires can spread rapidly across fuel-rich landscapes and pose serious threats to developed areas (Billmire et al. 2014).

The City of Escondido, with elevations ranging from approximately 650 to 2,800 feet above mean sea level (amsl), exhibits a varied and complex topography (City of Escondido 2022). The landscape is composed of rolling inland foothills, granite outcroppings, and steep terrain dissected by a network of valleys and drainages that primarily flow southwest toward the Pacific Ocean. These contours shape local microclimates and influence vegetation distribution, fuel moisture, and fire behavior (U.S. Geological Survey 2022;John et, al 2024). This terrain supports a range of land uses, including residential, commercial, and industrial development in flatter areas, agriculture in floodplains and gentle drainages, and recreation in the open space preserves and rugged hills surrounding the city.

Resident utilizing trails (natural values) for recreation.

2.3 CLIMATE AND WEATHER PATTERNS

Escondido has a hot-summer Mediterranean climate, with increasing aridity in inland valleys and foothills, including the Escondido Valley (PRISM 2022; Western Regional Climate Center [WRCC] 2023). The city receives about 15 inches of annual precipitation, with 65% to 70% falling between December and March during cooler, frontal storm systems (National Oceanic and Atmospheric Administration [NOAA] 2023). Summers from July through September are typically hot and dry, contributing only 5% to 10% of yearly rainfall. While occasional summer thunderstorms may occur due to monsoonal moisture, significant rainfall is rare (WRCC 2023).

Located at an elevation of approximately 650 feet amsl, Escondido lies downstream of the higher Palomar and Laguna Mountains, where winter storms often bring snow above 5,000 to 7,000 feet amsl. Snowmelt and runoff from these areas affect local watersheds, influencing erosion, sedimentation, and flash flood potential.

Annual precipitation is highly variable. Wet years like 2011, 2017, 2019, and 2023 contrast sharply with drought years such as 2012–2016, 2018, and 2020–2022. This variability reflects broader Southern California climate patterns and is increasingly influenced by atmospheric rivers, narrow bands of tropical moisture that can deliver intense rainfall. A recent example is Tropical Storm Hilary in August 2023, which brought several inches of rain to inland San Diego County in under 48 hours, causing localized erosion and debris flow in foothill areas (NBC San Diego 2023).

Persistent high-pressure systems dominate Escondido's summer climate, blocking mid-latitude storms and contributing to prolonged heat and dryness. At times, monsoonal moisture from the Gulf of California can trigger brief but intense thunderstorms, which may lead to flash flooding, erosion, or lightning-induced wildfires.

To assess wildfire-related climate conditions, this CWPP references the 1991–2020 climate normals published by NOAA's National Centers for Environmental Information (NCEI), following World Meteorological Organization standards (NCEI 2021). These 30-year averages provide a stable baseline for evaluating fire season trends, fuel moisture, and ignition potential. Supplemental data from 2021–2023 are also included in Table 2.1, capturing recent variations in temperature and precipitation (California Public Utilities Commission [CPUC] 2023; WRCC n.d.). In this CWPP, *supplemental data* (U.S. Climate Data 2024) refer to observational climate data from two Escondido weather stations: NOAA's Cooperative Observer Program station ("Escondido 1") and WRCC station 042863 ("Escondido 2"), gathered via NOAA's Climate Data Online and WRCC databases. These provide a current snapshot of Escondido's climate conditions beyond the normals and reflect short-term variability that may influence fire behavior and planning decisions. This combined climate context supports seasonal fire behavior modeling, fuel treatment planning, and risk mitigation strategies throughout the CWPP.

Table 2.1. Escondido Climate Normals

Station	Period of Record	Average High Temp (°F)	Average Low Temp (°F)	Mean Annual Temp (°F)	Average Precipitation (inches)
NOAA Escondido 1 (~650 feet)	1931–1979	77	54	65	15
NOAA Escondido 2 (WRCC site, ~650 feet)	1979–2013	77	53	65	15
NOAA NCEI Climate Normals	1991–2020	77	53	65	14.7
Supplemental Data	2021–2023	78	54	66	11.7

2.3.1 Influence of Santa Ana Winds

Santa Ana winds are one of the most significant contributors to wildfire ignition, spread, and severity in Southern California, including the City of Escondido (Westerling et al. 2006). These strong, dry offshore winds typically occur between September and April, with peak activity in the fall and early winter. They are driven by high-pressure systems over the Great Basin that force air toward the coast, accelerating as it moves through mountain passes and canyons (Raphael 2003). In addition, Santa Ana conditions are characterized not only by high wind speeds and gusts, but also by extremely low humidity, which significantly elevates wildfire risk (Billmire 2014).

In Escondido, the topography of the surrounding foothills and canyons, including areas near Daley Ranch, Lake Wohlford, and the San Pasqual Valley, makes the city especially vulnerable to the effects of Santa Ana winds. As these winds descend to lower elevations, they compress and warm, which significantly lowers humidity levels and rapidly dries out vegetation (Moritz et al. 2010). This process results in extremely flammable fuels, even if conditions were relatively moist just days earlier (Dennison et al. 2008).

When combined with dry fuels, steep terrain, and dense development in the WUI, Santa Ana winds can quickly turn a small ignition into a fast-moving wildfire. Historical examples include the 2003 Cedar Fire, the 2007 Witch Creek Fire, and the 2014 Cocos Fire. Each of these fires caused significant damage in the region and were intensified by Santa Ana conditions (AlertSanDiego 2014; California Fire Coordination Group 2004; NWS San Diego 2016)

Santa Ana wind events are especially dangerous because they often occur at the end of the dry season when vegetation is already stressed. These wind patterns can also happen outside of the traditional fire season, catching communities off guard. Suppression efforts become more difficult during these events due to unpredictable wind shifts, long-distance ember transport, and rapid fire spread (Jin et al. 2015).

To prepare for these conditions, local and regional fire agencies rely on Red Flag Warnings, wind forecasting tools, and pre-positioned firefighting resources. Public outreach efforts also encourage residents to maintain defensible space, harden their homes, and be ready to evacuate when fire weather conditions are expected. Strategies for building greater preparedness and resilience in relation to Santa Ana wind events are outline in Chapter 4, Mitigation Strategies.

2.4 FIRE HISTORY

2.4.1 Past Management

Fire has historically played an important role in maintaining the health and diversity of California's ecosystems (Sugihara et al. 2006). Many of these landscapes are fire-adapted or fire-dependent. Indigenous tribes used fire intentionally to manage vegetation, promote wildlife habitat, and support ecosystem balance (Anderson 2005; Lake and Long 2014). The arrival of European settlers in the 1800s, however, brought about strict fire suppression policies that disrupted these traditional practices and altered natural fire cycles.

In many forested ecosystems, prolonged fire exclusion has led to unnatural fuel accumulation and increased fire severity. The chaparral-dominated landscapes of Southern California, including those around Escondido, face a different challenge related to excessive fire frequency. These shrublands evolved with infrequent, high-intensity fires at intervals of 30 to 100 years (Fotheringham 2001). When fires occur too frequently, the native shrub community cannot recover, and flammable, fast-spreading nonnative grasses can invade and dominate the landscape (D'Antonio and Vitousek 1992; Zedler et al. 1983).

As a result, wildfire resilience strategies in Escondido must emphasize fire prevention, ignition reduction, structural hardening, and targeted suppression (California Wildfire and Forest Resilience Taskforce 2025). Prescribed burning is less appropriate in these areas because it can accelerate vegetation type conversion in sensitive habitats.

2.4.2 Recent Fire Occurrence

Escondido and nearby communities are highly vulnerable to wildfire due to steep surrounding terrain, flammable native (and nonnative) vegetation, development along the WUI leading to an increased presence of humans, and recurring Santa Ana wind events (City of Escondido 2025b; Moritz et al. 2010).

In 2003, the region experienced two major fires: the Cedar Fire and the Paradise Fire (CAL FIRE 2023a; 2023b). Together, these fires burned more than 300,000 acres across San Diego County, destroyed approximately 2,500 homes, and caused 17 fatalities. They also forced the evacuation of hundreds of thousands of residents. These fires were pushed westward by strong Santa Ana winds, which funneled flames from rural canyons deep into urban neighborhoods (CAL FIRE 2003a; CAL FIRE 2003b).

The Witch Creek Fire in 2007 remains one of the most destructive wildfires in California history. It ignited east of Escondido and spread rapidly, burning nearly 198,000 acres and entering Escondido city limits. The fire destroyed over 1,100 homes, injured 40 firefighters, and caused the deaths of two civilians (CAL FIRE 2025b; CAL FIRE 2007). Historical wildfire occurrences within Escondido's municipal boundary are shown in Figure 2.2.

In 2014, the Cocos Fire ignited near San Marcos and quickly spread into western Escondido. The fire burned nearly 2,000 acres and destroyed more than 40 structures, many of them homes (CAL FIRE 2015). This event further highlighted the speed at which fires can move into developed areas under dry and windy conditions.

Escondido Fire Department fire management and suppression operations.

2.4.3 Ongoing Challenges

In January 2025, Southern California experienced an unprecedented winter fire event. Numerous fires, including the Palisades Fire and Eaton Fire, burned more than 37,000 acres, destroyed over 17,000 structures, and led to the evacuation of at least 170,000 people (CAL FIRE 2025d, 2025f). These fires were driven by a combination of prolonged drought, heavy brush and grass growth from earlier rains, record-strength Santa Ana winds, and an unstable jet stream pattern (CAL FIRE 2025c, 2025d). Winter wildfires are historically rare in Southern California, but this event has increased concern that wildfire is now a year-round threat. In response, state lawmakers called for year-round staffing for firefighting agencies (CA WFRTF 2024).

Escondido is especially at risk under similar conditions. Repeated droughts followed by rainy periods have allowed grass and shrublands to flourish, only to dry out and become hazardous fuels during hot, windy periods. Further, shortened fire return intervals (more frequent fire occurrences) have caused changes in the natural vegetative structure, leading to reduced fire resilience and potentially greater ignitability (Keeley and Brennan 2012; Syphard et al. 2019). The city's foothill areas are particularly vulnerable when downslope Santa Ana winds pass through eastern San Diego County. Homes near undeveloped and densely vegetated open space, especially those with limited defensible space or heavy volumes of combustible material, face increased exposure to potential ignitions from flames and embers (CAL FIRE 2022; National Fire Protection Association [NFPA] 2023).

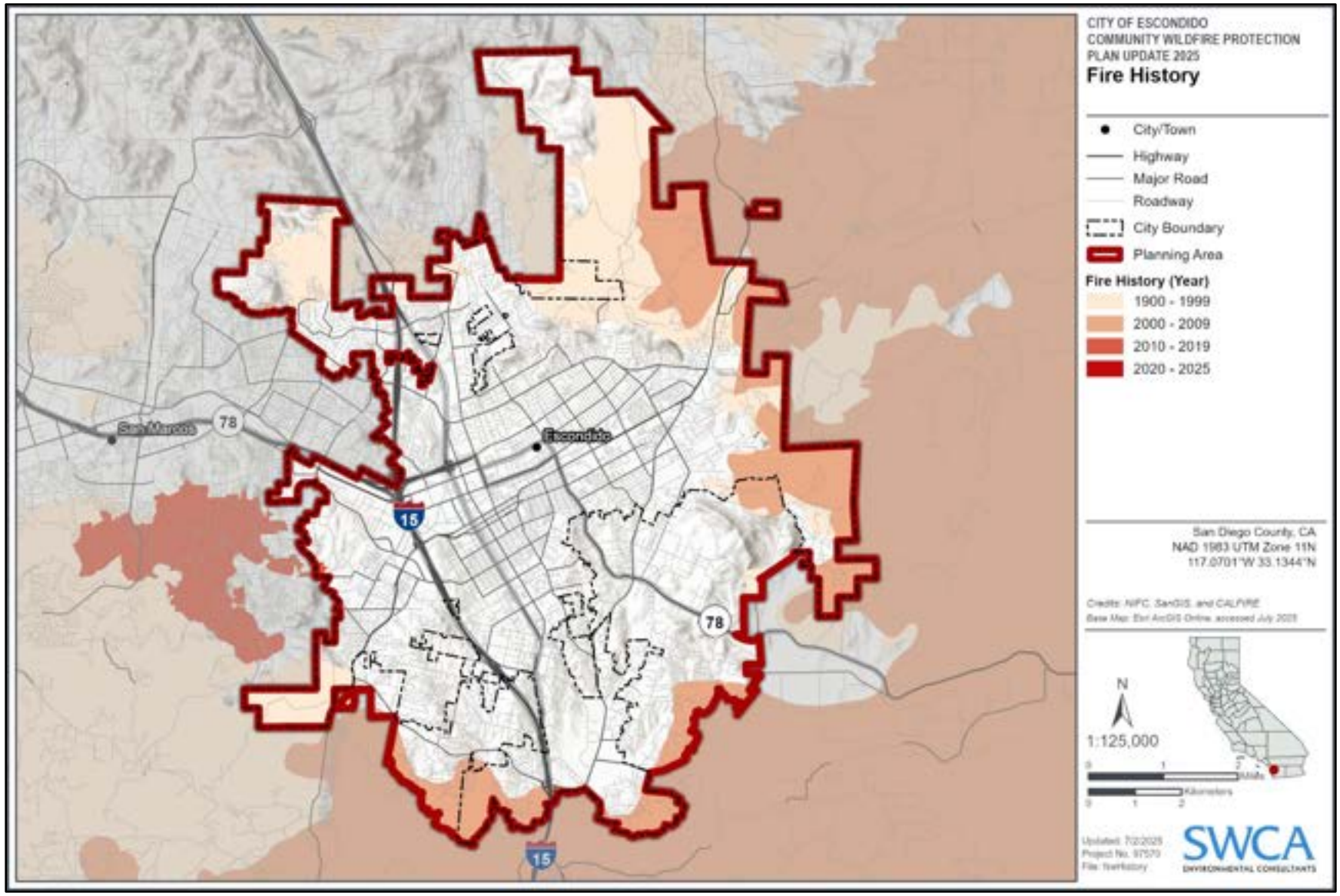


Figure 2.2. City of Escondido fire perimeter history, 1900 through 2025.

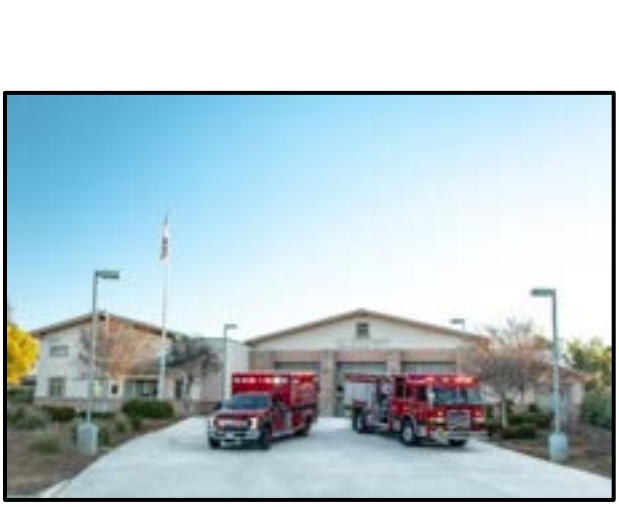
2.5 FIRE RESPONSE CAPABILITIES

Fire protection services in Escondido are primarily provided by the Escondido Fire Department, which serves the incorporated city limits. Surrounding unincorporated areas, including rural and semi-rural communities, are served by the Rincon del Diablo Fire Protection District (FPD). Rincon del Diablo FPD contracts with the Escondido Fire Department for full fire and emergency medical service coverage, creating a unified response area of approximately 50 square miles across city and adjacent lands (Rincon del Diablo FPD 2024) (see Figure 2.3).

Rincon del Diablo Municipal Water District plays a key administrative and logistical role in supporting the Rincon del Diablo FPD. The water district is the legal governing authority for the fire district and manages administrative functions such as budgeting, contracting, and infrastructure planning. This relationship enables integrated coordination between water supply systems and fire protection services, which is especially critical for maintaining reliable hydrant networks, ensuring water availability, and supporting long-term emergency planning in the wildland-urban interface.

Both agencies are responsible for wildfire prevention, suppression, and emergency response within their jurisdictions. They share training resources, collaborate on pre-fire planning, and operate under a joint fire service model that enhances response capabilities across the region.

Figure 2.4 outlines the fire protection districts that surround the planning area.



2.5.1 Interagency Coordination

The Escondido Fire Department and Rincon del Diablo FPD operate within a broader fire protection framework that divides land into Local, State, and Federal Responsibility Areas. Most of the planning area falls within State Responsibility Areas (SRAs), where the California Department of Forestry and Fire Protection (CAL FIRE) is the lead agency for wildland fire protection (CAL FIRE 2023c; Escondido Public Library 2017). Coordination between the Escondido Fire Department, Rincon del Diablo FPD, CAL FIRE, the U.S. Forest Service (USFS), and the San Diego County Fire Protection District is supported by mutual aid agreements and participation in regional response systems (Cal OES 2014; San Diego County 2022).

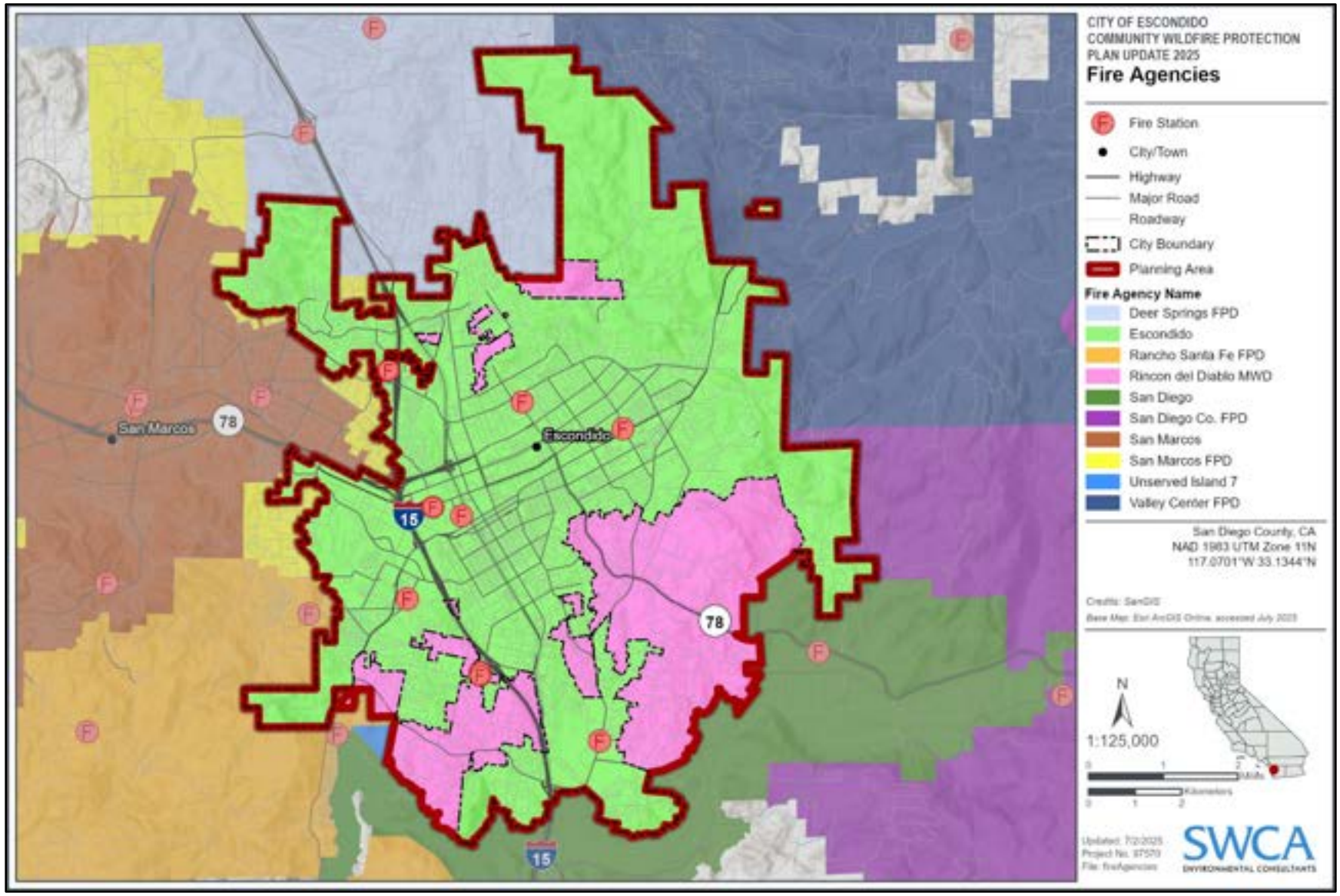


Figure 2.3. Fire agencies in and around Escondido.

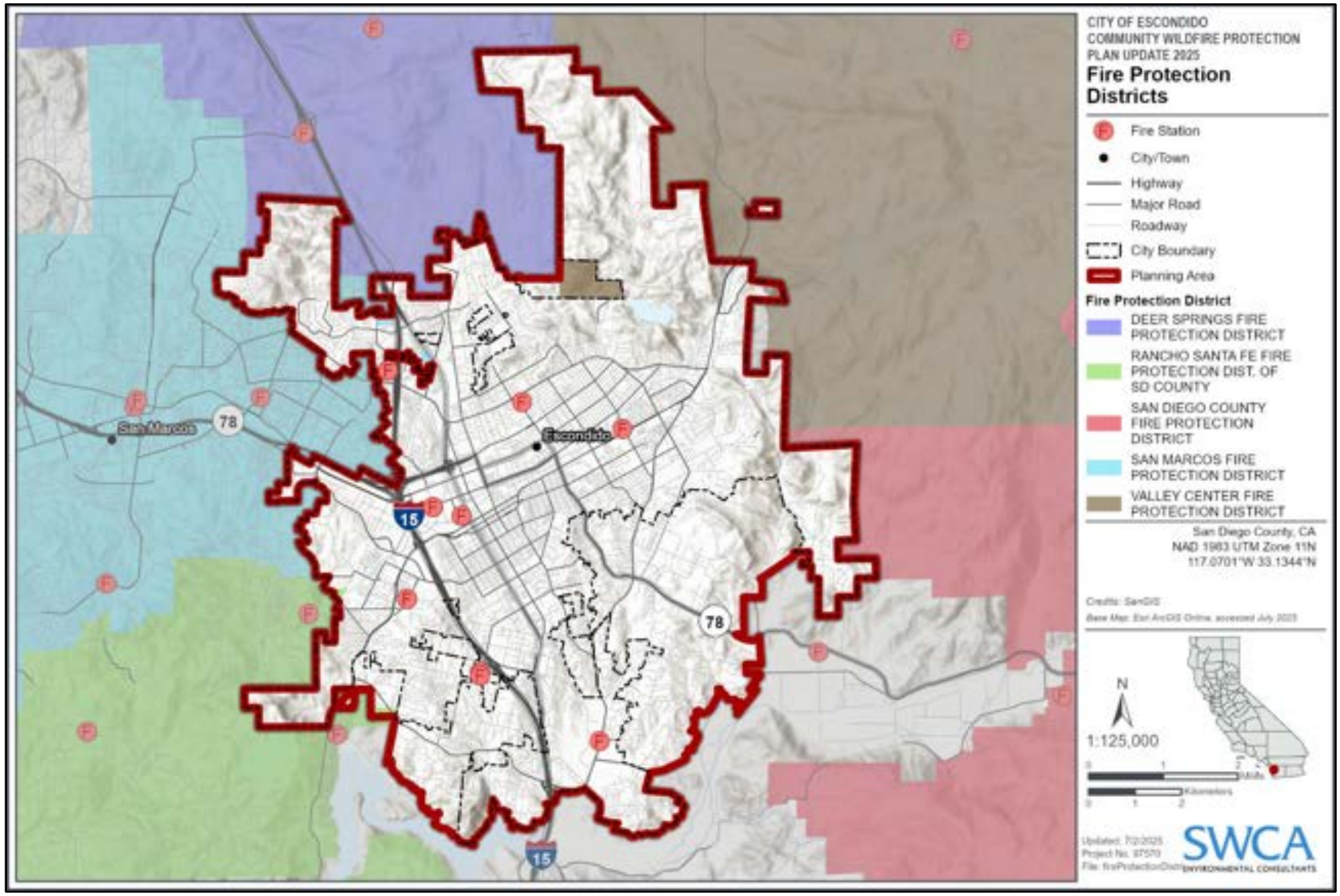


Figure 2.4. Fire protection districts in Escondido.

These agreements ensure that personnel and equipment can be deployed rapidly during major incidents, improving efficiency and safety across jurisdictional boundaries.

2.5.2 State Response

The CAL FIRE San Diego Unit provides wildfire suppression, prevention, and resource management in SRAs surrounding Escondido. CAL FIRE operates a network of fire stations, air bases, and conservation camps and works closely with local and federal partners. In addition to suppression, the CAL FIRE San Diego Unit supports:

- Vegetation management and fuel break construction
- Prescribed fire planning and implementation
- Defensible space inspections and enforcement
- Fire prevention grants and community outreach
- Public education campaigns such as Ready, Set, Go! and Firewise USA®

CAL FIRE also provides support for incidents in Local Responsibility Areas (LRAs) and Federal Responsibility Areas (FRAs) through established cooperative agreements (CAL FIRE 2025j).

2.5.3 Federal Response

Approximately 41 acres of BLM land in or near Escondido fall under FRA jurisdiction. Wildfire response and land management on these parcels are overseen by BLM and USFS. Although limited in size, these lands are located near high-risk areas such as the San Pasqual Valley and Lake Wohlford and require close coordination with CAL FIRE and local agencies.

Under cooperative fire agreements, CAL FIRE typically leads initial attack when wildfires affect multiple jurisdictions. Federal resources provide scalable support during extended or complex incidents and contribute to the region's overall wildfire readiness (San Diego County 2025).

2.5.3.1 Aerial Water Sources and Support

Aerial firefighting plays a critical role in suppressing wildfires in difficult terrain or during rapid fire spread. Helicopters and fixed-wing aircraft provide valuable support for initial attack and structure defense, especially when ground access is limited.

Helicopters may collect water from a variety of sources, including:

- Local reservoirs and lakes such as Lake Wohlford, Lake Dixon, and Lake Hodges
- Creeks, ponds, and riparian areas, provided they are accessible and safe for dipping
- Portable dip tanks staged near the fire line and supplied by water tenders

All helicopter dip sites must be large, deep, and free of obstructions to ensure safe operations. These locations are vetted and approved by aerial supervisors prior to use.

Fixed-wing airtankers are typically loaded at dedicated air attack bases with water, gel, or long-term fire retardant. The Ramona Air Attack Base, approximately 25 miles southeast of Escondido, is the closest base supporting CAL FIRE airtankers and air attack aircraft. This is the oldest airtanker base in California and remains the primary site for rapid aerial response in the region (KPBS 2025; San Diego County 2025).

During large-scale incidents, additional aircraft may be deployed from:

- Hemet-Ryan Air Attack Base
- San Bernardino Tanker Base
- March Air Reserve Base, Victorville, or McClellan Reload Base for Very Large Airtankers (VLATs)

Temporary helibases may also be established near active fires to reduce turnaround times and improve logistical support for helicopter operations.

2.5.3.2 Aerial Firefighting Agencies

Aerial firefighting in Escondido and the greater San Diego region is primarily managed by CAL FIRE's San Diego Unit Aviation Program. CAL FIRE operates a mixed fleet of aircraft, including:

- Helicopters, such as Bell UH-1H Super Hueys and Sikorsky S-70i Firehawks
- Fixed-wing airtankers and OV-10 Bronco air attack aircraft

These resources are deployed from Gillespie Field Helitack Base in El Cajon and Ramona Air Attack Base, depending on fire behavior and aircraft availability. In addition to CAL FIRE, the San Diego County Sheriff's Office Aviation Unit (ASTREA) may assist with water bucket operations from helicopters based at Gillespie Field, especially for localized support.

All aerial operations are coordinated through CAL FIRE San Diego Unit in partnership with the Federal Interagency Communication Center (CAL FIRE 2025b). The assignment of aircraft and selection of water sources depend on fire location, terrain, weather conditions, and operational priorities (CAL FIRE 2025a).

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CHAPTER 3 RISK-HAZARD ASSESSMENT

3.1 PURPOSE

The completion of a Quantitative Wildfire Risk Assessment (QWRA) provides land use managers, fire officials, and planners with critical information to develop targeted strategies for reducing wildfire threats. This assessment not only informs land use and mitigation planning efforts but also supports outreach and education initiatives to engage community members in minimizing fire-related risks. For this CWPP update, areas of high wildfire hazard and risk are identified using the QWRA process through the modeling of fire behavior, burn probability, and fire intensity, along with evaluating the exposure and susceptibility of structures, critical infrastructure, and HVRAs.

Stakeholder and expert input further guide the QWRA process, ensuring recommended fuel treatments are prioritized according to wildfire risk. For further details on fuels treatments and other risk reduction activity, refer to Chapter 4 (Mitigation Strategies) and Appendix G (Pre-Fire Fuel Treatment Types and Methods).

The QWRA provides a community- and landscape-level overview of wildfire risk and is not intended 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 QWRA is a model, and as such contains 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 may still be affected by wildfire under certain conditions. This QWRA 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 QWRA be used for any other purpose than what is stated here.

In addition to the desktop QWRA, this CWPP also leverages a field wildfire hazard and risk assessment, completed in July 2025, which is discussed below and in Appendix C.

3.2 FIELD-BASED COMMUNITY HAZARD ASSESSMENTS

Community Hazard Assessments were conducted in July 2025 using an adapted version of the NFPA Wildland Fire Risk and Hazard Severity Form 1144 (see Appendix C). This form is based on the *NFPA Standard for Reducing Structure Ignition Hazards from Wildland Fire*, 2013 edition. The purpose of the Community Hazard Assessment and subsequent ratings is to identify fire hazard 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 supports recommendations for mitigation of structural ignitability, community preparedness, and public education.

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. Each score was given a corresponding adjective qualitative rating of low, moderate, high, or extreme (Table 3.1).

Table 3.1. Field-Based Community Hazard Assessment Summaries

Community Name	Total Risk Score	Hazard Rating
Avenida Del Diablo/Quail Glen/Del Dios Highlands	65%	High
El Norte Hills/Eureka/La Honda/Lake Wohlford/Dixon	60%	Moderate
Emerald Heights/High Point/Country Club	60%	Moderate
Hidden Trails	58%	Moderate
Idaho East/Rancho San Pasquel/Mountain View/Orange Glen	64%	High
Iris	64%	High
Kauana Loa	60%	Moderate
Lake Hodges/Lomas Serenas	68%	High
Summit/Ryan/Sonata	68%	High
Kit Carson Park	62%	Moderate
Rincon/North Broadway	60%	Moderate

Note: More detailed information is provided in Appendix C.

3.3 EXISTING INFORMATION

3.3.1 California Fire Hazard Severity Zones

In accordance with the 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). In 2025, CAL FIRE released updated FHSZ maps for LRAs. These maps guide city development

standards by increasing requirements for new buildings to include fire-resistant features and defensible spaces in high-risk areas. New construction in these zones must comply with ignition-resistant standards, and property sellers must disclose hazard designations during real estate transactions. While the maps won't affect insurance coverage, the City Council must adopt them through an ordinance (California Department of Insurance [CDI] 2021; City of Escondido 2025c).

The updated CAL FIRE FHSZ mapping (Figure 3.1) indicates that the vast majority of undeveloped WUI areas along the perimeter of the city are classified as Moderate, High, or Very High FHSZ. The northern border predominantly falls under the Very High hazard category, transitioning to a mix of High and Moderate zones toward the city's urban core. In contrast, the eastern and western borders of the city form a more continuously developed corridor that is unrated (not marked as Moderate, High, or Very High hazard). Meanwhile, the southern city border is largely designated as Very High hazard, interspersed with enclaves of additional Very High, High and Moderate zones, surrounded by developed areas with lower, undesignated hazard levels

It should be understood that FHSZs assess wildfire hazard, not risk. According to CAL FIRE, "hazard" reflects the likelihood and expected fire behavior based on physical conditions, while "risk" considers the potential damage under current conditions, including mitigation measures. While FHSZs are useful for assessing hazards, this CWPP goes further by evaluating both hazard and risk to better guide fire planning and mitigation efforts across the city.

3.3.2 California Public Utilities Commission (CPUC) Fire Threat Mapping

The California Public Utilities Commission (CPUC) fire threat mapping was developed to identify areas of elevated wildfire risk specifically for utility planning and risk reduction activities. Created in collaboration with CAL FIRE, emergency services, utilities, and other stakeholders, the map divides utility service territories into three risk tiers: Tier 1 (Acceptable), Tier 2 (Elevated), and Tier 3 (Extreme). These tiers are used to guide where enhanced fire safety regulations and mitigation measures are required. Figure 3.2 shows that small portions along the northern and western perimeters of the city are designated as Tier 3 threat zones. A larger portion of Tier 2 threat areas are found surrounding the city's perimeter in all directions except the continuous urban band along State Route 78. There are no Tier 1 threat zones in the planning area.

While the CPUC fire threat map includes some elements of wildfire risk, it is narrowly focused on the potential for utility infrastructure, such as overhead power lines, to ignite and contribute to wildfires. As such, the map's risk designations are directly tied to the presence and operation of utility assets, rather than providing a comprehensive assessment of wildfire risk to broader community values or natural resources. This targeted approach ensures that utilities prioritize risk reduction where their infrastructure poses the greatest threat, but it may not fully address wildfire risks in areas without utility infrastructure or where other values are at stake (CPUC 2025a, 2025b).

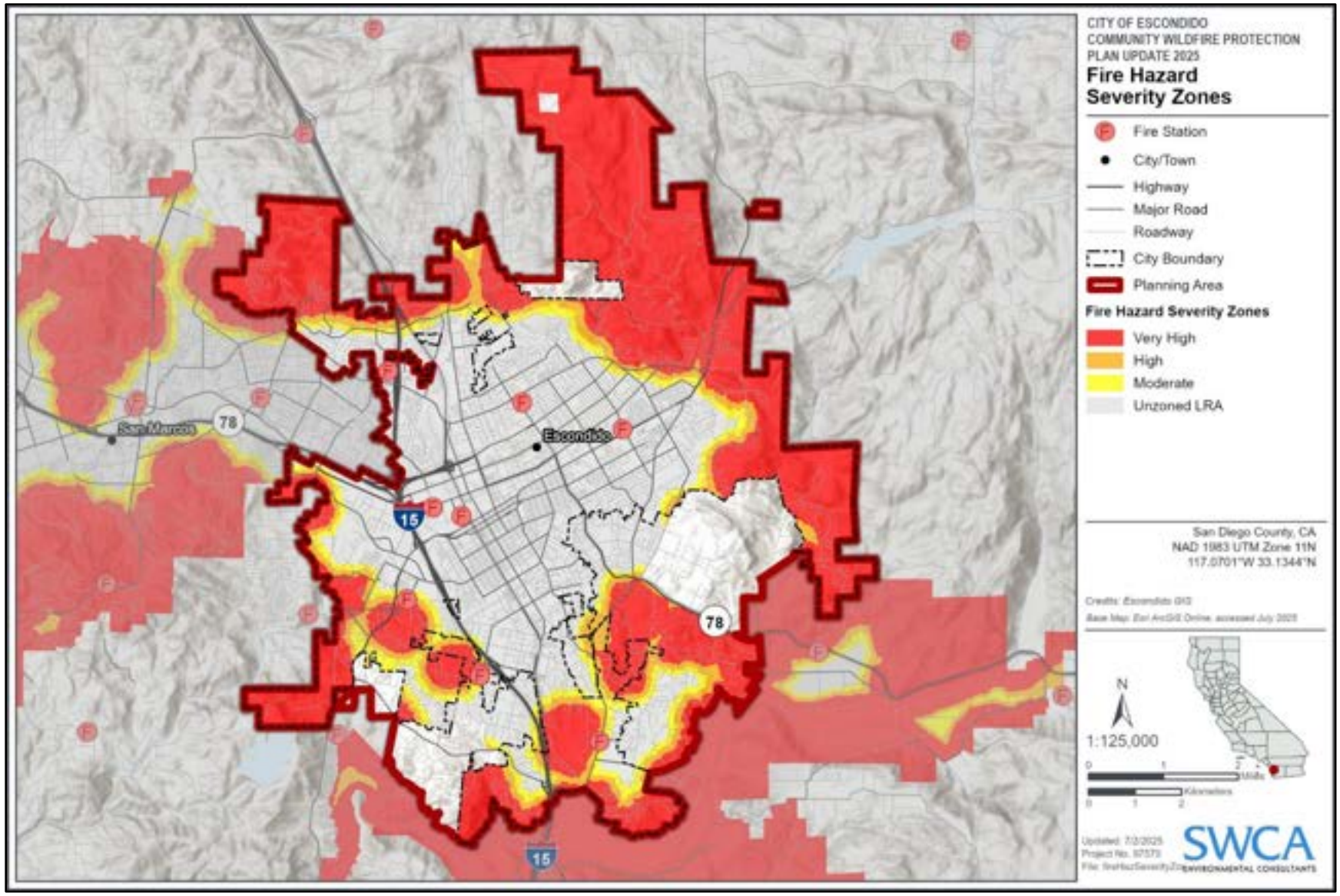

Figure 3.1. Local Responsibility Area (LRA) / Fire Hazard Severity Zones (FHSZ) in the City of Escondido CWPP planning area.

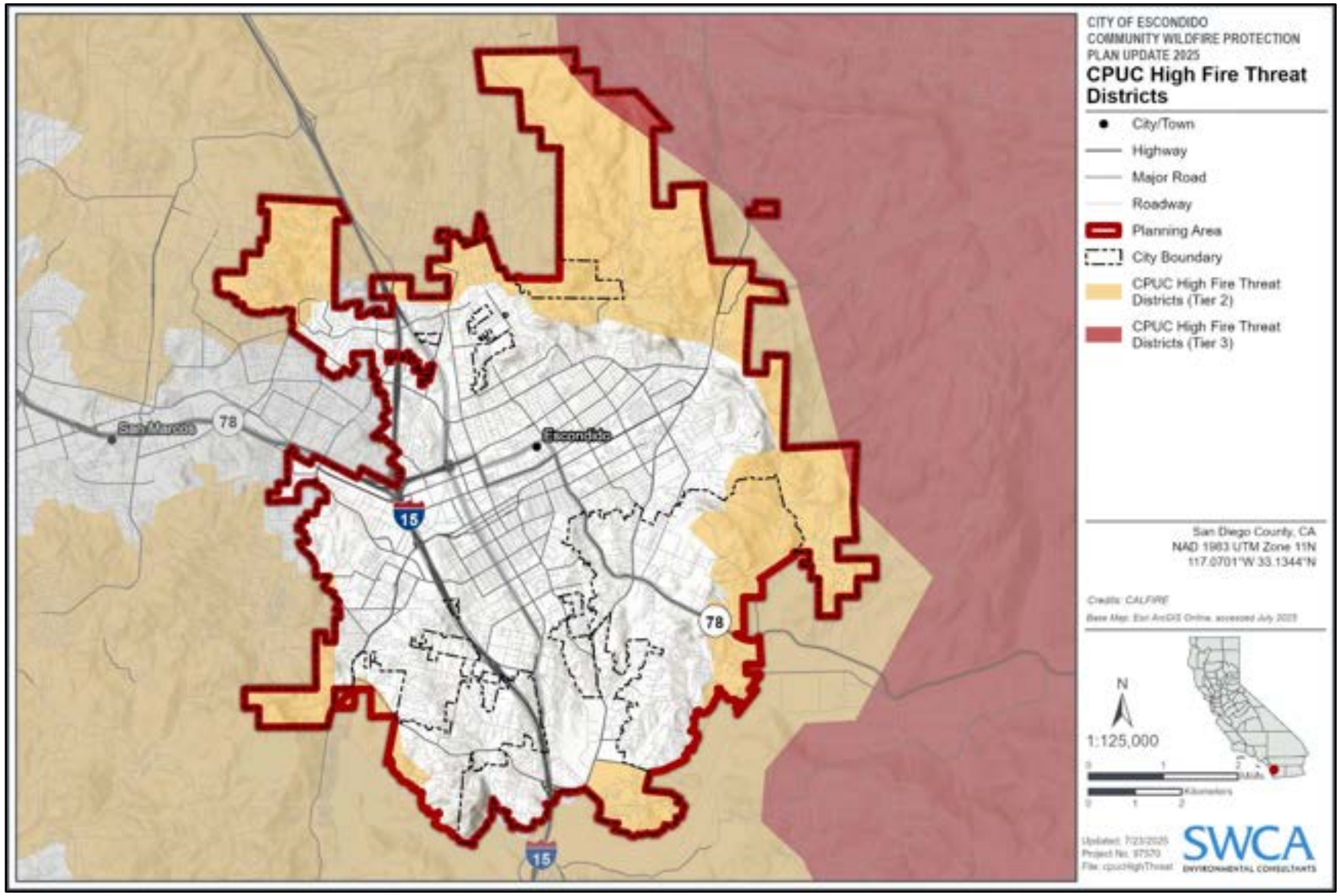

Figure 3.2. Tier 3 threat zones for the City of Escondido CWPP planning area.

3.3.3 Assessing Hazards vs. Risk

SWCA's QWRA evaluates key factors such as flame length (intensity), burn probability, buildings, and HVRAs. Flame length is modeled by analyzing vegetation type, density, and condition; topography, including slope, aspect, and elevation; and meteorological conditions like wind, temperature, and humidity. Burn probability is generated by running thousands of simulations, considering ignition locations, fire size, weather patterns, fuel types, and topography. These flame length and burn probability outputs represent hazards, while buildings and HVRAs represent exposed values or "assets at risk."

This QWRA categorizes the landscape into four risk levels: Low, Moderate, High, and Very High. In comparison, CAL FIRE's FHSZs reflect vegetation, topography, and weather patterns to indicate burn likelihood and potential fire behavior, ranging from Moderate to Very High hazard levels. Updated FHSZs incorporate land use changes, recent fire history, new wind data, and local climate information (CAL FIRE 2023.

The primary distinction between SWCA's QWRA and CAL FIRE's FHSZs is that FHSZs assess only wildfire hazard, while SWCA's QWRA accounts for both hazard and the likelihood of resulting damage (risk).

While the CPUC fire threat district mapping incorporates risk, it does not provide the level of comprehensive risk to structures and values discussed within the SWCA QWRA.

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

3.4 QUANTITATIVE WILDFIRE RISK ASSESSMENT

3.4.1 FRAMEWORK

The QWRA is a specialized tool for evaluating the risk that wildland fires pose to communities within the city. In this context, risk is defined as a combination of hazard and vulnerability (Figure 3.3). For the purposes of this document, risk is conceptualized using four key factors within the QWRA Framework (Scott et al. 2013):

- **Burn Probability**: The likelihood of a 30-square-meter pixel burning within a specified time period.
- **Intensity**: The rate of energy release during combustion, which can be measured by flame length, a direct indicator of fire intensity.
- **Exposure**: The proximity of HVRA to hazards within the landscape, such as homes located in the WUI.
- **Susceptibility**: The degree to which HVRA are likely to be damaged by wildfire.

Figure 3.3. QWRA Framework.
Derived from Scott et al. (2013).

3.4.2 Process Overview

Flame length (intensity) and burn probability were assessed using established models including FARSITE, FlamMap, BehavePlus, and FireFamily Plus, integrated within the Interagency Fuel Treatment Decision Support System (IFTDSS) and processed through ArcGIS Pro Spatial Analyst tools. The QWRA data were sourced primarily from LANDFIRE and supplemented by additional local datasets as available (LANDFIRE 2023).

SWCA generated a landscape file for the city in IFTDSS, with Core Team input guiding the refinement of fuel models, response functions, and relative importance values, resulting in tailored fire behavior outputs and risk scoring. The datasets, including flame lengths, building footprints (on-the-ground perimeter occupied by a building's exterior walls), HVRAs, and burn probability, were processed and reclassified in ArcGIS Pro. The raster calculator in ArcGIS Pro then produced the Conditional Net Value Change (cNVC) and Expected Net Value Change (eNVC) risk outputs, with the eNVC serving as the final risk layer in the QWRA. The cNVC evaluates wildfire impacts to values under the assumption that a fire occurred (i.e., it assumes 100% probability), whereas the eNVC evaluates the likelihood of impacts to values based on fire probability (IFTDSS n.d.(a)), making it is a valuable tool for prioritizing mitigation measures in areas with the highest potential for wildfire related losses.

3.4.3 Data Collection

The spatial data required for this QWRA are summarized in Table 3.2. It's important to note that burn probability considers factors such as landscape characteristics (e.g., topography and fuels), weather conditions (e.g., humidity and wind), and historical ignition patterns. Similarly, flame length calculations incorporate fuel types, topography, and weather conditions.

Table 3.2. Spatial Data Inputs for the QWRA

Inputs	Source	Type/Subtype
Burn Probability	• IFTDSS, LANDFIRE	Hazard/Probability
Flame Length	• IFTDSS, LANDFIRE	Hazard/Intensity
Critical Infrastructure HVRAs	• Natural Gas Pipelines EIA (Energy Information Administration) • Transmission Lines EIA • Cellular Towers Federal Communication Commission (FCC) • Power Plants EIA • Substations Homeland Infrastructure Foundation-Level Data (HIFLD)	Vulnerability/Exposure
Building Footprint HVRAs	• Microsoft	Vulnerability/Exposure

3.4.3.1 Identification of Hazards and Vulnerability

Fuels

Accurate prediction of wildfire behavior depends fundamentally on the characterization of surface fuels, which serve as the primary input for mathematical fire spread models. The USFS's Rocky Mountain Research Station has developed a comprehensive set of standard fire behavior fuel models. These models provide a consistent framework for describing the properties of wildland fuels, including load, size, arrangement, and moisture content, across a wide array of vegetation types and environmental conditions.

The fuel models are broadly described under the following acronyms, which have specified fuel codes to represent more specific fuel types:

- **NB** – **Nonburnable:** Areas with insufficient wildland fuel to carry fire (e.g., urban, water, bare ground).
- **GR** – **Grass:** Areas where grass is the primary carrier of fire.
- **GS** – **Grass-Shrub:** Areas with a mix of grass and shrubs, both contributing to fire spread.
- **SH** – **Shrub:** Areas dominated by shrub vegetation as the main fuel.
- **TU** – **Timber-Understory:** Forested areas where surface fuels include a mix of litter, grass, and/or shrubs beneath trees.
- **TL** – **Timber Litter:** Forested areas where dead and down woody material (litter) is the primary surface fuel.
- **SB** – **Slash-Blowdown:** Areas with heavy dead and down woody debris, often from logging (slash) or wind events (blowdown).

Most of the Escondido CWPP planning area (53.5%) is classified as NB1, representing urban or developed zones, such as roads, buildings, and other infrastructure, primarily within the city center and major corridors. While these do not support wildland fire spread in existing fire behavior models, they can contribute to destructive urban fires. GS2 (13.4%), moderate grass-shrub fuels, are mainly found on the

city's northern and eastern outskirts, where dry grasses and shrubs dominate. SH5 (10.2%), consisting of dense, dry-climate shrublands, occurs in patches along the city's boundary, especially in undeveloped foothills and canyons. GS1 (8.9%), sparse grass-shrub, appears in scattered locations, typically along the urban-wildland edge where grass cover is patchy. GR2 (5.3%), continuous grasslands, are found in open areas, especially to the southeast and southwest of the city. The remaining 8.7% is a mix of other grass, shrub, timber-understory, and timber litter models, occurring in smaller pockets throughout the planning area (Scott and Burgan 2005).

Table 3.3 and Figure 3.4 present tabular and geographically referenced data for the modeled fuel types within the Escondido CWPP planning area.

Table 3.3. Fuel Model Types, Acreages, and Percentages of Planning Area

Fuel Model	Fuel Model Name	Acres within Planning Area	Percent of Planning Area
NB1	Urban/Developed (Nonburnable)	16,526.45	53.52%
GS2	Moderate Load, Dry Climate Grass-Shrub	4,135.13	13.39%
SH5	High Load, Dry Climate Shrub	3,135.03	10.15%
GS1	Low Load, Dry Climate Grass-Shrub	2,749.70	8.90%
GR2	Low Load, Dry Climate Grass	1,640.86	5.31%
Other	**(all remaining fuel types combined)**	**2,694.55**	**8.73%**

Source: Scott and Burgan (2005)

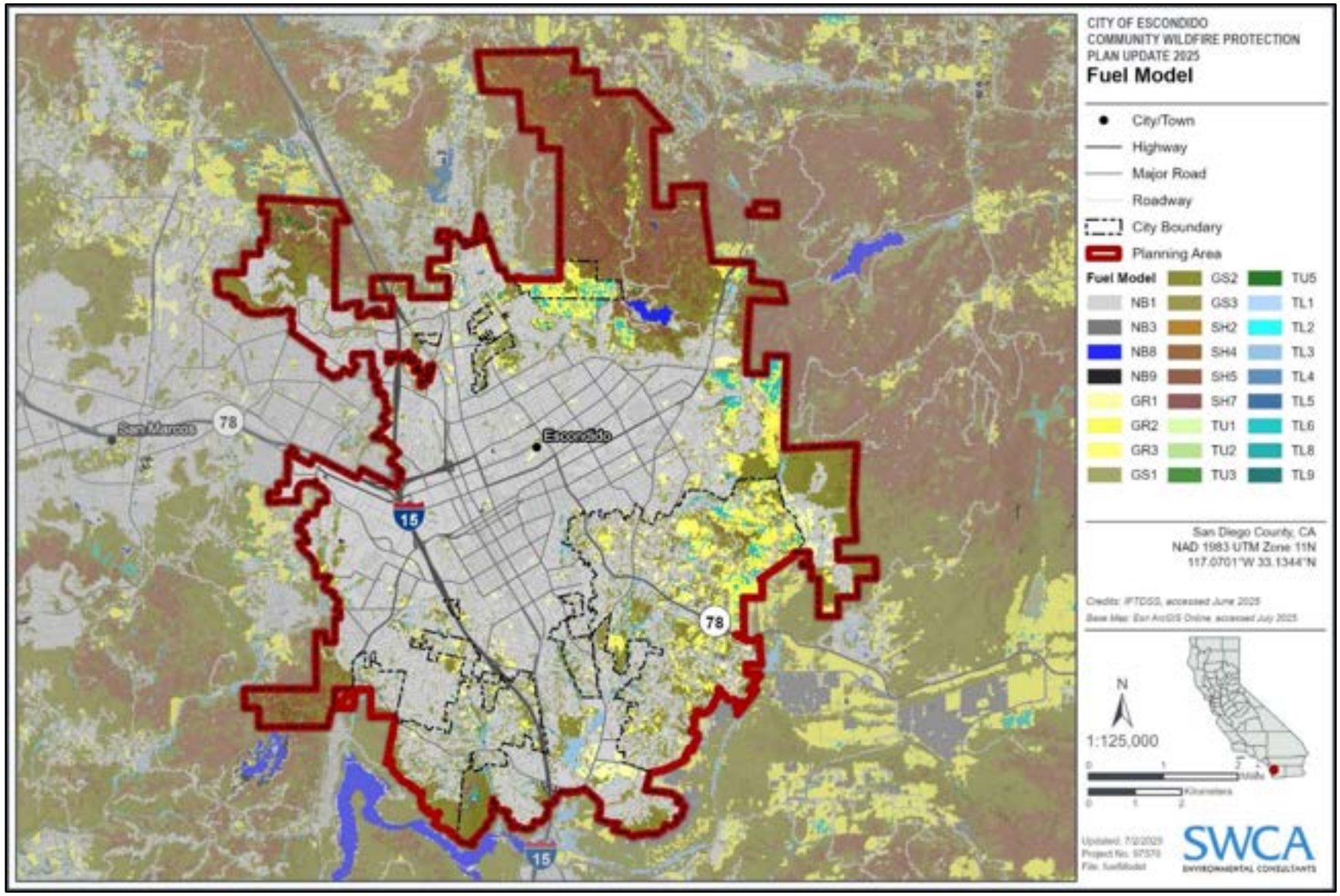

Figure 3.4. Fire behavior fuel models throughout the Escondido CWPP planning area.

Burn Probability

Burn probability considers several factors, including fire size, frequency, rate of spread, and weather conditions (IFTDSS n.d.(b)). Figure 3.5 illustrates the likelihood of a specific location on the landscape burning, which is represented as burn probability. For example, a 20% burn probability means that one in five ignitions under very high fire danger conditions would reach and burn that location.

Within the city limits of Escondido, the burn probability distribution indicates that the urban core is largely classified as nonburnable due to dense development and limited vegetation. Notably, this represents a limitation in existing wildfire behavior models that they do not consider urban fuels to be burnable, even though recent fires demonstrate the potential for fire to transition from wildland to urban fuels. Therefore, the model was adapted with a .25 miles buffer around building footprints to more accurately consider risk to structures. Toward the city's edges, particularly in the southern, eastern, and northeastern peripheries, the probability of wildfire increases. These peripheral areas are primarily classified within the lowest (0%–20%) and lower (20%–40%) burn probability categories. The middle (40%–60%), higher (60%–80%), and highest (80%–100%) burn probability zones are mostly outside the city boundary, although they are important to consider due to connective fuels that could facilitate fire spread into the city limits.

Flame Length

Flame lengths are determined by fuels, weather, and topography. Flame length is a measure of the intensity of the hazard in the QWRA equation. Direct attack by hand crews is usually limited to flame lengths less than 4 feet. For flames between 4 and 8 feet, indirect suppression (dozers, engines, etc.) is the dominant tactic. In excess of 8 feet, control efforts will be extremely challenging (USFS 2011)

Figure 3.6 illustrates the flame length classifications for the City of Escondido.

Similar to the burn probability maps, within the city limits of Escondido, the flame length distribution shows that the central, urbanized areas are predominantly classified as nonburnable. Moving outward toward the city's periphery, particularly along the southern, eastern, and some northern boundaries, flame lengths begin to increase. Most of these peripheral areas fall within the >0–1-foot and >1–4-foot flame length categories, with some sections reaching >4–8 feet, especially where there is more natural vegetation. The highest flame lengths (>8 feet, and especially >11–25 feet or >25 feet, indicated by orange and red) are generally along city boundary, though there are several large patches exhibiting elevated modeled flame lengths, particularly in the Lake Dixon/Daley Ranch, Emerald Heights, and Del Dio Highlands County Preserve areas.

Vulnerability

RESPONSE FUNCTIONS

Response functions (RFs) measure the susceptibility of HVRAs to wildfire, indicating how fire affects these resources based on fire intensity (IFTDSS n.d.(c)). Defined by experts, RFs assign a relative value change score ranging from -100 to +100, where -100 represents significant loss and +100 denotes substantial benefit. The RFs assigned to each HVRA are based on flame length classes, which represent different levels of fire intensity. Generally, the longer the flame length, the higher the intensity and the flame's impact to structures and HVRAs.

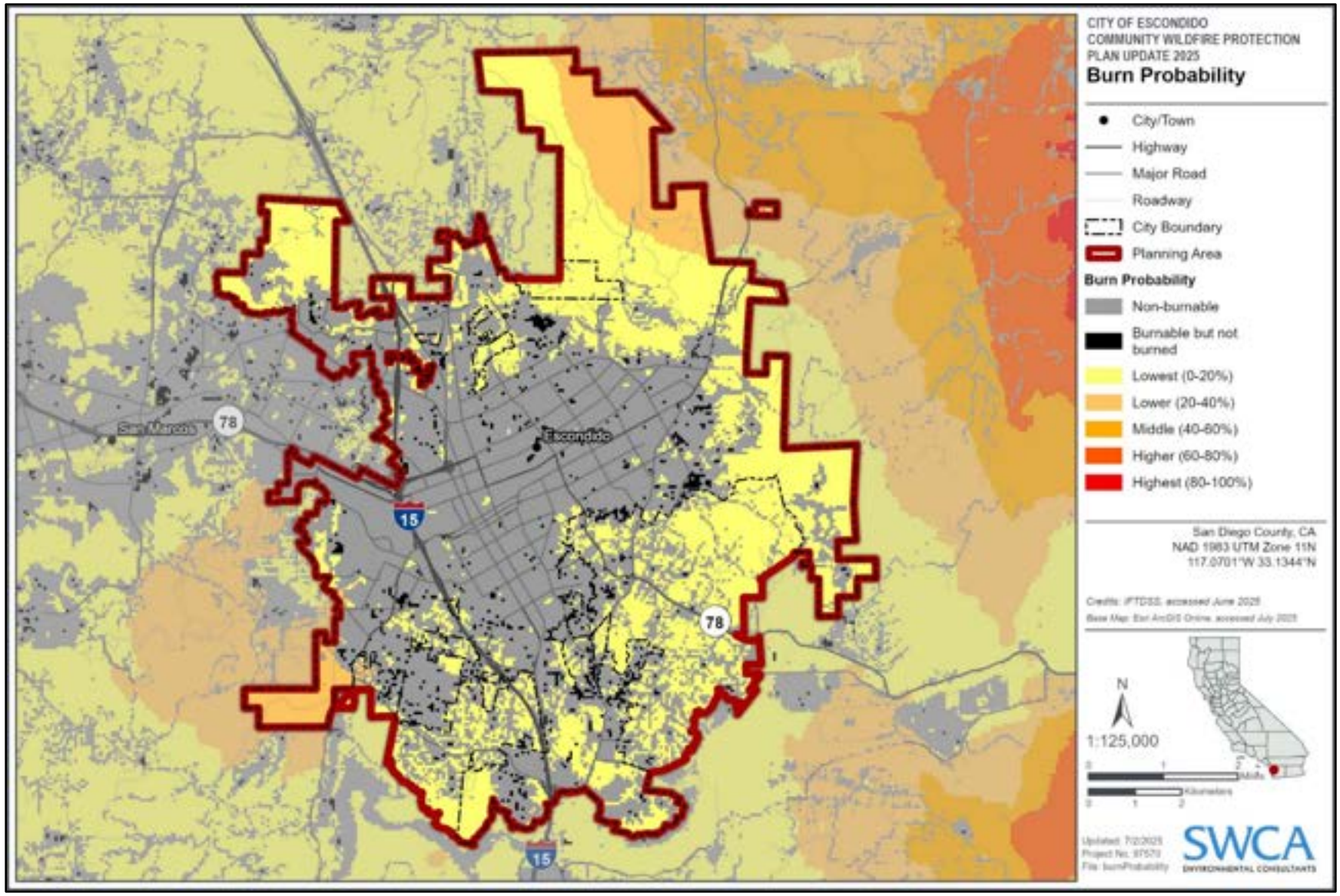

Figure 3.5. Burn probability in the City of Escondido CWPP planning area.

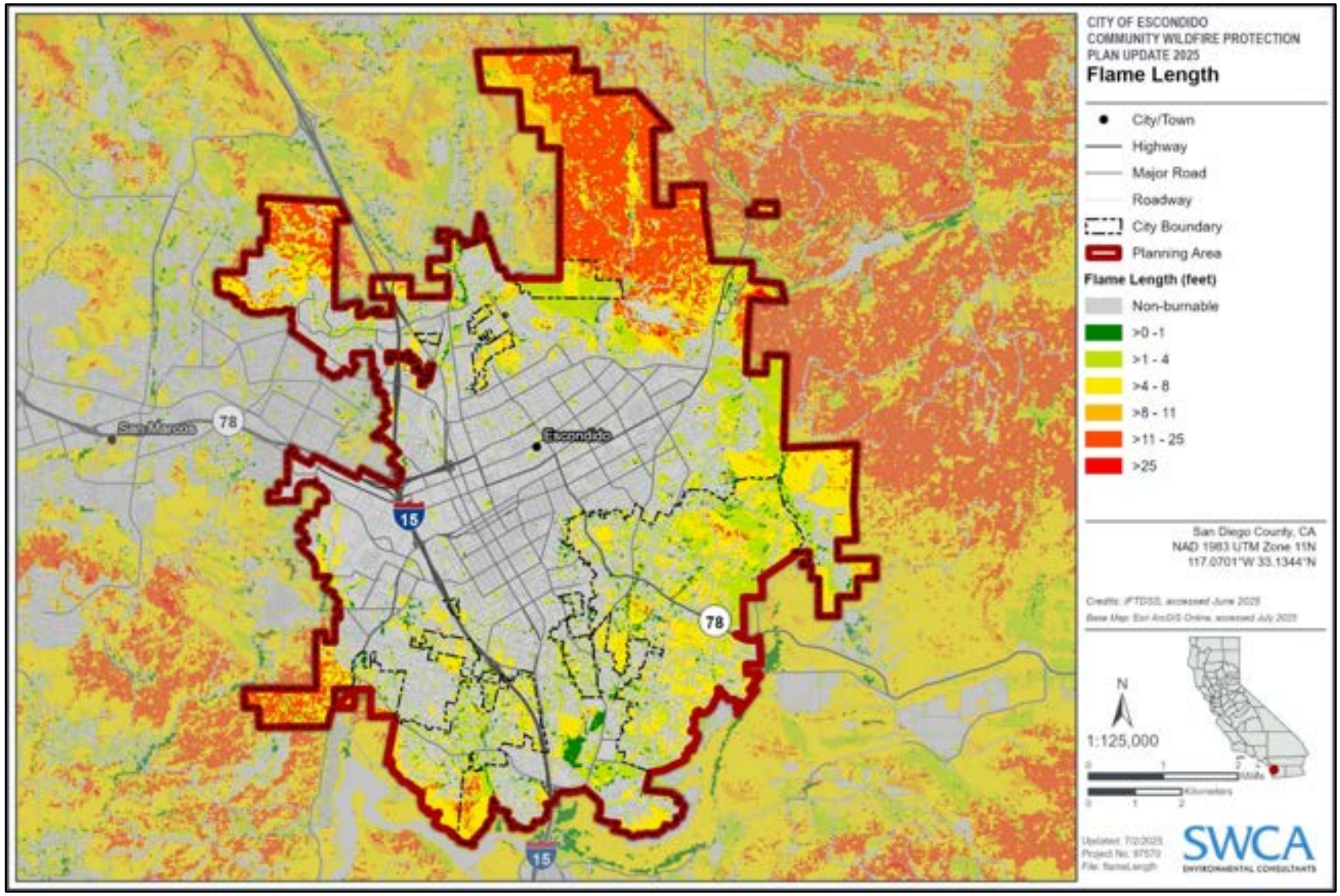

Figure 3.6. Flame length in the City of Escondido CWPP planning area.

3.4.4 Highly Valued Resources and Assets (HVRAs)

3.4.4.1 Infrastructure

The infrastructure dataset (Figure 3.7 and Figure 3.8) for the QWRA was developed through a comprehensive process that combined data from critical infrastructure inventories, community assessments, and Core Team input. This dataset was further supplemented with HVRA data acquired from the Homeland Infrastructure Foundation-Level Data (HIFLD). The identified infrastructure HVRAs are categorized into two main groups: Energy and Communication (Figure 3.7) and Water and Transportation (Figure 3.8). The Energy and Communication category includes key infrastructure within the Escondido planning area, such as power plants, substations, communication sites, and major utility lines, all mapped in relation to the city's boundaries and primary transportation routes. The Water and Transportation category highlights the distribution of transportation and water infrastructure across Escondido, including the network of highways, major roads, railroads, bridges, streams, rivers, dams, and waterbodies within the planning area.

Critical infrastructure was buffered by 60 meters to address areas classified as 'unburnable' around these assets. Frequently, a nonburnable space exists between HVRAs and adjacent fuels; adding this buffer effectively classifies the HVRAs adjacent to fuels as 'burnable' features. Though the fire spread models do not simulate structure burning ('urban' fuels show as 'unburnable') this allows the risk to be projected into the most threatened developments on the edge of the WUI.

3.4.4.2 Buildings

The Microsoft Building Footprints (Figure 3.9) dataset was used to identify the locations and extents of structures, including residences and businesses, across the planning area. This dataset, created using artificial intelligence (AI) algorithms applied to high-resolution satellite imagery, provides detailed polygonal representations of buildings (ArcGIS Online 2022). Incorporating these data into the QWRA allows for accurate mapping of structures across the landscape and helps assess the exposure of built environments to wildfire risks.

Since the model typically classifies the immediate areas around buildings as 'unburnable,' building footprints were buffered by 0.25 mile to ensure this area is treated as 'burnable' in the analysis.

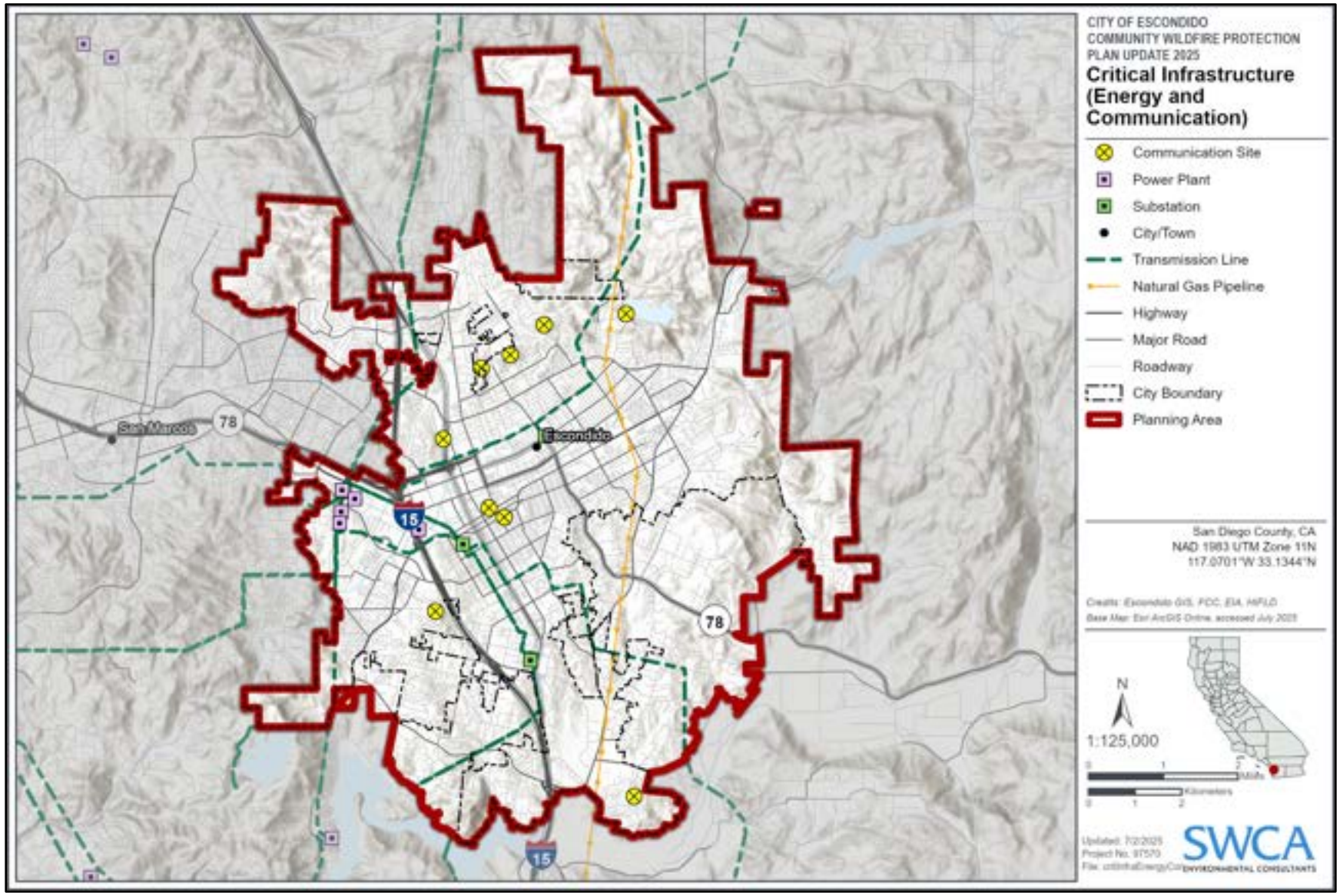

Figure 3.7. City of Escondido CWPP planning area QWRA input – HVRA: Critical Infrastructure (Energy and Communication).

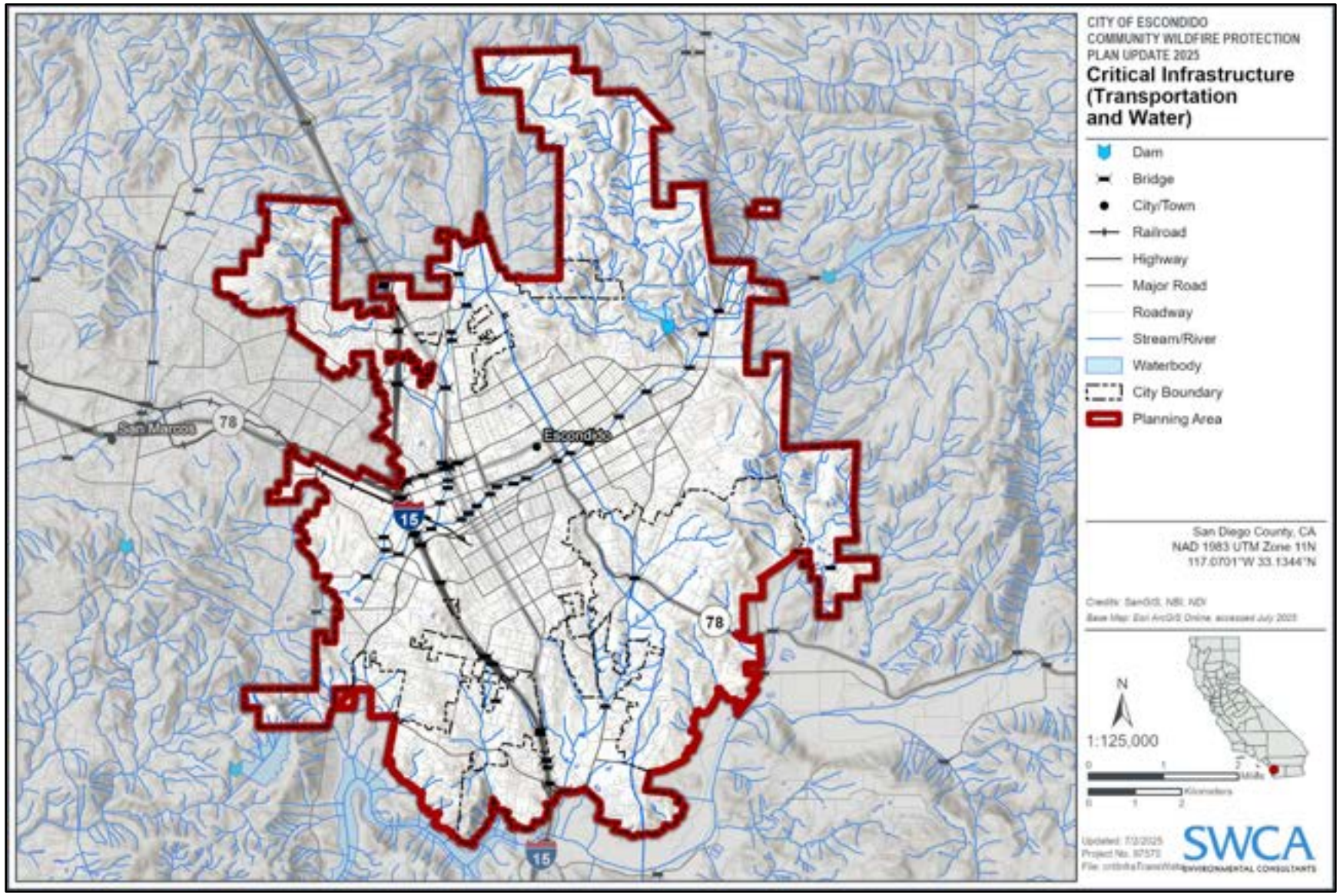

Figure 3.8. City of Escondido CWPP planning area QWRA input – HVRA: Critical Infrastructure (Transportation and Water).

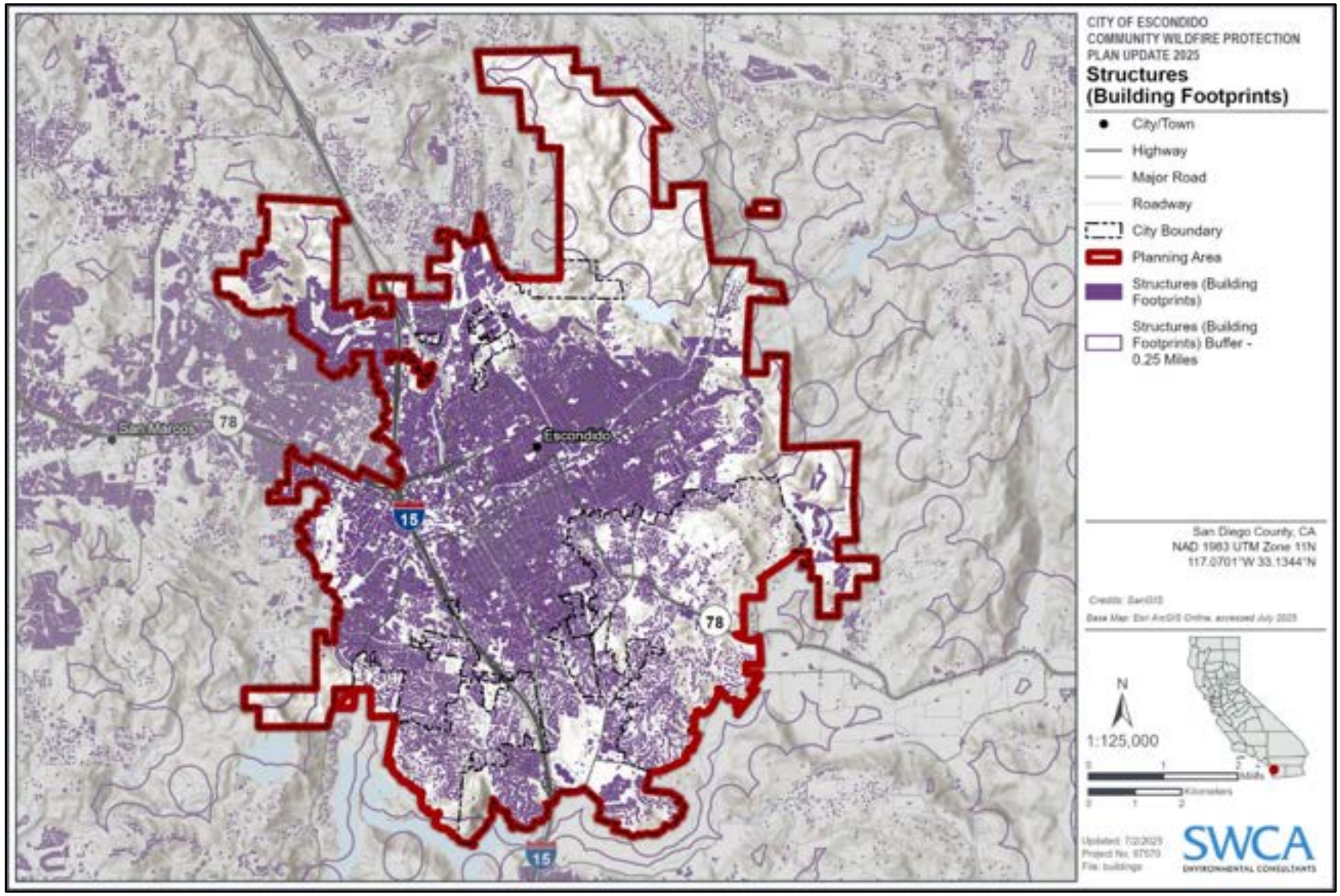

Figure 3.9. City of Escondido CWPP planning area QWRA input – Building Footprints.

3.4.5 Risk Modeling and Scoring

3.4.5.1 Landscape Fire Behavior

Landscape fire behavior modeling was executed in IFTDSS (FlamMap) using the Automatic 97th Percentile Landscape Fire Behavior (Auto 97th) parameters (IFTDSS n.d.(d)). The Auto 97th setting models fire behavior under very high fire weather conditions. Auto 97th uses data from nearby remote automated weather stations (RAWS) to determine conditions for fuel moisture and wind speed and direction.

Weighting and Relative Importance

To develop a quantitative risk product (Wildfire Risk to Structures and Infrastructure), the HVRAs must be weighted with a relative importance value (Scott et al. 2013). The HVRAs were broken into two categories and weighted as shown in Figure 3.10.

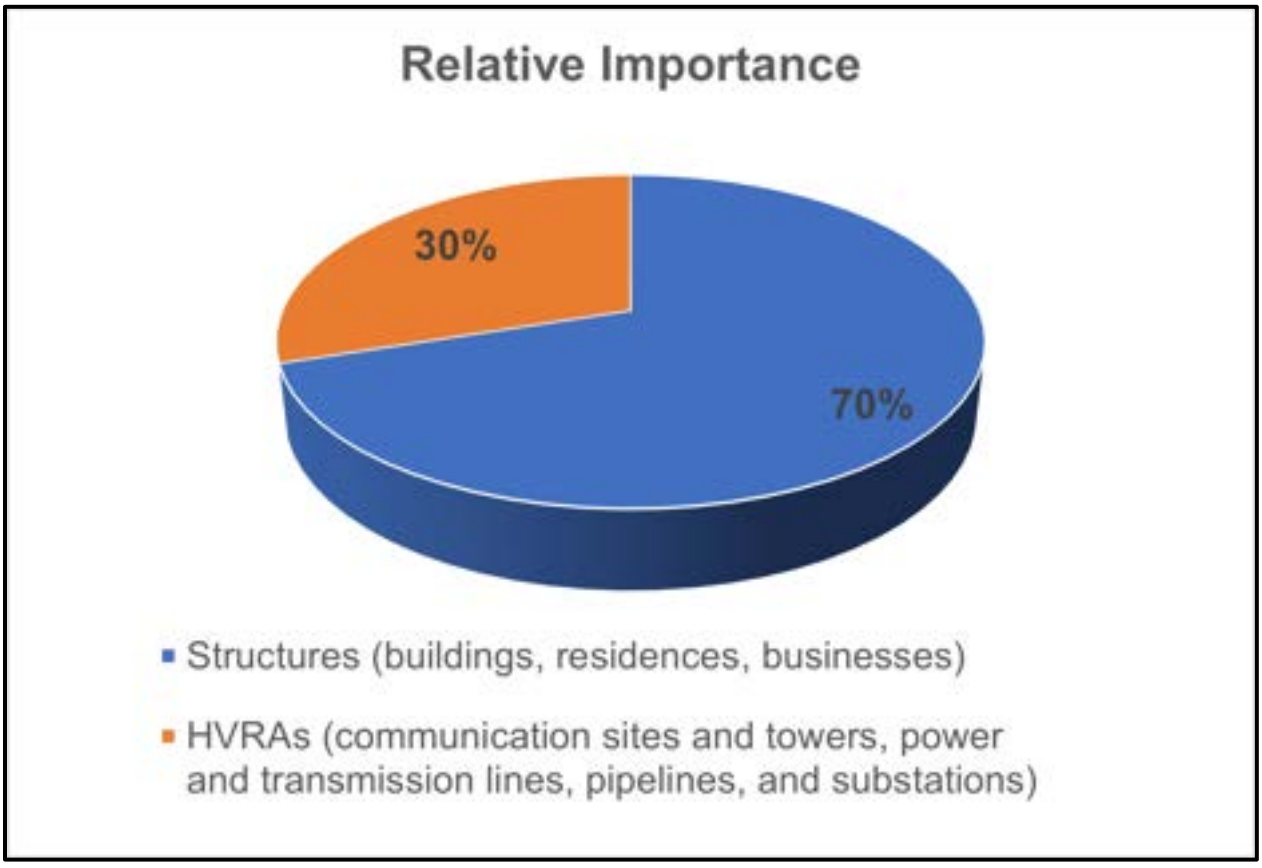

Figure 3.10. Relative importance of collaboratively selected HVRAs for the City of Escondido CWPP planning area.

3.4.6 Validation and Calibration

LANDFIRE is a national vegetation and fuels remote sensing project that provides land managers with a data source for all inputs needed for fire behavior models (fuels, topography, and canopy characteristics). 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 available at: http://www.landfire.gov.

The fire modeling for the Wildfire Risk to Assets products utilized the LANDFIRE 2023 data layers. As a result, any wildfire activity occurring after the most recent LANDFIRE update (2023) is not reflected in this fire behavior modeling. For the purposes of this plan, this limitation is not considered significant as there have been no recent major wildfires since the last update that would be expected to significantly influence wildfire behavior across the surrounding landscape. However, future iterations of this risk analysis should carefully evaluate the accuracy and relevance of the current LANDFIRE dataset, or any alternative data sources, especially in the context of recent significant wildfire events. Integrating updated information that captures changes in vegetation and landscape conditions due to these wildfires will help ensure that analysis inputs more accurately reflect current and anticipated fire behavior. In turn, this will result in risk outputs that more reliably represent the true potential for wildfire impacts within the planning area.

3.4.7 QWRA Results

The QWRA map (Figure 3.11) highlights high and very high wildfire risk in the central portion of the city, where wildland fuels intersect infrastructure and buildings. Areas are color-coded to indicate varying levels of risk: green represents low risk, yellow indicates moderate risk, orange signifies high risk, and red highlights very high risk. The map shows that most of the developed urban core and central parts of Escondido are either unclassified (meaning nonburnable) or classified as low to moderate risk, while high and very high-risk areas are generally located along the city's eastern and northeastern boundaries, where WUI and undeveloped open spaces are more prevalent.

It is important to note that this analysis does not model how fire interacts with the built environment but rather focuses on how wildland fire behaves across burnable landscapes. As such, the assessment is primarily concerned with wildland fire and the risks faced by WUI communities and critical infrastructure. While certain fuel types classified as "NB" (non-burnable) can, under specific circumstances, still ignite and support combustion, this concept is not included in the QWRA modeling exercise. When wildfires encroach upon urban areas, they are considered "urban conflagrations," which involve distinct variables and complexities that warrant separate analysis.

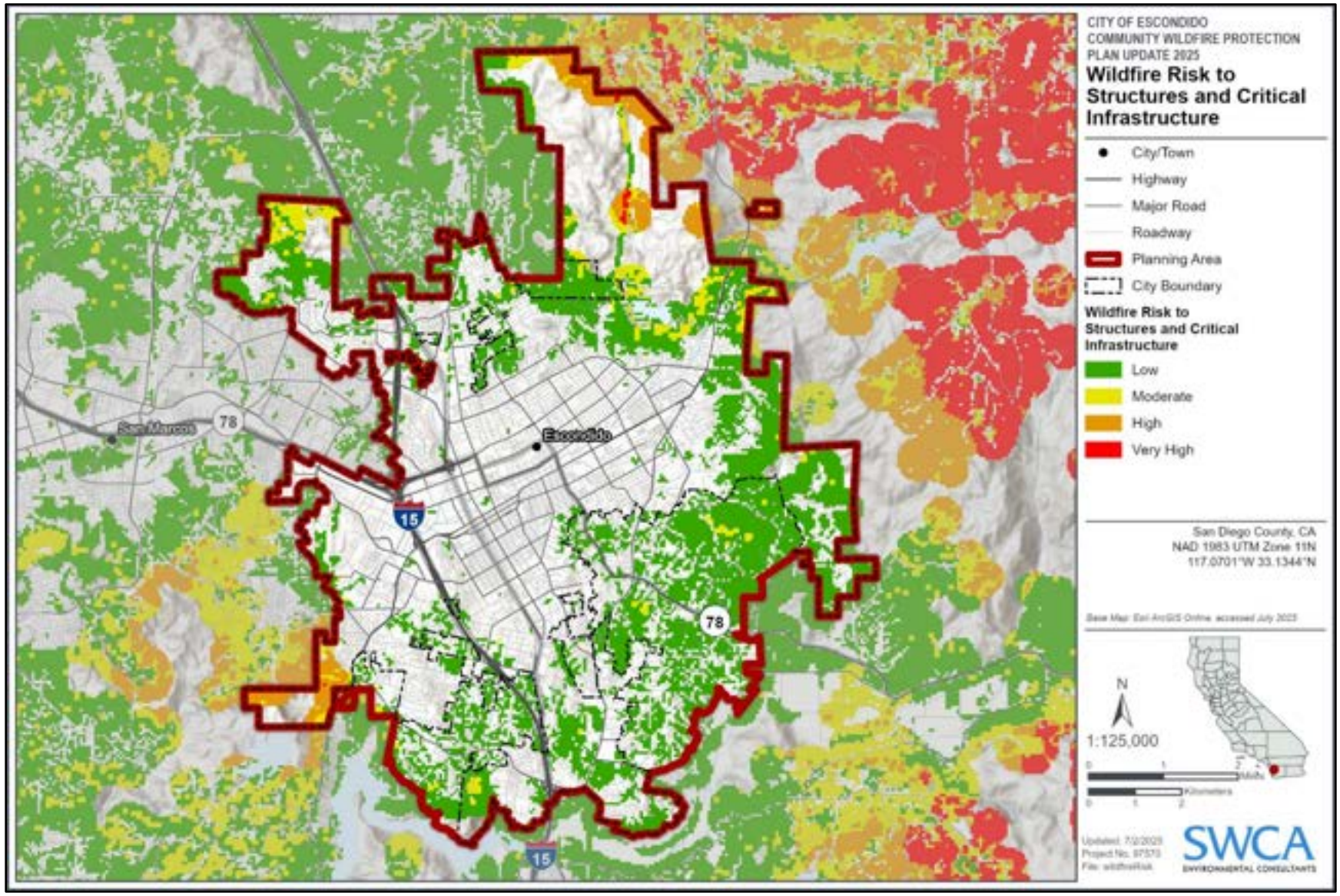

Figure 3.11. Wildfire risk to structures and critical infrastructure in the City of Escondido CWPP planning area.

CHAPTER 4 MITIGATION STRATEGIES

This chapter outlines project recommendations, implementation strategies, and conceptual fuel treatment approaches, all designed to support the three primary goals of the National Cohesive Wildland Fire Management Strategy: fostering resilient landscapes, building fire-adapted communities, and ensuring safe, effective, and risk-based wildfire response. As a non-regulatory document, the CWPP offers guidance and suggestions for actions that can help mitigate wildland fire risk; however, implementation of these recommendations is voluntary. The decision to adopt specific actions rests with City representatives, land managers, homeowners, and stakeholder groups, who should consider alignment with local planning documents when making these choices. Incorporating input from subject matter experts, lessons learned, and the best available science is encouraged throughout the processes of project planning, implementation, and maintenance.

Many recommendations can be put into action at the homeowner or community level, while larger-scale projects may require broader support and should be prioritized based on findings from the QWRA. Throughout this chapter, recommendation matrices provide actionable frameworks for implementation. Where applicable, recommendations have been aligned with the strategies and goals outlined in the Strategic Fire Plan for California (CAL FIRE 2018), the 2021 California Wildfire and Forest Resilience Action Plan, and California's Forests and Rangelands: 2017 Assessment.

4.1 COHESIVE STRATEGY GOAL 1: RESTORE AND MAINTAIN LANDSCAPES

Recommendations to restore and maintain resilient landscapes are centered on vegetation management and hazardous fuel reduction.

Resilient landscapes are those that are healthy, diverse, and capable of withstanding and recovering from disturbances such as wildfires, climate change, invasive species, and insect infestations. Hazardous fuel reduction treatments are a vital tool for enhancing wildfire mitigation and promoting resilient landscapes, however, these approaches may not always be appropriate in all areas of Escondido due to the natural characteristics of the native vegetation. However, in certain situations, hazardous fuel reduction is necessary for a variety of mitigative actions, such as increasing safety and effectiveness of response efforts, controlling invasive plant species or managing unnaturally dense or overgrown vegetation. With proper implementation and maintenance, these actions ultimately support ecosystem health and resilience

General project recommendations for fostering landscape resilience within the planning area are provided in Table 4.2. All recommendations in this section were developed collaboratively with Core Team members, stakeholders, and the public.

4.1.1 Recommendations for Hazardous Fuel Reduction

Managing hazardous fuels on public and private lands within the Escondido WUI is essential for protecting homes, infrastructure, and sensitive natural resources during wildfire events and for meeting the objectives of Goal 1 of the Community Wildfire Strategy. Table 4.2 presents recommended types of fuel treatments and priority projects across the planning area. Recommended treatments include defensible space maintenance, shaded fuel breaks, mechanical thinning, and roadside vegetation clearance. Projects must comply with all applicable environmental regulations and permitting requirements. Depending on location and scope, coordination may be required with the California Department of Fish and Wildlife for California Endangered Species Act (CESA) compliance, the Regional Water Quality Control Board for water quality certifications, the U.S. Army Corps of Engineers for jurisdictional waters and wetlands, and other relevant agencies. California Environmental Quality Act (CEQA) review will determine the level of environmental documentation required and identify mitigation measures to avoid or minimize impacts (California Natural Resources Agency 2025). Site-specific considerations such as slope, aspect, vegetation type, and proximity to critical infrastructure or high-value resources must be incorporated into treatment design (USFS 2024). Approximately 800 acres of land within Escondido are currently treated and maintained for vegetation clearance by the City.

4.1.1.1 California Vegetation Treatment Program (CalVTP) and Court-Mandated Updates

In May 2025, the California Courts of Appeal ruled that the California Board of Forestry and Fire Protection's Program Environmental Impact Report (PEIR) for the California Vegetation Treatment

Program (CalVTP) did not fully comply with the CEQA requirements. The court found that the environmental analysis did not adequately evaluate the risk of type conversion when implementing fuel breaks, which is the long-term replacement of native shrubland habitats such as chaparral and coastal sage scrub with nonnative, highly flammable annual grasses and weeds (California Chaparral Institute v. California Board of Forestry and Fire Protection, Case No. D081636, May 30, 2025).

This legal decision requires that CAL FIRE revise the CalVTP PEIR to more thoroughly address the potential for type conversion, its role in increasing wildfire spread and intensity, and the associated impacts to biodiversity and ecosystem resilience. Scientific research has shown that when native shrublands are converted to invasive annual grasslands, fire frequency can increase significantly because of shorter fire-return intervals and higher flammability of fine fuels (Keeley et al. 2006; Syphard et al. 2019).

While CalVTP remains a critical tool for agencies seeking to implement vegetation treatment projects under streamlined CEQA review, project-specific analyses (PSAs) must now include explicit evaluation of whether proposed fuel break treatments could result in type conversion. Where risk is identified, mitigation measures such as targeted invasive species control, reseeding with native species, and maintenance of native canopy cover must be incorporated to preserve ecological integrity (Figure 4.1).

Standard Project Requirements (SPRs) already included in the CalVTP, such as biological resource protections, must now also address the preservation of native shrubland structure, species composition, and continuity. For projects that extend beyond the scope of the original PEIR or introduce new potential impacts, PSA addenda must include provisions that specifically prevent or minimize type conversion and ensure wildfire hazard reduction goals are met without compromising long-term ecosystem health.

In summary, the May 2025 appellate ruling reinforces the need for CalVTP best management practices to balance wildfire hazard reduction and ecological stewardship. By integrating type conversion risk assessment and appropriate mitigation into vegetation treatment planning, agencies can ensure projects enhance community safety while maintaining the resilience and biodiversity of California's native landscapes (CAL FIRE 2023b).

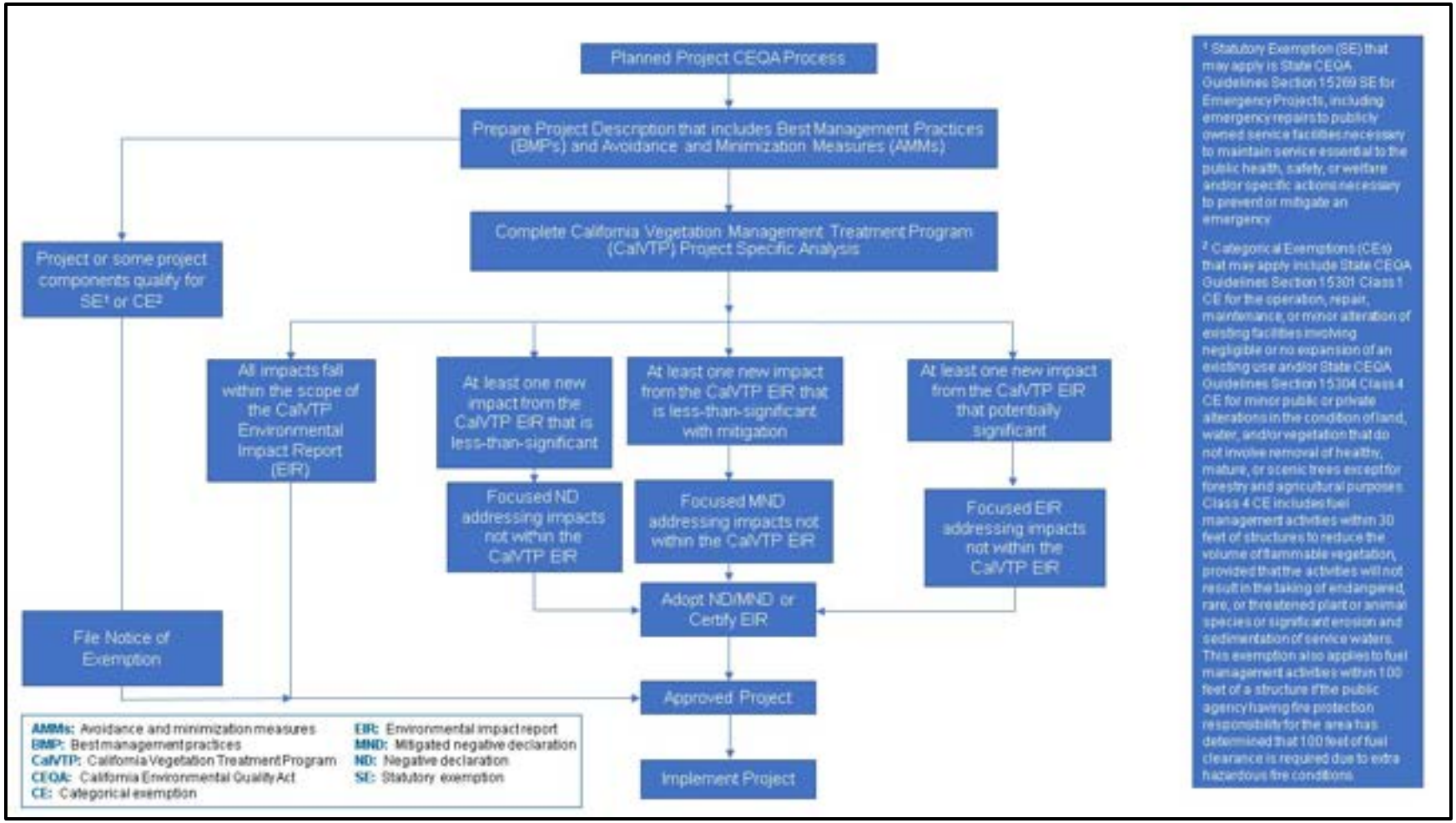

Figure 4.1. CEQA process for CalVTP implementation.

4.1.2 Areas of Concern and Priority

To support prioritization of resilient landscape recommendations, the CWPP Core Team and SWCA staff identified and mapped broad areas of concern (AOCs) within and adjacent to the city (Figures 4.2–4.6 and Table 4.1). These areas were delineated using a combination of spatial data, ground surveys, wildfire hazard mapping products, and local expertise. AOCs highlight locations where mitigation actions can most effectively reduce risk to community assets. By identifying these priority zones, the CWPP provides land managers and homeowners with a clearer understanding of where wildfire mitigation and preparedness efforts will have the greatest benefit. Fuel reduction efforts in these areas should be strategically located to connect with and reinforce other ongoing or planned mitigation projects. This integrated approach maximizes cumulative wildfire risk-reduction benefits and increases the overall effectiveness of suppression efforts during a wildfire (USFS 2025a).

While these areas are recommended for prioritized action, they do not represent all at-risk locations within the planning area and should not be considered an exhaustive list. As the CWPP is intended to be a living document, it is strongly encouraged that additional priority areas be identified and incorporated through ongoing updates and future implementation efforts, ensuring the plan remains responsive to evolving risks and community needs.

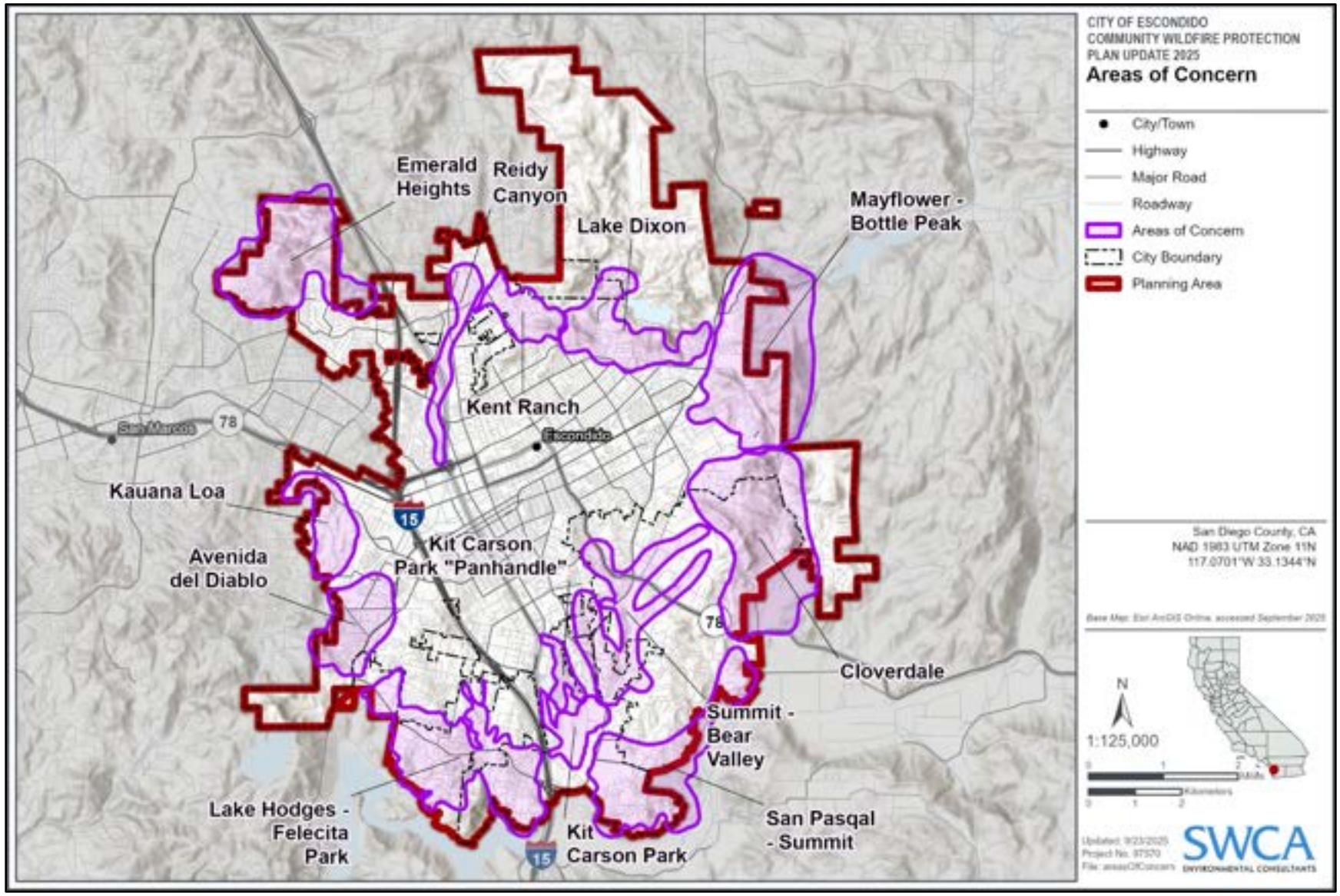

Figure 4.2. Areas of concern map.

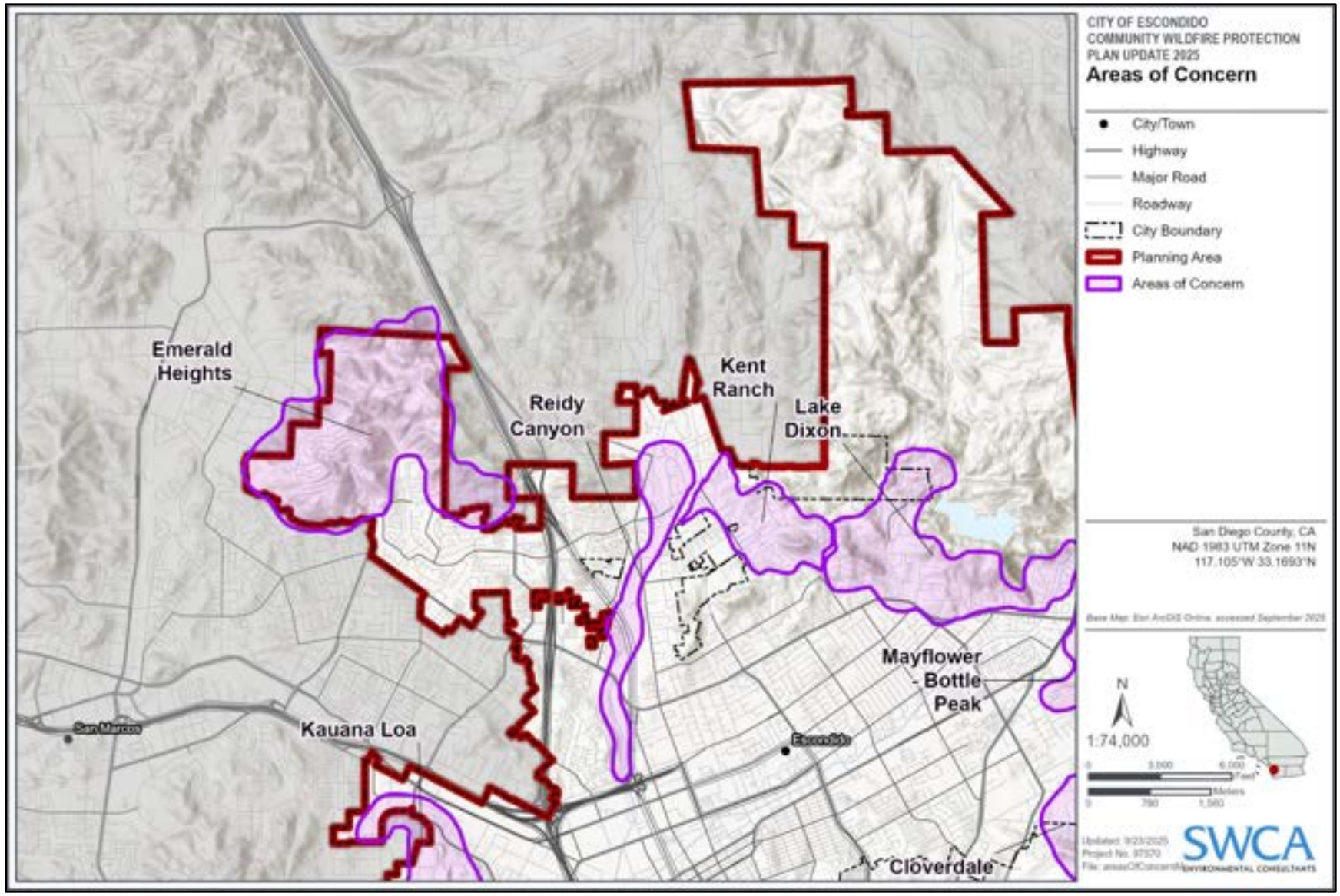

Figure 4.3. Areas of concern: northwest quadrant.

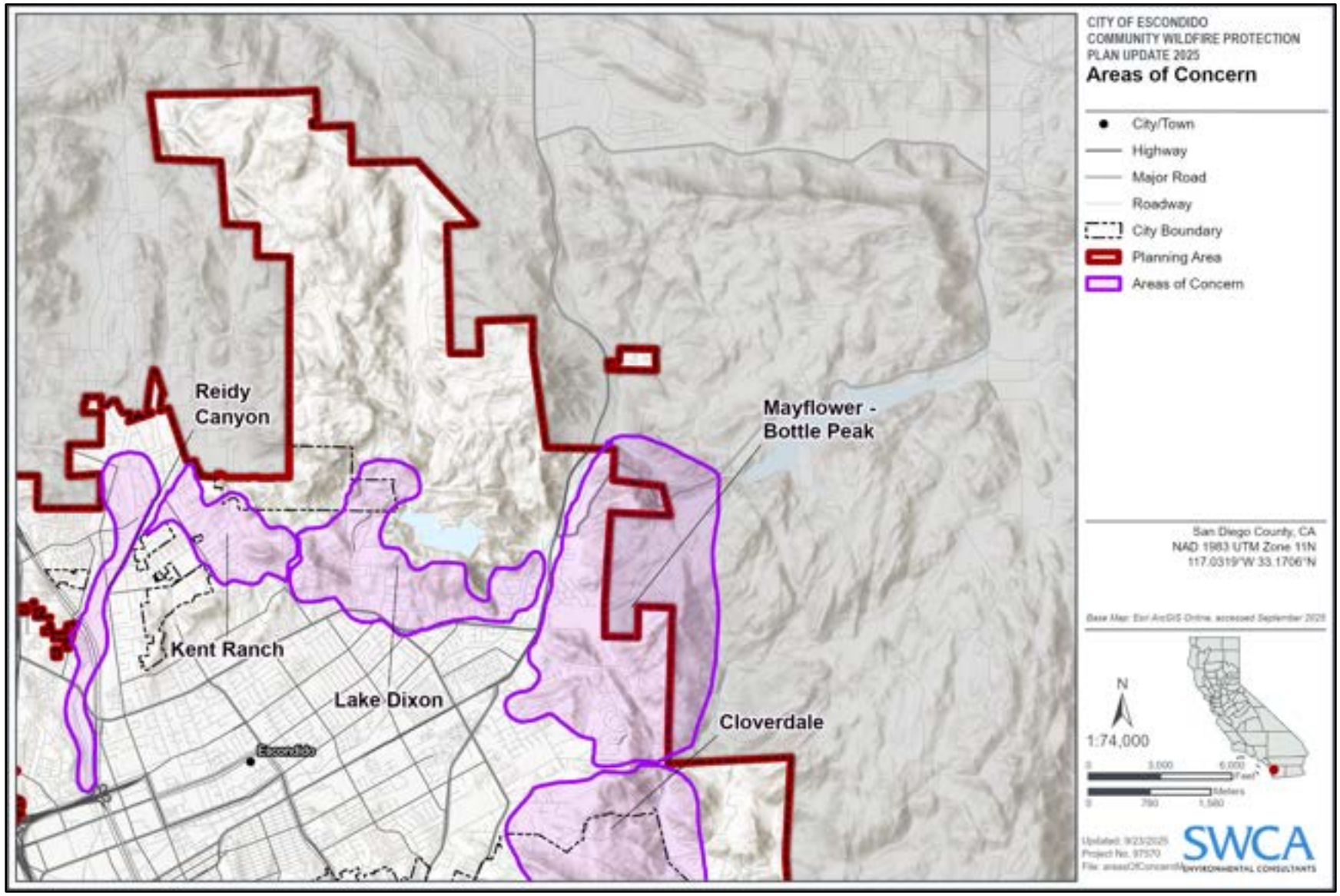

Figure 4.4. Areas of concern: northeast quadrant

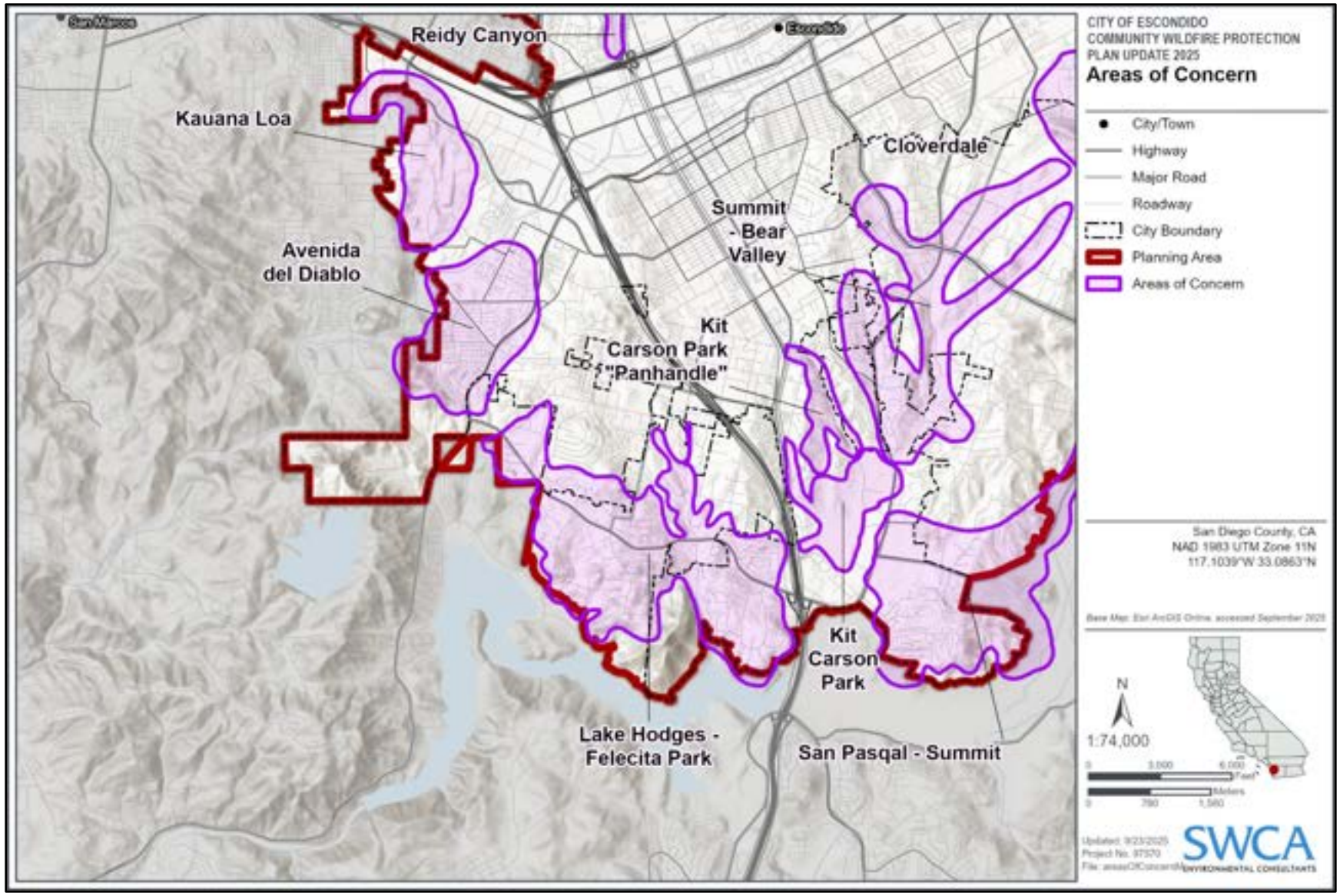

Figure 4.5. Areas of concern: southwest quadrant.

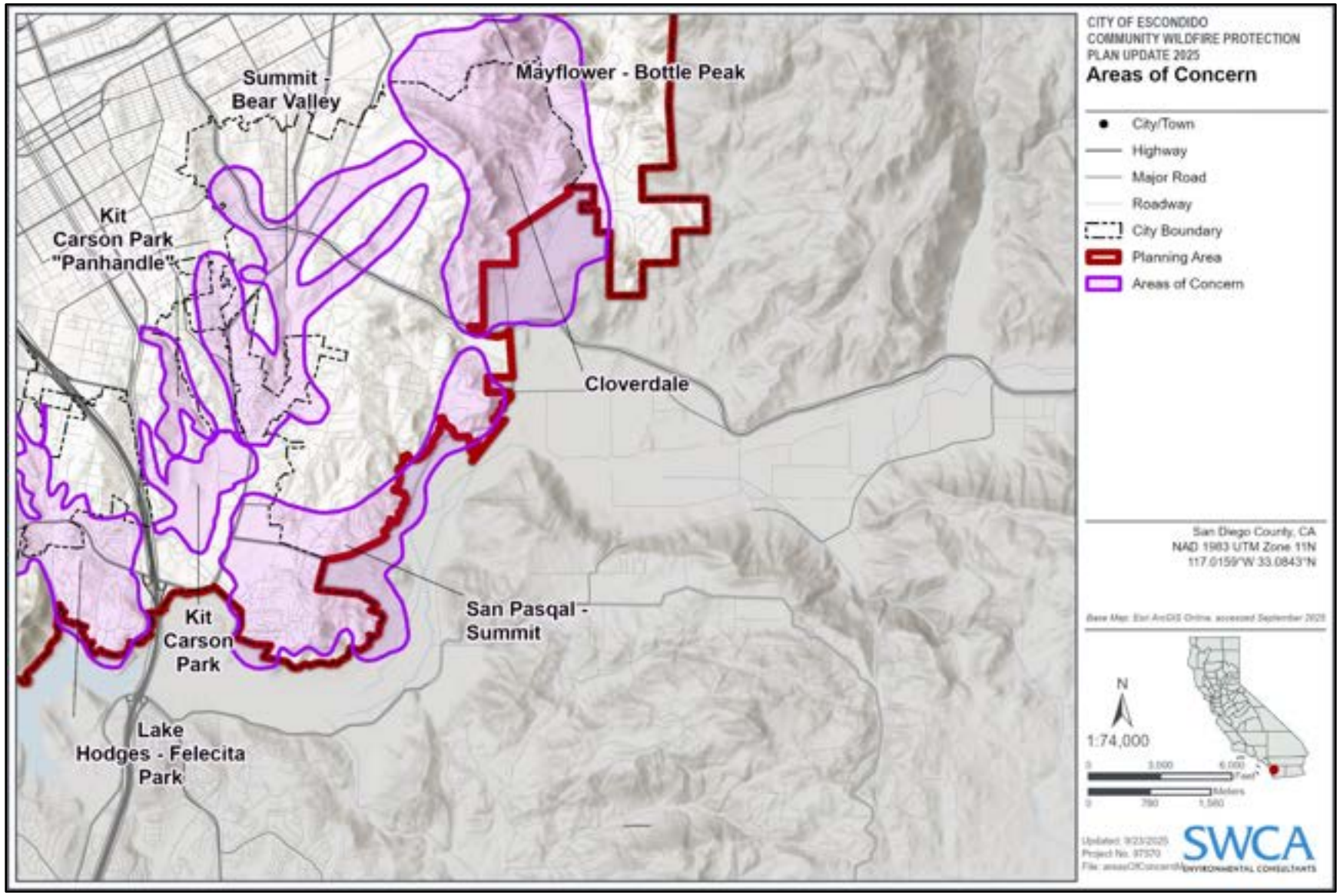

Figure 4.6. Areas of concern: southeast quadrant.

Table 4.1. Areas of Concern

Area	Description
A1	Kauana Loa: Located on the city's western edge, this area borders continuous open-space fuels that extend south toward Lake Hodges and west through Harmony Grove and Elfin Forest. The 2014 Cocos Fire burned through San Marcos into Harmony Grove, destroying dozens of structures. That burn footprint borders the Kauana Loa area, illustrating potential spread pathways toward the community under similar conditions
A2	Avenida del Diablo: This area borders undeveloped canyons and chaparral-covered slopes south of Avenida del Diablo, creating continuous fuel load in close proximity to nearby neighborhoods and the water treatment facility. The facility is a critical infrastructure, and damage or disruption could affect citywide water supply and fire suppression capability.
A3	Lake Hodges – Felicita Park: Neighborhoods around Lake Hodges and Felicita Park border the San Dieguito River Park corridor and preserved uplands containing continuous chaparral and coastal sage scrub. During Santa Ana events, historic fires, including the 2007 Witch Creek Fire, have burned through Lake Hodges and Del Dios, demonstrating the corridor's high exposure to wind-driven fire.
A4	Kit Carson Park: Popular community park contains oak woodland, riparian corridors, and grasslands surrounded by residential neighborhoods. High year-round visitation increases the likelihood of human-caused ignitions. A fire within the park could threaten homes on all sides, especially during wind-driven conditions.
A5	Kit Carson Park "Panhandle": The park's drainage network, including the 'Panhandle' can channel wind and fire spread toward surrounding neighborhoods during Santa Ana conditions. This area is an area with high homeless activity as well, and ignitions and small fires are very common in this area. Ember spread from the park to nearby structures is a major risk factor.
A6	Summit – Bear Valley: This area contains several small, steep-sided drainages branching south and west toward Kit Carson Park and Escondido Creek. These canyons support dense coastal sage scrub, chaparral, and oak-riparian woodland, creating continuous fuels between open space and homes. Fires can start in canyon bottoms and quickly run upslope toward structures
A7	San Pasqual – Summit: This area of concern along San Pasqual Road is adjacent to riparian corridors and open space preserves containing invasive plant species that are highly flammable, creating continuous fuel beds on both sides of the roadway. The surrounding hillsides to the north and south are dominated by chaparral, coastal sage scrub, and oak woodland, which provide abundant ladder fuels capable of carrying fire upslope into nearby commercial facilities and residential areas.
A8	Cloverdale: The area borders agricultural lands, preserves, and riparian corridors that create continuous fuel bed along and beyond Cloverdale Road. The Cloverdale Fire (2018) started off San Pasqual Valley Road near Escondido and burned 100 acres, demonstrating how quickly a wind-driven ignition can spread through the corridor. Limited evacuation routes along Cloverdale Road and connecting streets increase the urgency for early evacuation during wildfire events.
A9	Mayflower – Bottle Peak: The area surrounding Mayflower dog park borders the Bottle Peak County Preserve, with riparian corridors and native shrublands that form continuous fuel beds from the preserve into neighborhood edges. The headwaters of Escondido Creek form a riparian corridor which can channel fire toward residential areas. Limited evacuation routes via Mountain View Drive, Bear Valley Parkway, and local cul-de-sac streets could become congested during a fast-moving fire, making early evacuation essential.
A10	Lake Dixon: This area along the southern boundary of Daley Ranch and Lake Dixon Park contains abundant chaparral and contiguous open space. Public access at Dixon Lake Park increases ignition potential. Limited evacuation via East El Norte Parkway, La Honda Drive, and local streets can quickly become congested during wind-driven events, making early evacuation critical.
A11	Kent Ranch: The Kent Ranch Community Park area, at the base of Daley Ranch's foothills, borders undeveloped slopes and narrow canyons that connect directly to residential streets. Trail access behind Canyon Grove Drive increases ignition potential, and limited outlet roads to El Norte Parkway and Ash Street make early evacuation critical.
A12	Reidy Canyon: Reidy Canyon contains steep drainages with heavy canopy and understory that create continuous fuels adjacent to residential properties. The topography can accelerate fire spread toward structures. Limited roadway access presents evacuation challenges.

Area	Description
A13	Emerald Heights: This area is surrounded by the Daley Ranch open space that contains abundant old growth chaparral, coastal sage scrub, and oak woodland. Steep terrain can channel fire toward homes during wind-driven events, and evacuation is constrained to a few narrow roads. The private HOA has very limited access. The 24-hr staffed entry gate can further delay evacuation when not fully staffed, highlighting the need for early evacuation triggers, coordinated traffic control, and consistent vegetation management.

Table 4.2. Recommendations for Creating Resilient Landscapes (hazardous fuels reduction)

Project ID	Status	Priority (H,M,L)	Timeline for Action	Project Description	Location	Land Ownership/ Lead Agency	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL1		H	Fall 2026	**Fuel Reduction Hand Crew** Enlist the Fuel Reduction Hand Crew (Type 1 or 2) to perform manual vegetation management aimed at reducing hazardous fuels.	Planning area, with focus on WUI areas and high-risk zones	City of Escondido	• Procure funding and capacity for a Type 1 or Type 2 hand crew based on project needs and site conditions. • Manually thin, prune, and remove hazardous vegetation and ladder fuels. • Dispose of cut material through chipping, pile burning, or hauling as appropriate. • Coordinate activities with local agencies and stakeholders for alignment with mitigation goals. • Review the CAL FIRE Wild Animal Park Crew program to identify potential strategies and operational models that could inform local fire management efforts.	Reduce wildfire intensity and spread potential in high-risk areas and provide workforce development and training opportunities.	Conduct regular post-treatment inspections to assess fuel regrowth and treatment effectiveness Report monitoring results to inform adaptive management and future fuel reduction efforts.	• CAL FIRE Grant Programs • San Diego Regional Fire Foundation • San Diego County Fire Mitigation Fee Program • Regional Forest and Fire Capacity (RFFC) Program • USFS Community Wildfire Defense Grant (CWDG) • NRCS Conservation Innovation Grants (CIG) • FEMA Hazard Mitigation Grant Program (HMGP) • California Fire Safe Council Grant Programs
RL2		H	Spring 2027	**Hazardous Fuels Management along Ditches, Irrigation Channels, and Riparian Corridors** Reduce wildfire risk and enhance ecosystem health in and around watercourses.	Planning area public/private lands with ditches, irrigation channels, and riparian areas, (e.g., Kit Carson Park)	City of Escondido, Rincon del Diablo FPD, San Diego County, water districts, public agencies, private landowners, environmental groups	• Assess fuel buildup and prioritize high-risk ditches, channels, and riparian zones as delineated in the QWRA. • Coordinate with landowners, water managers, and public agencies for treatment planning and compliance. • Use a mix of mechanical, manual, biological, and chemical methods for vegetation management, based on site conditions and environmental and cultural compliance. • Establish and maintain shaded fuel breaks and reduce ladder fuels in sensitive areas. • Provide community education and outreach to encourage involvement. • Consider dedicated staff or coordination roles for ongoing maintenance and project oversight. • Seek funding and partnership opportunities for implementation.	Break up fuel continuity, support riparian health, and improve wildfire response safety.	Track and report acres treated and methods used. Conduct regular maintenance due to rapid vegetation regrowth in riparian zones.	• CAL FIRE Grant Programs • California Department of Conservation Regional Forest and Fire Capacity (RFFC) Grant Program • EPA Catalog of Federal Funding Sources; Water Resources • NRCS Environmental Quality Incentives Program (EQIP) • California State Coastal Conservancy Wildfire Resilience Program • California Fire Safe Council Grant Programs
RL3		H	Fall 2026	**Green Waste and Chipper Program** Increase Escondido's green waste and chipper program capacity. Explore biomass utilization options.	Planning area, with focus on WUI areas	City of Escondido (lead), CAL FIRE, San Diego County, private landowners	• Acquire more chipping equipment and offer no-cost chipping to residents in high-risk areas. • Study options for local biomass disposal, such as composting or mulching. • Engage the community and promote participation. • Seek funding and partnerships for program support. • Explore successful green waste programs in neighboring communities to identify best practices and innovative approaches for local implementation (e.g., Oceanside Green Waste) • Incorporate finding from Escondido Urban Forestry Plan	Reduce hazardous fuels, improve green waste management, and enhance community wildfire resilience.	Track participation, waste volumes, and program outcomes. Review annually and adjust strategies as needed.	• CAL FIRE Grant Programs • San Diego Regional Fire Foundation • San Diego County Fire Mitigation Fee Program • California Environmental Protection Agency Loans and Grants • California Fire Safe Council Grant Programs • California Fire Foundation Grant Programs
RL4		H	Spring 2027	**Hazard Tree and Dense Vegetation Survey and Mitigation** Identify and address hazardous trees and dense vegetation in high-risk areas to reduce wildfire risk and improve public safety.	Planning area, prioritizing WUI, roadways, and community infrastructure	City of Escondido (lead), CAL FIRE, private landowners, utilities	• Conduct a planning area survey and mapping of hazard trees and dense vegetation. • Create a shared database for tracking and prioritizing mitigation. • Focus removal and maintenance efforts on highest-risk locations as delineated on the CWPP QWRA • Coordinate roles among agencies and property owners.	Reduce wildfire hazards, protect residents and infrastructure, and enhance community safety.	Monitor progress and update the database regularly. Share results with stakeholders and the public.	• CAL FIRE Grant Programs • San Diego Regional Fire Foundation • NRCS Environmental Quality Incentives Program (EQIP) • FEMA Hazard Mitigation Grant Program (HMGP) • California Fire Safe Council Grant Programs • USFS Landscape Scale Restoration Competitive Grant Program

Project ID	Status	Priority (H,M,L)	Timeline for Action	Project Description	Location	Land Ownership/ Lead Agency	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL5		H	Fall 2026	**Hazardous Fuels Reduction Along Evacuation Routes** Reduce wildfire risk and improve safety by clearing hazardous vegetation along key evacuation routes.	Planning area, focusing on major evacuation corridors and high-risk areas	City of Escondido (lead), CAL FIRE, San Diego County, utilities (e.g., SDG&E)	• Assess and prioritize evacuation routes for fuels reduction. • Implement thinning, debris removal, and maintenance along selected routes. • Ensure compliance with environmental standards. • Adapt management practices based on monitoring and changing conditions.	Keep evacuation routes safe and accessible during wildfire emergencies, protecting residents and responders.	Regularly monitor and reassess route conditions. Maintain updated records and adjust strategies as needed.	• CAL FIRE Grant Programs • San Diego Regional Fire Foundation • FEMA Hazard Mitigation Grant Program (HMGP) • USFS Community Wildfire Defense Grant (CWDG) • California State Coastal Conservancy Wildfire Resilience Program • California Fire Safe
RL6		H	Spring 2027	**Fuel Management to Protect Water Resources** Reduce wildfire risk and protect Escondido's key water resources and watersheds from fire and post-fire impacts.	High-risk water resources and watersheds within Escondido and Rincon del Diablo FPD (e.g., lake hodges),	City of Escondido, Rincon del Diablo FPD, water districts, San Diego County, state/federal agencies, landowners, Escondido Fire Safe Council (FSC)	• Collaborate with hydrologists and land managers to identify and prioritize critical water resources and watersheds. • Implement targeted fuel reduction (mechanical, manual, biological, chemical, and, where appropriate, prescribed fire) around reservoirs, creeks, and recharge zones. • Integrate best practices to minimize erosion and sedimentation. • Restore burned areas through revegetation and tree planting to reduce debris flow, flooding, and water quality risks. • Coordinate with water agencies to ensure fuel management protects water quality and supply. • Engage the public in watershed protection education. • Continue coordination with the local FSC, with involvement from the Padre Dam expert.	Safeguard water quality and infrastructure before and after fire events; reduce erosion, debris flow, and post-fire water impacts.	Monitor treated areas, track acres and methods, and assess watershed health post-fire. Adjust strategies as needed.	• CAL FIRE Grant Programs • California Department of Conservation RFFC Grant Program • EPA Catalog of Federal Funding Sources; Water Resources • NRCS Environmental Quality Incentives Program (EQIP) • FEMA Hazard Mitigation Grant Program (HMGP) • National Forest Foundation Matching Awards Program
RL7		M	Fall 2027	**Invasive Species Control Program** Reduce and manage invasive plant species to protect Escondido's native habitats and wildfire resilience.	Planning area, with focus on post-fire areas and natural open spaces	City of Escondido (lead), local conservancies, CAL FIRE, FSC, community volunteers	• Survey and map invasive species hotspots using ground assessment, public outreach, and GIS/remote sensing technologies. • Prioritize control in sensitive and high-risk areas. • Use integrated pest management: mechanical removal, targeted herbicides, and, where appropriate, biological control. • Restore native vegetation after removal. • Engage and educate the community, encouraging volunteer participation. • Continue Escondido FSC and local resident support of goat and sheep grazing for fuel reduction as grazing helps sterilize invasive species and prevent regrowth.	Protect native ecosystems, reduce wildfire risk, and improve habitat health.	Regularly monitor invasive species and restoration sites. Adapt strategies based on results and changing conditions.	• CAL FIRE Grant Programs • California Environmental Protection Agency Loans and Grants • NRCS Conservation Innovation Grants (CIG) • USFS Landscape Scale Restoration Competitive Grant Program • California Fire Safe Council Grant Programs
RL8		M	Fall 2026	**Enhance GIS Mapping with Updated Hazard Zones** Increase the accuracy and utility of hazard zone mapping by updating GIS data layers to reflect current conditions.	Planning area (City of Escondido, Rincon del Diablo FPD, and adjacent public/private lands)	City of Escondido	• Review and compile existing hazard zone data from relevant sources. • Acquire and integrate recent satellite imagery and field data to capture current conditions. • Update GIS layers to reflect newly identified or changing hazard zones. • Validate updated hazard zones through ground-truthing and stakeholder input. • Share revised GIS maps with agencies and partners for coordinated planning. • Maintain and periodically refresh hazard zone data to ensure ongoing accuracy.	Support resource prioritization and mitigation strategy development, and facilitate greater collaboration through shared, up-to-date information.	Track data usage and solicit user feedback to guide future improvements.	• CAL FIRE Grant Programs • State of California Grants Portal • Esri Environmental Systems Research Institute, Inc. Grants • California Fire Safe Council Grant Programs

Project ID	Status	Priority (H,M,L)	Timeline for Action	Project Description	Location	Land Ownership/ Lead Agency	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
RL9		M	Spring 2027	**Prescribed Grazing Pilot Program** Implement targeted goat or sheep grazing in high-fuel corridors.	Around critical infrastructure to maintain low-fuel conditions. This can reduce mechanical treatment needs and provide year-round maintenance.	City of Escondido, Rincon del Diablo FPD, San Diego County, water districts, public agencies, private landowners, environmental groups	• Inventory City-owned and accessible private properties suitable for grazing. • Conduct California Department of Fish and Wildlife (CDFW) environmental suitability reviews. • Install exclusionary fencing and provide water access. • Contract with qualified grazing operators. • Schedule multiple grazing cycles per season in suitable areas.	Provide public outreach to highlight program benefits and risk reduction results. Reduce hazardous fuel loads, maintain defensible space around critical assets, increase public engagement, and demonstrate the City's commitment to wildfire risk reduction.	Evaluate prescribed grazing on annual basis.	• CAL FIRE Grant Programs • San Diego Regional Fire Foundation • San Diego County Fire Mitigation Fee Program • FEMA Hazard Mitigation Grant Program (HMGP) • California State Coastal Conservancy Wildfire Resilience Program • NRCS Environmental Quality Incentives Program (EQIP)
RL10		M	Fall 2027	**Workforce Development and Training for Fuels Reduction** Build local expertise to support wildfire resilience and ecological management.	Planning area	City of Escondido (lead), CAL FIRE, local agencies, community colleges, nonprofits	• Build curriculum based on best science and best management practices for native vegetation communities. • Provide hands-on and classroom training on fuels reduction, invasive species control, and restoration. • Offer mentorship and ongoing skills development. • Support agencies and organizations with resources and technical assistance.	Strengthen local workforce capacity to implement forest health and wildfire mitigation projects.	Evaluate training effectiveness, track skills application, and adapt programs based on feedback and emerging needs.	• CAL FIRE Grant Programs • California Fire Foundation Grant Programs • California Community Foundation Wildfire Recovery Fund
RL11		M	Spring 2028	**Cooperative Fuels Management** Coordinate fuels reduction efforts across Escondido, Rincon del Diablo FPD, and adjacent lands with diverse ownership (City, County, BLM, State, Caltrans, water and school districts, and private).	Planning area (City of Escondido, Rincon del Diablo FPD, and adjacent public/private lands)	City of Escondido, Rincon del Diablo FPD, County of San Diego, State agencies (Caltrans, CDFW), water and school districts, private landowners, nongovernmental organizations	• Jointly assess and prioritize high-risk areas for fuel treatments, focusing on WUI and boundaries between ownerships. • Identify parcels for targeted treatments to connect and enhance existing fuel breaks. • Pursue shared equipment, funding, and volunteer support. • Maintain fuel breaks near federal land, infrastructure, and critical facilities. • Develop collaborative maintenance and monitoring plans. • Hold annual multi-agency meetings to review progress and plan next steps.	Build resilient landscapes, reduce wildfire risk, and foster accountability among all land managers.	Conduct annual reviews, defensible space inspections, and invasive species monitoring. Track projects and share updates with stakeholders.	• CAL FIRE Grant Programs • San Diego Regional Fire Foundation • Regional Forest and Fire Capacity (RFFC) Program • USFS and NRCS Joint Chiefs' Landscape Restoration Partnership • FEMA Hazard Mitigation Grant Program (HMGP) • California Fire Safe Council Grant Programs
RL12		L	Fall 2028	**Fuel Break Installation and Maintenance** Implement planning and installation of fuel breaks. Build staffing to maintain and monitor existing and newly installed fuel breaks.	Planning area, with focus on WUI areas and high-risk zones	City of Escondido (lead), in coordination with private landowners, CAL FIRE, San Diego County, and local conservancies	• Implement and sustain fuel break projects in accordance with the CWPP and regional priorities. • Establish a regular maintenance and inspection schedule for fuel breaks on City-managed, public, and cooperative private lands to ensure continued effectiveness. • Maintain fuel breaks based on site-specific vegetation, with routine monitoring and adaptive maintenance criteria. • Collaborate with local fire departments, community groups, and regional land managers to coordinate efforts and share best practices. • Integrate hazard mitigation, such as removal of dead or diseased trees, into ongoing maintenance activities. • Assess the adequacy of fuel break width and continuity, especially along city boundaries and adjacent to open space preserves, and continuous fuels, expanding where necessary. • Explore and implement monitoring programs to improve accountability and enhance landscape resilience.	Enhance wildfire response capabilities and ensure the ongoing effectiveness of fuel breaks, reducing wildfire risk and protecting Escondido's neighborhoods, infrastructure, and natural resources.	Develop a robust monitoring plan with clear indicators, data collection protocols, and reporting timelines. Regularly publish updates on fuel break status and effectiveness to ensure transparency and facilitate ongoing adaptive management and maintenance.	• CAL FIRE Grant Programs • San Diego Regional Fire Foundation • San Diego County Fire Mitigation Fee Program • Regional Forest and Fire Capacity (RFFC) Program • USFS Community Wildfire Defense Grant (CWDG) • FEMA Hazard Mitigation Grant Program (HMGP) • California State Coastal Conservancy Wildfire Resilience Program • NRCS Environmental Quality Incentives Program (EQIP) • California Fire Safe Council Grant Programs

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4.2 COHESIVE STRATEGY GOAL 2: FIRE-ADAPTED COMMUNITIES

Recommendations for fire-adapted communities include public education and outreach actions and actions to reduce structural ignitability.

4.2.1 Recommendations for Public Education and Outreach

Actions on the landscape are only a partial solution to reducing wildfire hazard; public education and action are critical for reducing human-caused ignitions, reducing the ignition potential of homes, and strengthening community wildfire resilience. Lack of knowledge, lack of positive actions (e.g., failing to create adequate defensible space within the home ignition zone), and negative actions (e.g., keeping leaf litter and exposed propane tanks close to structures) all contribute to increased hazard and risk of loss.

The 2025 City of Escondido CWPP offers detailed projects to improve wildfire awareness, readiness, resilience, and response. Paramount to successfully initiating any of these projects is the need for a robust public education platform dedicated to wildfire preparedness. The ideal platform would span multiple channels, including a host website, social media, printed and video educational materials, and regular media engagement.

The objectives of this platform include:

- Increase public understanding and participation with evacuation protocols and emergency alerting systems.
- Increase public understanding of the importance of creating defensible space to reduce the propagation of wildfires.
- Improve public understanding of home hardening measures to reduce vulnerability of buildings to wildfire.
- Inform the public of state, county, and City of Escondido updates regarding WUI Fire Codes and defensible space property inspections.
- Create a community resource hub to assist residents with defensible space, home hardening, and safe evacuation.
- Create a platform for coordination and promotion of wildfire resource community groups such as the Escondido Fire Safe Council.
- Create a public-facing dashboard to share Escondido Community Risk Reduction Division's progress with complaint-based vegetation management, post-fire fuel mitigation, Assembly Bill 38 inspections, and proactive defensible space inspections.
- Provide updates on current fuel mitigation projects being conducted.
- Maintain a notifications calendar for community events related to wildfire preparedness in Escondido and neighboring jurisdictions.

The public education component is foundational in sustaining improvements in community wildfire preparedness, defensible space, home hardening, safe and timely evacuation, and wildfire response and recovery throughout Escondido. This is established as the highest-priority project in Creating Fire-Adapted Communities.

Table 4.3 lists public education recommendations to be implemented in the planning area.

4.2.2 Recommendations for Reducing Structural Ignitability

In addition to recommendations for public education and outreach, Table 4.3 also provides a list of community-based recommendations to reduce structural ignitability. 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). Maintaining defensible space and protecting the home from ignition by embers is strongly advised to protect a home from ignition. If property owners fail 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. The responsibility for executing and enforcing fire safety measures within Escondido falls to city code enforcement agencies and the Escondido Fire Department.

When selling a property in a High or Very High Fire Hazard Severity Zone (FHSZ) in California, Assembly Bill 38 requires documentation of a compliant defensible space inspection for real estate transactions.

Protecting structures from wildfire is a key aspect of California's 2018 Strategic Fire Plan, as buildings are among the most difficult and costly assets to protect. "Structural ignitability" refers to how likely a structure is to catch fire, often due to materials that can easily ignite from embers, direct flame, or radiant heat (Colorado State Forest Service 2025). Landowners should follow regional guidelines and state requirements, such as Chapter 7A of the California Building Code, which establishes wildfire-resistant construction and vegetation management standards for new buildings in FHSZs and WUI areas.

Table 4.3. Recommendations for Creating Fire-Adapted Communities (public education and structural ignitability)

Project ID	Status	Priority (H,M,L)	Timeline for Action	Project Description	Location	Land Ownership/ Lead Agency	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FAC1		H	Summer 2026	**Wildfire Public Outreach Infrastructure Initiative** Build infrastructure to support the Wildfire Public Education and Community Engagement Program (FAC 2), including a centralized hub site, expanded personnel capacity, targeted training, and social media content production.	City of Escondido, including Rincon del Diablo FPD and high-risk neighborhoods	City of Escondido, Rincon del Diablo FPD, local fire agencies, in partnership with schools, community groups, nonprofits, water districts, Tribal partners	• Develop and maintain a centralized online hub/landing page for wildfire safety resources and updates. • Recruit and train community ambassadors and dedicated outreach staff. • Provide comprehensive training for personnel and volunteers, including emergency preparedness and inclusive engagement. • Establish capabilities for social media content creation and digital outreach. • Partner with local organizations for broad and inclusive engagement. • Offer in-person and virtual demonstrations, workshops, and hands-on training. • Create and distribute multilingual resources for vulnerable and non-English-speaking populations. • Facilitate regular communication and feedback loops with the community to improve program effectiveness.	Educate and empower residents, reduce wildfire risk, increase preparedness, improve engagement with vulnerable and non-English-speaking populations.	Regularly review and update outreach content; track participation and engagement; adjust strategies to maximize impact. Maintain up-to-date online resources.	• CAL FIRE Grant Programs • FEMA Fire Prevention and Safety Grants (FP&S) • Firewise Communities Program • California Fire Foundation Grant Programs.
FAC2		H	Fall 2026	**Wildfire Public Education and Community Engagement Program** Educate and empower Escondido residents to reduce wildfire risk and increase preparedness using an educational and outreach campaign	Planning area, including Rincon del Diablo FPD and high-risk neighborhoods	City of Escondido, Rincon del Diablo FPD, local fire agencies, schools, community groups, nonprofits, water districts, Tribal partners, Escondido Fire Safe Council (FSC)	• Develop and share wildfire safety materials (defensible space, fire-safe landscaping, home hardening, evacuation preparation). • Use diverse outreach methods: social media, websites, local media, mailers, community events, and workshops. • Offer in-person, hands-on demonstrations and training to ensure that public understands emergency preparedness principals. • Partner with schools, community organizations, and other groups for inclusive engagement. • Recruit and train community ambassadors to promote wildfire safety. • Provide resources for vulnerable and non-English-speaking populations. • Educate the public on evacuation procedures and host evacuation drills and preparedness workshops. • Maintain an online hub for wildfire education resources (e.g., City website, ArcGIS CWPP hub site, and story map). • Incorporate and promote water-wise landscaping practices as a key component of the education campaign to encourage sustainable water use in a drought -prone climates. • The Escondido FSC to assist in delivering outreach, assistance, training, and promoting fire-adapted community programs. • Address materials, labor, and safety considerations, and note that the Escondido FSC can provide support in these areas.	Reduce human-caused wildfire risk, enhance preparedness, and build community resilience.	Review and update outreach regularly; track participation and engagement; adjust strategies to maximize impact.	• CAL FIRE Grant Programs • FEMA Fire Prevention and Safety Grants (FP&S) • Firewise Communities Program • California Fire Foundation Grant Programs
FAC3		H	Spring 2027	**ArcGIS Wildfire Resilience Hub Development** Develop an interactive public-facing ArcGIS hub site to centralize CWPP content, wildfire risk mapping, project tracking, and community engagement tools.	Planning area	City of Escondido (lead)	• Build a public hub with QWRA maps, treatment areas, and risk data. • Include a secure internal portal for project tracking, funding milestones, and interagency coordination. • Display measurable progress indicators for public transparency (e.g., acres treated, dollars invested).	Improve public access to wildfire information and enhance coordination between agencies.	Update hub content quarterly; maintain GIS layers and progress data.	• USFS Community Wildfire Defense Grant (CWDG) • CAL FIRE Wildfire Prevention Grants

Project ID	Status	Priority (H,M,L)	Timeline for Action	Project Description	Location	Land Ownership/ Lead Agency	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FAC4		H	Spring 2027	**Community Resilience Resource Network** Designate and equip community centers or public facilities as resilience hubs with backup power, cooling, emergency communications, and shelter-in-place capacity during wildfire events.	Planning area	City of Escondido, Rincon del Diablo FPD, community organizations	• Identify suitable facilities and assess infrastructure needs. • Install backup power, HVAC, communications equipment, and emergency supplies. • Develop operational protocols for shelter-in-place during wildfire and heat emergencies. • Train staff and volunteers on emergency hub operations.	Provide safe shelter and essential services during wildfire and heat emergencies, especially for vulnerable populations.	Conduct annual readiness inspections.	• Cal OES Resilience Grants
FAC5		H	Fall 2026	**Enhance Homeowner Address Visibility for Emergency Response** Implement a program to improve the visibility of homeowner address signage, particularly in areas with long driveways or obstructed views.	Planning area, especially WUI and high-risk areas with poor signage	City of Escondido, Rincon del Diablo FPD, planning and building departments, HOAs, real estate associations	• Assess current address visibility in high-risk or hard-to-access areas. • Develop and distribute guidelines for highly visible, reflective address signage that can be easily seen from the roadway. • Collaborate with homeowners to install or upgrade address signs, prioritizing properties with long driveways or blocked views. • Conduct outreach and education to raise awareness about the importance of address visibility for emergency response. • Review the Fallbrook program and other successful models to identify effective signage standards and materials.	Enhance the ability of emergency responders to quickly and accurately locate properties during critical incidents.	Schedule periodic reviews to ensure address signs remain visible and in good condition. Encourage homeowners to maintain signage and report damage or visibility issues.	• CAL FIRE Grant Programs • State Farm Good Neighbor Citizenship Grants • FEMA Fire Prevention and Safety Grants (FP&S)
FAC6		H	Spring 2027	**Defensible Space and Home Hardening Program** Promote, monitor, and enforce wildfire mitigation standards for Escondido residents, especially in WUI and high-risk areas.	WUI and high-risk neighborhoods in Escondido and Rincon del Diablo FPD	City of Escondido, Rincon del Diablo FPD, planning/building departments, HOAs, insurance partners, local contractors	• Enforce defensible space standards and encourage home hardening through education, inspections, and incentives. • Offer resources and programs for defensible space, fuels disposal, and structural improvements. • Partner with landscapers, architects, and contractors to promote Firewise practices. • Educate homeowners on mitigation strategies and available support. • Explore insurance incentives for compliant properties.	Reduce wildfire risk and property loss by increasing resident participation in defensible space and home hardening.	Annually evaluate program effectiveness, track participation, and update outreach as needed.	• CAL FIRE Wildfire Prevention Grants Program • FEMA Assistance to Firefighters Grants (AFG) • California Fire Safe Council Grant
FAC7		M	Fall 2027	**Annual Multi-Spectral Vegetation and Defensible Space Monitoring** Implement a citywide, high-resolution multi-spectral aerial monitoring program to map and analyze vegetation conditions, defensible space compliance, and wildfire risk across public property, open space, and private parcels.	Planning area	City of Escondido	• Classify vegetation and assess fuel loads in open space and WUI areas. • Overlay defensible space buffers on individual parcels for compliance tracking and resident education. • Maintain an annual imagery archive to measure changes, treatment effectiveness, and regrowth trends. • Map and integrate dip sites, staging locations, and other firefighting infrastructure into preplans. • Use vegetation and infrastructure data to support grant applications, hazard prioritization, and insurance outreach. • Share risk maps publicly to improve community awareness and transparency. • The program uses fixed-wing aircraft equipped with 4–6-inch resolution, 4-band multi-spectral cameras to capture annual orthomosaics of the city. • Use imagery to inventory critical infrastructure, identify and map water dip sites, locate drought-resilient staging areas, and integrate these resources into preplans for fire response. • This technology provides defensible, data-driven priorities that align with CWPP objectives and strengthens the City's position in grant applications.	Provide quantitative vegetation and defensible space data for enforcement, public education, and grant applications. Prioritize mitigation in high-risk locations based on vegetation load, slope, and structural vulnerability. Enhance pre-fire intelligence for first responders, improving safety and tactical decision-making.	Conduct annual flights and imagery processing. Update classification models and defensible space overlays annually. Archive all imagery and maintain change-detection capabilities for long-term trend analysis. Review and update mapped firefighting infrastructure annually.	• CAL FIRE Wildfire Prevention Grants (mapping and defensible space enforcement) • USFS Community Wildfire Defense Grants – Planning • Cal OES • Climate Investments – Priority Population and Resilience Projects

Project ID	Status	Priority (H,M,L)	Timeline for Action	Project Description	Location	Land Ownership/ Lead Agency	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FAC8		M	Spring 2028	**Firewise USA Communities Program** Support Escondido neighborhoods in achieving Firewise USA recognition to boost wildfire safety and community resilience.	Escondido neighborhoods, especially in WUI and high-risk areas	City of Escondido, Rincon del Diablo FPD, CAL FIRE, community groups, homeowner associations (HOAs), Tribal partners	• Collaborate with local leaders and statewide Firewise coordinators to launch Firewise USA initiatives. • Conduct community fire risk assessments, and guide residents in developing and implementing safety plans. • Educate landowners on fire-safe practices and encourage participation through outreach and potential incentives. • Foster community champions to sustain engagement and action.	Increase neighborhood wildfire preparedness, safety, and resilience through education and community-driven action.	Regularly review and update safety plans; monitor implementation and reassess risks as needed.	• CAL FIRE Grant Programs • Firewise Communities Program • California Fire Safe Council Grant Programs • California Fire Foundation Grant Programs
FAC9		M	Fall 2027	**Funding Support for Underserved and Vulnerable Populations** Provide financial assistance to help Escondido's most at-risk residents reduce wildfire hazards and improve evacuation readiness.	Planning area, prioritizing high-risk and underserved neighborhoods	City of Escondido, Rincon del Diablo FPD, community leaders, HOAs, nonprofits	• Identify and prioritize vulnerable populations (elderly, disabled, low-income). • Work with local advocacy groups to compile a list of residents with functional needs (right term?) who are interested in receiving additional support for wildfire mitigation and evacuation. • Pursue grants and funding to support home hardening, defensible space, and evacuation assistance. • Collaborate with local organizations to reach and assist those in need.	Protect life and property for Escondido's most vulnerable residents during wildfire events.	Annually track and review assistance provided and outcomes for vulnerable households.	• FEMA Assistance to Firefighters Grants (AFG) and SAFER • California Fire Foundation Grant Programs • California Community Foundation Wildfire Recovery Fund • State Farm Good Neighbor Citizenship Grants
FAC10		M	Spring 2028	**Develop Evacuation Strategies for Remote Communities** Create tailored evacuation strategies for remote communities by identifying safe evacuation routes, addressing unique logistical challenges, and developing clear communication plans to ensure timely and effective evacuations during emergencies.	Rural communities within the planning area	City of Escondido, Rincon del Diablo FPD	• Conduct risk assessments to understand community-specific evacuation challenges and hazards. • Identify and map primary and secondary evacuation routes, considering road conditions and potential obstacles. • Collaborate with local agencies, first responders, and community members to validate routes and contingency plans. • Develop communication protocols for timely notification and guidance during evacuation events. • Provide education and outreach to residents on evacuation procedures and preparedness.	Enhance the safety and preparedness of remote community residents during emergencies.	Review and update evacuation strategies regularly, especially after drills or real events. Conduct periodic evacuation drills and incorporate community feedback.	• CAL FIRE Grant Programs • FEMA Hazard Mitigation Grant Program (HMGP) • USFS Community Wildfire Defense Grant (CWDG) • California Fire Safe Council Grant Programs
FAC11		M	Spring 2029	**Wildfire Awareness Signage and Information Dissemination** Enhance public awareness of wildfire risk and prevention in Escondido.	Planning area, including public open spaces, highways, and high-traffic areas	City of Escondido, Rincon del Diablo FPD, local agencies, community partners	• Install and maintain wildfire awareness signage at key locations. • Use electronic signs, flyers, and seasonal prevention messages in public areas. • Share wildfire warnings, safety tips, and fire danger ratings via social media, local news, and community platforms. • Regularly update outreach methods based on community engagement and feedback. • Explore feasibility of engaging with Interfaith, Escondido's lead homeless services organization, to ensure that fire awareness reaches homeless populations, which are frequent ignition sources in Escondido.	Reduce wildfire risk and protect lives and property through effective public education.	Periodically assess signage placement and outreach effectiveness; track engagement and adapt strategies as needed.	• CAL FIRE Grant Programs • FEMA Fire Prevention and Safety Grants (FP&S) • State Farm Good Neighbor Citizenship Grants • California Fire Foundation Grant Programs

Project ID	Status	Priority (H,M,L)	Timeline for Action	Project Description	Location	Land Ownership/ Lead Agency	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
FAC12		L	Fall 2028	**Advanced Risk Assessments for Structural Ignitability and Defensible Space** Use field surveys and emerging technologies to assess wildfire risks at the parcel level in Escondido's high-risk communities.	High-risk WUI neighborhoods in Escondido and Rincon del Diablo FPD	City of Escondido, Rincon del Diablo FPD, planning/building departments, technology partners	• Integrate remote sensing, GIS mapping, and parcel-level data to identify areas with high structural ignitability and insufficient defensible space. • Conduct targeted, field-based assessments using NFPA 1144 or similar standards to ground-truth remote data. • Generate detailed maps and reports to pinpoint specific properties and neighborhoods needing improved outreach and mitigation. • Deliver personalized recommendations and educational materials to property owners based on assessment results. • Engage residents through digital platforms, workshops, and feedback opportunities. • Maintain photographic and digital records to track hazards and progress.	Increase community understanding of wildfire risk, prioritize outreach, and drive effective mitigation at the property level.	Regularly update risk models and assessments using new data; monitor outreach effectiveness and community response; adjust strategies based on results.	• CAL FIRE Wildfire Prevention Grants Program • FEMA Hazard Mitigation Grant Program (HMGP) • USFS Community Wildfire Defense Grant (CWDG) • Esri Environmental Systems Research Institute, Inc. Grants
FAC13		L	Fall 2026	**Framework for Updating HOA and Subdivision Covenants** Enable Escondido HOAs and subdivisions to adopt wildfire-resilient policies and practices.	Planning area HOAs and subdivisions, especially near wildland areas	City of Escondido, Rincon del Diablo FPD, HOAs, urban planners, fire safety experts	• Develop a process for revising HOA covenants to support defensible space, vegetation management, and evacuation planning. • Identify wildfire planning vulnerabilities within communities. • Engage residents through surveys, workshops, and meetings. • Collaborate with fire and planning professionals to guide updates. • Provide resources and education to help residents prioritize fire prevention.	Reduce wildfire risk and promote cohesive, fire-adapted community development.	Review effectiveness annually; maintain ongoing communication and outreach with HOAs and residents.	• CAL FIRE Grant Programs • California Fire Safe Council Grant Programs
FAC14		L	Spring 2027	**Wildfire Risk Communication for Real Estate and Development** Ensure real estate professionals and buyers are informed about wildfire risks and mitigation in Escondido.	Planning area, especially WUI and high-risk areas	City of Escondido, Rincon del Diablo FPD, planning and building departments, real estate associations, insurance agents	• Provide real estate agents, developers, architects, and insurance agents with property-specific wildfire risk data, defensible space needs, and other mitigative action. • Offer support to citizens regarding insurance concerns, and provide information on the dispute process. • Link to local wildfire plans and resources on real estate platforms. • Educate buyers and sellers about wildfire hazards and mitigation opportunities.	Increase awareness of wildfire risks in property transactions, and encourage proactive mitigation by property owners.	Periodically review and improve communication strategies with real estate and development sectors.	• CAL FIRE Grant Programs • FEMA Fire Prevention and Safety Grants (FP&S) • State Farm Good Neighbor Citizenship Grants • California Fire Foundation Grant Programs

4.3 COHESIVE STRATEGY GOAL 3: WILDFIRE RESPONSE

Recommendations for safe, effective, efficient risk-based wildfire management decisions and actions that jurisdictions could undertake to improve wildfire response.

4.3.1 Recommendations for Improving Fire Response Capabilities

Enhancing wildfire preparedness and response in Escondido requires a holistic strategy that emphasizes prevention, readiness, capacity, and community safety. This includes maintaining high standards for risk reduction across the city, ensuring the community and responders are well-prepared and fostering ongoing coordination among the community to effectively address wildfire challenges and prevent loss.

Recent wildfires in the region have demonstrated the complexity of responding across diverse landscapes and the importance of cooperation among government entities, response agencies, and the community. During multiple wildfire incidents, resources are often stretched thin. This makes it essential that residents are well-informed about relevant safety protocols and prepared to respond appropriately. Additionally, it is essential to strengthen enforcement and prevention efforts targeting illegal activities that increase fire risk, such as outdoor cooking, unauthorized heating, and fireworks.

Table 4.4 provides recommendations for improving firefighting capabilities. Many of these recommendations are general in nature to be tailored for response agencies across the city.

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Table 4.4. Recommendations for Safe and Effective Wildfire Response

Project ID	Status	Priority (H,M,L)	Timeline for Action	Project Description	Location	Land Ownership/ Lead Agency	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
WR1		H	Fall 2026	**Regular Inspection and Maintenance of Fire Hydrants** Implement a comprehensive program to routinely inspect, test, and maintain fire hydrants to ensure reliable operation and accessibility for emergency response.	Planning Area (with focus on Areas with reported hydrant issues) e.g., Candlelight Gl.	City of Escondido, Rincon del Diablo FPD,	• Conduct scheduled inspections of all fire hydrants to assess condition and operability. • Perform flow and pressure testing to verify performance standards. • Identify and promptly repair or replace damaged, obstructed, or non-functional hydrants. • Coordinate with local fire departments and water utilities to address issues and streamline repairs.	Ensure hydrants are operational and accessible for fire suppression and emergency response.	Schedule regular inspections (e.g., semi-annual or annual) and after significant incidents. Maintain detailed records of inspections, maintenance, and repairs.	• CAL FIRE Grant Programs • FEMA Fire Prevention and Safety Grants (FP&S) • State Farm Good Neighbor Citizenship Grants • California Fire Foundation Grant Programs
WR2		H	Spring 2027	**Aerial Water Source Assessment and Mapping** Identify, assess, and map water sources suitable for aircraft drafting to support wildfire suppression operations across Escondido. This project will improve aerial response capacity by locating reliable, accessible water sources and identifying gaps in coverage.	Planning Area	Escondido Fire Department, Rincon del Diablo FPD, CAL FIRE (San Diego Unit), City Public Works/Utilities Department, SDG&E (for access or safety around infrastructure), USFS or nearby agencies (if mutual aid involved)	• Identify, assess, and map local water sources available for drafting during wildland incidents • Coordinate with CAL FIRE and other partners to confirm the location and condition of aerial refill sites • Identify areas to pre-stage portable water tanks in strategic locations to support helicopter operations • Pursue funding opportunities for water system upgrades and drought-resilient infrastructure • Integrate aerial resource planning into local fire response protocols	Improve water accessibility, availability, and fire suppression capacity	Convene Working Group: Coordinate with agencies listed under Land Ownership/Lead Mapping & Prioritization Develop geospatial maps showing: Current aerial refill sites, Strategic locations for portable tank staging, Gaps in water source coverage. Prioritize sites based on risk and operational need Field Verification Coordinate aerial resource planning with CAL FIRE and local partners	• Hazard Mitigation Grant Program (HMGP) FEMA / Cal OES • USFS Community Wildfire Defense Grant (CWDG) • CAL FIRE Fire Prevention Grants Program • Regional Planning Assistance Grants SANDAG or local COGs
WR3		H	Fall 2026	**Code Enforcement and Defensible Space Inspection Program** Strengthen enforcement of vegetation management and defensible space standards to reduce wildfire risk in Escondido.	Planning area, with focus on high-risk neighborhoods and WUI	City of Escondido, Rincon del Diablo FPD, code enforcement, fire departments, planning/building departments	• Increase staffing for dedicated defensible space and code enforcement positions. • Provide specialized training on wildfire risk reduction, hazardous vegetation, and abatement practices. • Use technology (GIS mapping, mobile inspection apps) to track violations, inspections, and compliance. • Conduct routine property inspections and enforce local and state vegetation management codes. • Educate residents on requirements and best practices; offer workshops and outreach. • Ensure clear enforcement processes and follow-up for non-compliance. • Emphasize the intent for increased enforcement of illegal activities, such as outdoor cooking, heating, and fireworks.	Protect life, property, and resources by ensuring consistent vegetation management and defensible space compliance.	Regularly monitor and evaluate enforcement and inspection activities; update training and outreach; track community compliance and program effectiveness.	• FEMA Assistance to Firefighters Grants (AFG) • CAL FIRE Wildfire Prevention Grants Program • California Fire Safe Council Grant Programs
WR4		H	Fall 2026	**Full-Time Fire Department Staffing and Retention Program** Assess, expand, and retain full-time fire personnel to meet Escondido's emergency response needs.	City of Escondido and Rincon del Diablo FPD	City of Escondido Fire Department, Rincon del Diablo FPD, Human Resources departments	• Conduct a comprehensive assessment of current and future full-time staffing needs for both agencies. • Implement targeted recruitment strategies to attract qualified candidates. • Develop retention initiatives—including professional development, recognition, and career advancement opportunities—based on regular staff feedback. • Establish formal mechanisms (e.g., surveys, focus groups, feedback sessions) to gather and act on employee input regarding job satisfaction and workplace improvements. • Foster a positive work environment that supports staff well-being and growth.	Ensure sufficient and stable full-time fire staffing to provide timely and effective emergency response for the community.	Regularly review staffing levels, retention rates, and staff feedback; adapt recruitment and retention strategies as needed.	• FEMA Staffing for Adequate Fire and Emergency Response (SAFER) • FEMA Assistance to Firefighters Grants (AFG) • California Fire Foundation Grant Programs

Project ID	Status	Priority (H,M,L)	Timeline for Action	Project Description	Location	Land Ownership/ Lead Agency	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
WR5		H	Spring 2027	**Wildfire Response Coordination and Pre-Planning Program** Enhance wildfire response speed and coordination, especially in rural and WUI areas of Escondido.	Rural Escondido, WUI neighborhoods, Rincon del Diablo FPD	City of Escondido Fire Department, Rincon del Diablo FPD, CAL FIRE, state/federal agencies, utilities	• Conduct regular joint training and pre-season drills with all response partners. • Maintain up-to-date communications, equipment lists, and contact information among local, state, and federal responders. • Incorporate solution for limited access issues within the General Plan Safety Element • Regularly update and review mutual aid and cooperative agreements. • Map and secure access points, gates, and water sources in rural and WUI areas; ensure agreements for emergency access. • Strategically place equipment caches to reduce response times. • Host annual coordination meetings and train new staff on roles and procedures.	Improve wildfire response times and effectiveness, reduce risk to life and property, and clarify agency responsibilities.	Annually review and update agreements, water resources, and access plans; evaluate training and coordination efforts for continuous improvement.	• FEMA Hazard Mitigation Grant Program (HMGP) • USFS Community Wildfire Defense Grant (CWDG) • Homeland Security Grant Program (HSGP) • CAL FIRE Grant Programs
WR6		H	Spring 2027	**Disaster Debris Removal Plan** Establish a clear, actionable plan for managing wildfire and disaster debris, ensuring coordinated response and rapid recovery for the City of Escondido and Rincon del Diablo FPD.	City of Escondido and Rincon del Diablo FPD	City of Escondido, Rincon del Diablo FPD, Code Enforcement, fire departments, planning/building departments, emergency management	• Assemble a cross-agency planning team. • Identify and assess potential debris staging and disposal sites. • Develop step-by-step procedures for debris collection, sorting, transport, and disposal. • Provide training and public communication protocols. • Integrate FEMA and Cal OES standards to ensure eligibility for federal aid.	Achieve compliance with state and federal debris management requirements. Maximize FEMA and state reimbursement opportunities. Accelerate safe debris removal and community recovery. Strengthen coordination among agencies and departments.	Review and update the plan at least every 5 years or after major incidents. Conduct annual training exercises for staff and partners. Monitor and document debris operations and reimbursement outcomes to guide improvements.	• State Homeland Security Grant Program • General Fund
WR7		H	Fall 2027	**Extreme Wind Wildfire Response Enhancement** Mitigate the effects of extreme wind on wildfire response and containment in Escondido, especially in rural and WUI areas.	Planning area, with focus on wind-prone and high-risk areas	City of Escondido Fire Department, Rincon del Diablo FPD, emergency management, weather services	• Integrate weather data and wind forecasts into wildfire response planning. • Use wind modeling tools (e.g., WindNinja), satellite imaging, drones, and remote sensors for planning, early detection, and monitoring. • Implement targeted fuel treatments and fuel breaks to slow fire spread during wind events. • Train and equip fire personnel for rapid response to wind-driven wildfires. • Maintain efficient communication channels among all response agencies.	Enhance wildfire response and containment during extreme wind events, reducing risk to life and property.	Provide regular staff training; annually assess and update protocols based on incident reviews and new technology.	• FEMA Hazard Mitigation Grant Program (HMGP) • CAL FIRE Grant Programs • USFS Community Wildfire Defense Grant (CWDG)
WR8		H	Fall 2026	**Wildfire Personnel Training Program** Enhance the skills and readiness of Escondido's emergency responders for wildfire management.	City of Escondido and Rincon del Diablo FPD	City of Escondido Fire Department, Rincon del Diablo FPD, training providers	• Assess training needs based on current skills and emerging wildfire challenges. • Utilize established National Wildfire Coordinating Group training regimen, tailoring to local conditions as needed. • Conduct regular classroom and hands-on training in wildfire behavior, suppression, safety, and equipment. • Offer certification and continuing education to ensure responders are up to date on best practices and new technologies. • Track performance metrics to measure training effectiveness and guide improvements.	Strengthen emergency response capabilities for wildfire incidents.	Monitor participation, certification rates, and responder performance; adjust training as needed based on results and feedback.	• FEMA Assistance to Firefighters Grants (AFG) • CAL FIRE Grant Programs • California Fire Foundation Grant Programs

Project ID	Status	Priority (H,M,L)	Timeline for Action	Project Description	Location	Land Ownership/ Lead Agency	Methodology/Approach	Serves To:	Monitoring/Maintenance Requirements	Funding Sources
WR9		H	Spring 2027	**Wildfire Equipment and Apparatus Upgrade Program** Ensure Escondido's emergency responders have modern, reliable equipment for effective wildfire response.	City of Escondido and Rincon del Diablo FPD	City of Escondido Fire Department, Rincon del Diablo FPD, equipment vendors	• Assess current equipment and apparatus needs; procure upgrades to address gaps. • Implement a regular maintenance schedule to keep all equipment in optimal condition. • Provide training for responders on equipment use and care. • Gather responder feedback on equipment performance and make adjustments as needed. • Maintain detailed maintenance and equipment status logs.	Maintain a ready, well-equipped fleet for wildfire suppression and emergency response.	Track equipment status, maintenance records, and responder feedback; review and update procurement and maintenance plans regularly.	• FEMA Assistance to Firefighters Grants (AFG) • CAL FIRE Grant Programs • California Fire Foundation Grant Programs
WR10		H	Fall 2027	**Firefighting Fleet Modernization Forecasting Program** Improve forecasting system for upgrade Escondido's firefighting fleet to ensure reliable, effective wildfire response.	City of Escondido and Rincon del Diablo FPD	City of Escondido Fire Department, Rincon del Diablo FPD, fleet management	• Increase capacity and capabilities for assessing the current fleet to identify aging or high-maintenance vehicles. • Develop a strategic plan for forecasting the need to replace and acquire vehicles based on operational needs and service demands. • Reassign or decommission underutilized vehicles to maximize efficiency. • Maintain an ongoing schedule for fleet maintenance and upgrades.	Improve wildfire response capability, reduce downtime, and enhance community resilience with a modern, reliable fleet.	Regularly evaluate fleet performance, track upgrades, and adjust plans to meet operational goals and community needs.	• FEMA Hazard Mitigation Grant Program (HMGP) • FEMA Pre-Disaster Mitigation (PDM)
WR11		H	Spring 2028	**Fire Facility Modernization Program** Upgrade and modernize Escondido's fire stations to meet current standards and support future staffing and operational needs.	City of Escondido and Rincon del Diablo FPD	City of Escondido Fire Department, Rincon del Diablo FPD, facilities management	• Assess and upgrade existing fire stations to provide modern facilities, equipment, and technology. • Ensure stations accommodate current and future staffing models, training, and administrative needs. • Expand or enhance office, storage, training, and parking space as needed. • Support fire suppression, prevention, community engagement, and wildfire mitigation programs with improved facilities.	Enhance emergency response capability, staff readiness, and community safety through modern, well-equipped fire facilities.	Regularly evaluate facility conditions, maintenance needs, and operational effectiveness; monitor funding sources and project progress.	• FEMA Hazard Mitigation Grant Program (HMGP) • FEMA Pre-Disaster Mitigation (PDM) • CAL FIRE Grant Programs • California Fire Foundation Grant Programs
WR12		H	Fall 2026	**Post-Fire Coordination Group** Establish a coordination group to support effective recovery from future fire events.	City of Escondido Planning Area	City of Escondido, San Diego County officials, utility providers, local Fire Safe Councils, and neighborhood leaders	• Form a standing group with representatives from city departments, county emergency services, utilities, and community organizations. • Develop protocols and communication strategies for post-fire coordination, including damage assessment, debris removal, utility restoration, and community assistance. • Conduct tabletop exercises and maintain a current contact roster and communication platform (e.g., SharePoint or Everbridge). • Integrate group functions into existing emergency operations plans	Coordinates post-fire response efforts across city departments, county agencies, utilities, and community partners. Facilitates clear and consistent communication with the public during the recovery phase. Streamlines recovery actions such as damage assessments, debris removal, utility restoration, and resource distribution.	Form A working group and designate a lead agency. Formalize partnerships through MOUs, holding regular meetings and trainings, developing recovery protocols and communication templates, and maintaining a secure, centralized platform for data sharing.	• Hazard Mitigation Grant Program (HMGP) FEMA / Cal OES • Pre-Disaster Mitigation (PDM) FEMA / Cal OES • Homeland Security Grant Program (HSGP) DHS / Cal OES • Community Wildfire Defense Grant (CWDG) USDA Forest Service • Fire Prevention Grants Program CAL FIRE • Regional Planning Assistance Grants SANDAG or local COGs
WR13		H	Spring 2027	**Emergency Transportation for Vulnerable Populations** Facilitate evacuation and transportation for Escondido's vulnerable residents during disasters.	Planning area, with focus on high-risk and underserved neighborhoods	City of Escondido, Rincon del Diablo FPD, emergency management, transportation providers, community organizations	• Identify and map vulnerable populations (elderly, disabled, children, etc.). • Develop a comprehensive emergency transportation plan outlining resources, protocols, and responsible agencies. • Assess and coordinate available transportation options (buses, vans, ambulances, etc.). • Provide clear, accessible information to the public and targeted outreach to vulnerable groups.	Facilitate evacuation and support Escondido's most at-risk residents during emergencies and disasters.	Annually review and update transportation plans; assess effectiveness after evacuation events; gather feedback from participants.	• FEMA Hazard Mitigation Grant Program (HMGP) • FEMA Assistance to Firefighters Grants (AFG) • State Farm Good Neighbor Citizenship Grants • California Fire Foundation Grant Programs

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CHAPTER 5 MONITORING AND EVALUATION

Developing an action plan and assessment strategy that clearly identifies roles, responsibilities, funding needs, and realistic timelines for implementing high-priority projects is a key step in advancing the Escondido CWPP. The previous chapter outlines recommended project timelines and monitoring protocols, which are further detailed below.

All stakeholders and signatories to this CWPP share the goal of producing meaningful, measurable outcomes. However, on-the-ground wildfire risk reduction efforts typically take years to complete and often require ongoing maintenance, such as annual or seasonal treatments. Given the investment of time, resources, and funding, it is important to establish a way to evaluate whether the plan's goals and objectives are being achieved as intended.

Monitoring and reporting efforts contribute to a long-term understanding of how ecological conditions change over time and how fire mitigation activities affect both the environment and surrounding communities. As the CWPP is updated in the future, it will also be necessary to track policy changes, shifts in stakeholder roles, and evolving levels of community preparedness. These elements are critical to future revisions and addendums to the plan (Brown 1974; CA WFRTF 2023; Ottmar et al. 2000).

It is recommended that project monitoring be implemented as a collaborative effort. There are many available tools and resources for designing a community-based, multi-party monitoring program that would support and enhance the effectiveness of this CWPP. Multi-party monitoring typically involves a mix of residents, community-based organizations, regional interest groups, and public agencies. This approach builds trust among partners and improves public understanding of how fire mitigation and ecological restoration projects affect the landscape.

While collaborative monitoring may take more time due to the coordination it requires, the benefits often outweigh the costs. To be successful, a clear and well-defined monitoring plan should be developed early in the implementation process.

Table 5.1 outlines monitoring strategies that correspond to different CWPP recommendations, including both measurable and qualitative indicators. These strategies are intended to track the progress and long-term sustainability of projects. However, it is important to note that:

- These strategies are not comprehensive.
- Their implementation will depend on available funding, staffing, and partner capacity.

Ongoing collaboration, transparency, and adaptability will be essential to keeping the CWPP relevant and effective as conditions and priorities change in Escondido over time.

Table 5.1. Recommended Monitoring Strategies

Monitoring Approach	Method / Tool	Responsible Party	Purpose
Hazardous Fuels Projects	Use GIS-based tracking tool with project boundaries and attributes. Integrate wildfire hazard layers to show risk reduction progress.	City, Core Team	Visualize progress, identify treatment gaps, support strategic planning.
Photographic Monitoring	Establish permanent photo points with GPS coordinates. Document pre- and post-treatment landscapes, evacuation routes, and events. Store securely in an online archive.	Core Team	Track visual change, support public communication, validate results.
Multispectral Imaging (Citywide)	Use aerial or satellite-based multispectral imaging to monitor vegetation condition, treatment effectiveness, and regrowth over time. Aligns with GIS and fuels tracking layers.	City, Core Team, GIS specialists	Detect vegetation stress, track landscape recovery, support multiple monitoring metrics.
Acres Treated (by fuel type and method)	Use spatial database using GPS and GIS. Include treatment type (e.g., thinning, grazing, prescribed fire). Link to modeling tools.	Core Team	Quantify implementation, support performance-based funding, assess behavior change.
Home Ignition Zones / Defensible Space	Use web-based mapping and self-reporting tool for documenting defensible space work. Include treatment date and type.	Homeowners with Core Team support	Reduce structural vulnerability, track community participation.
Public Participation	Maintain attendance records for workshops, tours, classes, and hearings.	Core Team	Evaluate engagement and cultural shift toward fire preparedness.
Homeowner Outreach	Maintain outreach database logging door-to-door visits, phone calls, and event contacts.	Fire Safe Council, Core Team	Evaluate effectiveness and saturation of educational campaigns.
Local Job Creation	Track contract and grant-supported jobs through project reporting.	Core Team	Measure local economic impact of CWPP implementation.
Education and Outreach Activities	Online database of events, materials distributed, participant numbers, and feedback.	Core Team	Track delivery of education objectives and community reach.
Emergency Response Capacity	Maintain inventory of fire response staffing, equipment, and interagency coordination agreements.	Core Team	Evaluate operational readiness and mutual aid capabilities.
Policy and Code Changes	Document local planning and regulatory changes related to wildfire safety and land use.	Core Team	Monitor institutional support for risk reduction.
Stakeholder Involvement	Maintain an updated list of engaged partners and track turnover or new additions.	Fire Safe Council, Core Team	Assess community collaboration and planning resilience.
Wildfire Impacts Over Time	Maintain records of wildfire acreage, injuries, fatalities, structural damage, suppression costs, and recovery efforts. Compare annually with historic averages.	Core Team	Evaluate long-term effectiveness of CWPP strategies.

5.1 FUEL TREATMENT MONITORING

It is important to evaluate whether fuel treatments have accomplished their defined objectives and whether any unexpected outcomes have occurred. Monitoring ensures that treatment effectiveness, ecological impacts, and maintenance needs are clearly understood and can guide adaptive management.

The strategies outlined in this section consider several variables:

- **Do the priorities identified for treatment reflect the goals stated in the plan?** Monitoring protocols help answer this by providing both qualitative and quantitative feedback.
- **Can there be ecological consequences associated with fuels work?** Items to consider include post-treatment soil disturbance, erosion, or invasive species encroachment. Even relatively low-cost monitoring may help reduce long-term management costs and ecological consequences.
- **Vegetation will grow back.** As a result, fuel break maintenance and fuels modification in both the home ignition zone and at the landscape scale require periodic assessment. Monitoring these changes helps decision-makers determine the most effective treatment intervals and identify where reentry is needed.

Monitoring is recommended for all types of fuels treatment. For example, in addition to assessing mechanical treatments, comprehensive post-fire monitoring can help evaluate whether pre-fire fuels reduction treatments altered fire behavior and intensity. Monitoring may also capture broader ecological effects, such as wildlife responses, vegetation regeneration, and changes to soil chemistry or hydrology. Monitoring outcomes inform adaptive management, which involves refining future actions based on observed results. Monitoring can also address legal and economic questions and offer valuable educational opportunities for students, interns, and volunteers.

Monitoring activities should be tailored to each project's goals, location, and available resources. The timeline and method used will depend on the size, sensitivity, and scope of the treatment. The following methods range in complexity and cost, offering scalable approaches appropriate for different project teams and participants.

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, wood posts, or 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, like multi-spectral remote sensing, 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.

5.1.1 Remote Sensing Monitoring

In addition, new technology is helping make many monitoring practices easier and more efficient. It also allows for greater scalability, especially in larger or more remote treatment areas. Multispectral remote sensing offers a high-efficiency, repeatable method for monitoring fuel treatments using drone, fixed-wing, or satellite-based imagery (CA WFRTF 2023; USFS 2022). Vegetation changes can be assessed through spectral indices such as Near Infrared, NDVI (Normalized Difference Vegetation Index) and/or NBR (Normalized Burn Ratio), which allow for detection of treatment impacts, regrowth trends, and invasive species spread.

This technology can also be used to analyze defensible space around structures by measuring vegetation cover, canopy density, and proximity of fuels within defined buffer zones. Automated classification or manual interpretation of high-resolution imagery can help verify compliance with defensible space guidelines and identify areas needing maintenance or follow-up treatment.

Multispectral monitoring is increasingly used for:

- Pre-treatment vegetation analysis
- Post-treatment vegetation recovery assessments
- Burn severity mapping
- Detection of type conversion or invasive encroachment
- Tracking effectiveness of large-scale treatments over time
- Evaluating defensible space conditions around homes and critical infrastructure

This method is best suited for agencies or research partners with GIS and imagery analysis capacity, but it can also be contracted out for one-time or periodic evaluations. When paired with ground-truthing, remote sensing provides a powerful tool for long-term wildfire resilience planning.

5.2 IMPLEMENTATION

This CWPP provides recommendations for prioritized fuels reduction projects, strategies to reduce structural ignitability, and methods to improve public education and outreach. Implementation of these recommendations must be tailored to each specific project and adapted to the unique conditions, resources, and regulatory context within the City of Escondido and the Rincon del Diablo FPD.

On-the-ground implementation will rely on the project recommendation matrices provided in Chapter 4. These matrices offer a framework for translating planning priorities into action. Prior to implementation, each project will require development of an assessment strategy to determine next steps and ensure alignment with CWPP objectives.

This phase includes identifying:

- Responsible parties and their roles, including local agencies, fire departments, community groups, and landowners
- Funding sources and needs
- Timelines for project initiation and completion
- Permitting or environmental compliance requirements, if applicable

The CWPP recommends establishing an implementation working group or continuing Core Team to oversee progress, track milestones, and coordinate outreach and engagement. Information related to funding opportunities and grant programs is provided in Appendix E, which includes federal, state, and regional funding sources that may be applicable to Escondido's priority projects. Successful implementation will depend on collaboration, clear communication, and a sustained commitment from local leadership, residents, and agency partners. Integrating this plan into broader emergency preparedness, land use, and capital improvement efforts will strengthen wildfire resilience across the planning area.

5.3 CWPP EVALUATION

CWPPs are designed to reduce wildfire risk to communities and the surrounding environment. However, wildfire risk is not static. Over time, communities grow, infrastructure expands, vegetation regenerates, and environmental conditions evolve. As a result, the strategies and actions outlined in a CWPP must be dynamic and adaptable to remain effective.

Regular evaluation ensures the CWPP continues to meet its goals and provides opportunities to adjust strategies based on current conditions, emerging challenges, and new information. It is recommended that the CWPP be reviewed annually, with input from the Core Team and relevant stakeholders. These evaluations should inform annual updates to the CWPP document and its planning goals and objectives.

A structured, four-step approach is recommended for evaluating the CWPP:

Identify Objectives

Evaluate whether the CWPP is performing as intended by reviewing the original goals and how well they are being achieved across key areas:

- Structural ignitability reduction
- Fuel treatment implementation
- Public education and outreach
- Multi-agency collaboration
- Emergency response capacity

Assess the Changing Environment

Analyze how conditions in and around the community have changed since the CWPP was developed:

Population Trends

- Changes in population size and demographics
- Expansion into WUI areas
- Shifts in settlement patterns and housing distribution

Vegetation and Fuels

- Changes in fuel type, density, and continuity
- Drought impacts and vegetation stress
- Invasive species, pests, or disease-related die-off

Review Action Items

Compare actions completed to the plan's objectives to determine progress and identify remaining needs:

- Review the status of each action item (e.g., completed, in progress, not started).
- Document accomplishments and completed projects.
- Identify barriers to implementation and lessons learned.
- Establish next steps and prioritize upcoming efforts.

Assess Results and Outcomes

Evaluate the impact of CWPP implementation activities across focus areas:

Multi-Agency Collaboration

- Are original CWPP partners still engaged in implementation?
- Has the collaborative planning process supported long-term partnerships?
- Are agencies leveraging the CWPP to secure funding or align with other plans?

Risk Assessment

- Is the risk assessment being used to guide treatment priorities?
- Have any new wildfire-related policies, ordinances, or mandates been adopted?
- Are at-risk communities actively engaged in mitigation efforts?

Hazardous Fuels

- How many acres have been treated? What types of treatment were used?
- Are treatments cross-boundary or landscape-scale?
- Are residents participating in defensible space activities?

Structural Ignitability

- Have local fire codes or building ordinances been updated?
- Has structural loss occurred since CWPP development?
- Is public awareness of home hardening and fire-safe design improving?

Public Education and Outreach

- Are residents more aware of wildfire risk and mitigation strategies?
- Has outreach been inclusive of vulnerable populations?
- What types of community involvement have taken place?

Emergency Response

- Is the CWPP integrated into hazard mitigation plans or emergency operations plans?
- Has local fire response capacity changed (staffing, equipment, coverage)?
- Is the CWPP consistent with other regional or state planning efforts?

Annual evaluation is a critical component of maintaining a relevant and effective CWPP. It ensures the plan remains a living document, responsive to environmental change, community needs, and the evolving wildfire landscape. Regular input from the Core Team and community stakeholders will support shared accountability, encourage adaptive management, and strengthen Escondido's long-term wildfire resilience.

5.4 TIMELINE FOR UPDATING THE CWPP

The Healthy Forests Restoration Act (HFRA) provides flexibility in the CWPP planning process, allowing the Core Team to determine the most appropriate schedule for updates. Core Team members are encouraged to convene annually to review the project list, assess recent accomplishments, identify implementation challenges, and coordinate on funding opportunities for priority actions.

It is recommended that the evaluation framework described above be applied annually to guide updates and ensure the CWPP remains relevant and effective. A more formal revision of the plan should occur every 5 years. This 2025 CWPP serves as an update to the City of Escondido's original 2011 CWPP. The first formal update of this revised CWPP is scheduled for October 1, 2030, followed by the next update on October 1, 2035, and every 5 years thereafter.

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CHAPTER 6 HOMEOWNER ACTIONS AND RESOURCES

With adequate resources, homeowners may have the ability to significantly reduce wildfire risk through practical measures such as home hardening, which aims to reduce a home's ignitability, and by creating defensible space throughout the property and within the home ignition zone, preventing the likelihood of flames and embers reaching and igniting structures. The following includes comprehensive guidance on building resilient communities by creating defensible space; hardening the home and surrounding property to wildfire impacts; utilizing local, state, and national resources; and preparing the household for potential evacuation. Financial constraints and the complexity of mitigation can often pose significant obstacles for homeowners, so included are several resources and recommendations at varying levels of effort designed to support these actions.

6.1 DEFENSIBLE SPACE

Defensible space is a critical component of wildfire mitigation, requiring both consistent maintenance by property owners and enforcement by local fire agencies. As part of CAL FIRE, the California Board of Forestry and Fire Protection has established defensible space regulations that include an ember-resistant zone within 5 feet of structures, full vegetation clearance from 0 to 30 feet, and vegetation thinning from 30 to 100 feet in State Responsibility Areas (SRAs) and in Local Responsibility Areas (LRAs) designated as High or Very High Fire Hazard Severity Zones. These designations are common throughout Escondido (CAL FIRE 2022; City of Escondido 2025c).

6.1.1 City of Escondido Standards

While the Escondido Fire Department's Defensible Space Property Review Checklist differs in approach from the CAL FIRE standards, it shares the overarching goals of fuel reduction and minimizing structural ignitability. Property owners should be familiar with both sets of guidelines to ensure compliance.
The Escondido Fire Department checklist requires property owners to remove non-fire-resistant vegetation within a 50-foot radius of the home, thin 50% of natural vegetation, and remove dead plants and woody debris within a 50- to 100-foot perimeter (City of Escondido 2025d). It's important to note that, at the time this plan was drafted, Escondido's defensible space guidelines are under review and are expected to be updated after the publication of this plan. Homeowners are encouraged to stay informed and watch for updates from the City and Fire Department regarding any changes to these guidelines.

More details regarding Escondido's current defensible space standards can be found here: https://www.escondido.gov/DocumentCenter/View/2748/Property-Review-Checklist-PDF

6.1.2 CAL FIRE Standards

According to CAL FIRE effective defensible space consists of three zones (Figure 6.1): a fire-free area next to the home (Zone 0), a thinned and cleared secondary zone (Zone 1), and, for larger parcels, a managed transitional area (Zone 2). Together, these zones reduce fire intensity and help prevent flames from reaching the home. Defensible space also provides greater opportunities for firefighters to protect structures more safely and effectively. While it increases a home's chances of surviving a wildfire, it does not guarantee survival. Consistent application of these principles across neighborhoods benefits everyone. The three defensible space zones are described below (CAL FIRE 2022):

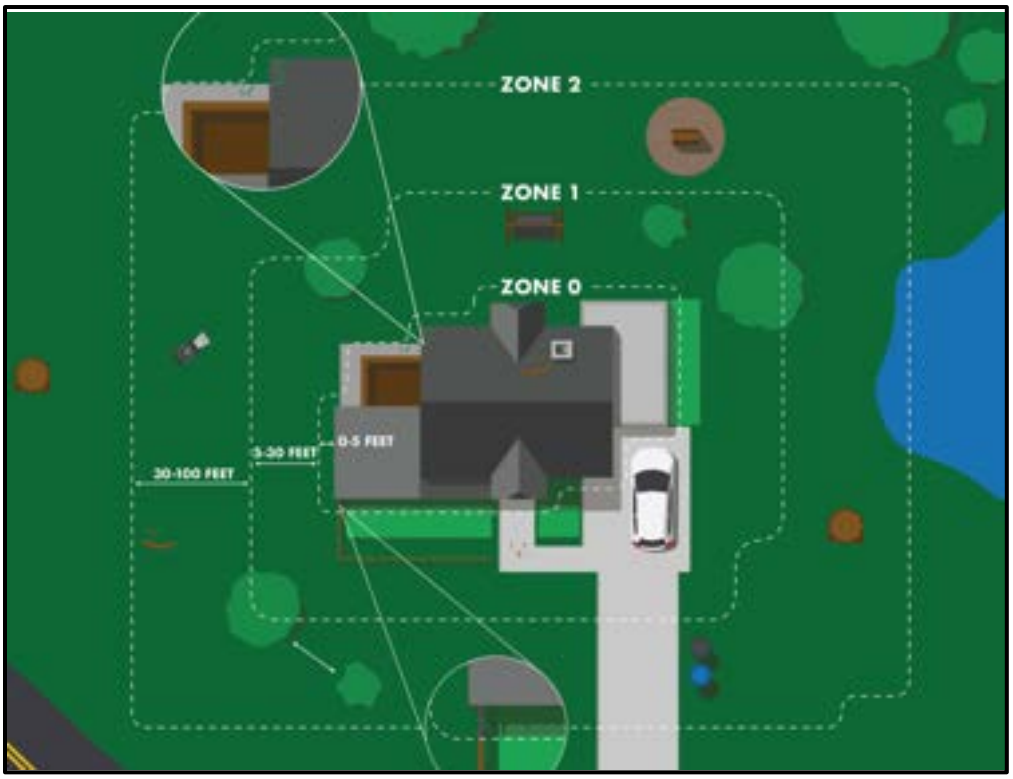

Figure 6.1. Defensible space zones as designated by CAL FIRE.
Source: https://readyforwildfire.org/prepare-for-wildfire/defensible-space/

Zone 0 – Immediate Zone: The area within 0 to 5 feet of a structure (including under decks and attachments), is the most critical for wildfire protection. This zone should be kept free of combustible materials such as plants, mulch, firewood, and debris. Only noncombustible landscaping, like gravel, is recommended. Regularly clear dead leaves, needles, and branches, especially from gutters and roofs. Trees and woody plants should be avoided, and combustible items like outdoor furniture, gates, and fences should be replaced with noncombustible alternatives or kept outside Zone 0 whenever possible (CAL FIRE 2022).

Zone 1 – Intermediate Zone: Zone 1 encompasses the first 30 feet surrounding structures and serves as a critical buffer between Zone 0 and Zone 2. The primary focus in this area is on fuel reduction and maintaining a clean, green landscape. Key recommendations include removing all dead or dying

vegetation and debris, regularly checking and clearing roofs and gutters, and maintaining at least a 10-foot clearance between chimneys and any vegetation. Trees should be pruned to keep a 10-foot distance between canopies, and any flammable items or vegetation near windows, under decks, or stairs should be removed or relocated to Zone 2. Additionally, items that could ignite, such as patio furniture or swing sets, should be separated from vegetation and other combustibles.

Zone 2 – Extended Zone: Zone 2, which spans from 30 to 100 feet from a structure (including any parts that extend onto neighboring properties), is dedicated to reducing wildfire fuel and slowing fire spread. In this zone, grasses should be maintained at a maximum height of 4 inches and shrubs should be spaced apart. To prevent fire from climbing into treetops, lower tree branches should be pruned to create at least 6 feet of clearance from the ground, or three times the height of nearby shrubs. While up to 3 inches of vegetation debris may be allowed, it is recommended to remove as much as possible. Additionally, firewood must be surrounded by a 10-foot buffer of bare mineral soil with no vegetation.

In addition to the recommendations listed above, CAL FIRE requires 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.

6.2 HOME HARDENING

To safeguard your home from embers during wildfires, it is crucial to recognize that exterior vegetation is not the sole source of fuel for these embers. Wildfires can spread between structures and wildland vegetation or from structure to structure. Houses that are close together may find that hardening their home is the most effective option if there aren't options to manage exterior vegetation due to overlapping property lines. Fortifying or retrofitting your home serves as a strong defense against ember intrusion. To effectively mitigate a home from wildfire, use fire-resistant building materials, perform regular maintenance, and address potential ignition points caused by embers Figure 6.2 illustrates the relative cost of upgrading various home features, including siding, eaves, windows, decks, roofs, doors, fences, gutters, and vents, to ember-resistant materials and designs. Understanding these costs helps homeowners prioritize improvements that most effectively enhance wildfire resilience.

Further information and instructions for enhancing resilience for each component of your home are outlined below.

For more information and additional components surrounding home hardening activities for increasing wildfire resilience, reducing structural ignitability, and preparing for wildfires, please visit: https://wildfireprepared.org/.

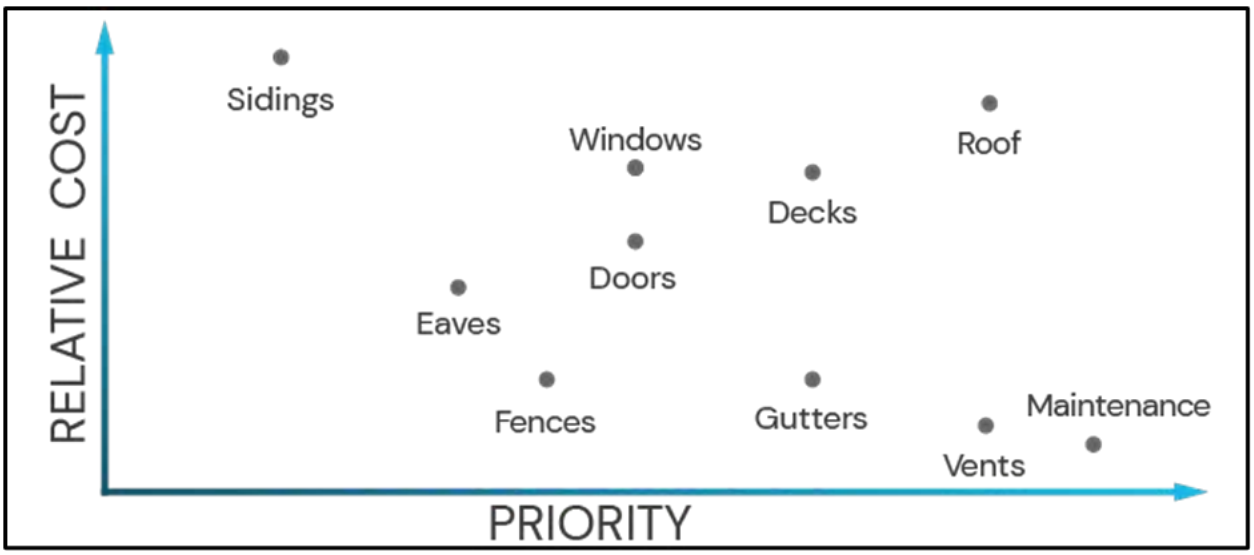

Figure 6.2. Sustainable defensible space: relative cost of upgrading the listed features.
Source: https://defensiblespace.org/house/house-upgrade/

6.2.1 Upgrading Components to Reduce Structural Ignitability

6.2.1.1 Roof

The roof is the most vulnerable component of your home during wildfires and must be able to resist wind-blown embers and other wildfire exposures. Complex roofs, where the roof meets vertical walls or includes dormers, present additional vulnerabilities, making roof evaluation a top priority when building or remodeling. Upgrading to a Class A fire-resistant material (such as metal, composition, clay, or tile) offers significant benefits, while regular maintenance, like removing debris, trimming overhanging limbs, inspecting roof-to-wall intersections for gaps, and covering chimneys with spark arrestors, reduces ignition risk. Additional measures, such as blocking gaps between roof decking and boxing in eaves with noncombustible materials, further enhance protection. Maintaining and upgrading your roof is a high-priority, cost-effective step for wildfire resilience.

Roof vents are vital for attic air circulation and moisture control but are highly susceptible to flame and ember intrusion during wildfires. To reduce vulnerability, replace non-metal vents with metal ones, install corrosion-resistant metal mesh screens with openings no larger than 1/8 inch, and add shutters where possible. Additional protection can be achieved by installing fire dampers in HVAC ducts, which close automatically under high heat. Regular maintenance, such as removing debris and vegetation near vents and turning off HVAC systems during wildfire threats, further minimizes risk. Upgrading vents is a cost-effective, high-priority home hardening measure for fire resistance, though each home's needs may vary.

6.2.1.2 Gutters

Dry debris in gutters can ignite from embers, allowing flames to reach the roof and siding. If gutter upgrades aren't possible, annual cleaning is still effective at reducing wildfire risk. For greater protection, install noncombustible leaf guards; use gutters and downspouts made from materials like galvanized

steel, copper, or aluminum; and add a drip edge. A drip edge both protects the roof edge from flames and helps block embers from entering gaps under the roof.

6.2.1.3 Fences and Decks

Landscape fencing and walls attached to or near buildings in wildfire zones pose a high ignition risk, as they can carry flames or radiant heat directly to structures. Wooden fences, especially old or weathered post-and-board styles, easily become fuel for wildfires and can act as horizontal ladder fuels, allowing fire to travel along their length and collect embers in gaps. To reduce risk, avoid attaching combustible fences and walls to buildings; if attachment is unavoidable, end the fence with a noncombustible material such as masonry or metal, or use a metal gate or plate at the connection point, though be mindful that metal flashing may cause moisture issues over time. Fences and decks within 10 feet of a home should be constructed from fire-resistant materials, and any gaps or slats that could trap embers should be avoided.

For decks, clear combustible debris from beneath, use gravel or other non-ignitable surfaces below, and cover openings with metal mesh. Remember, both plastic and wood-plastic composite decking are combustible, so consider upgrading to fire-retardant materials, especially close to the house. Regular maintenance and strategic upgrades to fencing and decking are high-priority, cost-effective steps for improving wildfire resilience.

6.2.1.4 Walls, Sidings, Coatings

Exterior walls are susceptible to ignition from direct flames, radiant heat, and windborne embers, especially if made from solid wood or wood composites. To reduce wildfire risk, ensure continuous siding coverage from foundation to roof and use fire-resistant materials such as concrete, fiber-cement, fire-retardant-treated wood, stucco, masonry, or metal. Avoid non-treated wood and vinyl siding.
For upgrades, replace flammable coverings with noncombustible options and regularly clear combustible debris near exterior walls.

6.2.1.5 Windows

Windows, sliding glass doors, and skylights are critical for preventing wildfire ignition inside a home by blocking windborne embers, hot gases, and radiant heat. For new construction, use tempered glass with low-e or reflective coatings, insulated glazing units, and solid metal frames, and screen operable windows for added protection. California code requires multipaned windows with at least one tempered pane that meet NFPA 257 or SFM 12-7A-2 standards. When upgrading existing homes, replace vulnerable windows, door vision panels, sliding glass doors, and skylights with fire-resistant materials that meet these recommendations.

6.2.1.6 Doors and Garages

Protecting exterior doors, including garage doors, from ember intrusion and radiant heat is essential in wildfire-prone areas. Enhance protection by installing adjustable weatherstripping and automatic door bottoms, and using insulated metal garage doors with tested weatherstripping and noncombustible trim. For existing homes, reinforce doors, upgrade sliding glass doors, and replace wooden garage doors to improve resilience and reduce heat transmission.

6.3 RESOURCES AND PROGRAMS

6.3.1 Local Resources

6.3.1.1 Escondido Fire Department: Wildfire Safety

The City of Escondido offers a comprehensive suite of wildfire safety and evacuation resources to help residents prepare for and respond to wildfire threats. Their guidance is based on the "Ready, Set, Go!" model, encouraging residents to harden their homes, create defensible space, and develop a family evacuation plan. Tools like the CAL FIRE mobile app provide real-time wildfire updates and location-based alerts. Residents are urged to prepare in advance by making packing lists, safeguarding important documents, and planning for pets and livestock. Key recommendations include:

- Store important documents in a safe deposit box or fire-resistant container.
- Prepare a list of essential items to pack during evacuation.
- Have emergency supplies ready, including water, food, clothing, first aid kit, tools, and medications.
- Make arrangements for pets and livestock, including carriers, food, and water.
- Tune in to local news for fire updates instead of calling 911.

During wildfire events and Red Flag Warning days, the City emphasizes the importance of early evacuation, safe driving, and staying informed. Residents are advised to avoid activities that could spark fires, such as outdoor burning or mowing dry grass, and to register for emergency notifications. Additional tips for Red Flag conditions include:

- Keep your vehicle’s gas tank at least half full.
- Register for reverse 911 and emergency alerts at ReadySanDiego.com.
- Prepare for possible Public Safety Power Shutoffs (PSPS) by SDG&E.
- Have a family meeting point or contact plan.
- Download the SD Emergency mobile app for up-to-date information.

These resources and recommendations are designed to ensure that all Escondido residents are prepared, informed, and ready to act quickly in the event of a wildfire.

For more information visit the Escondido Fire Department website here:
https://www.escondido.gov/714/Wildfire

Escondido Fire Safe Council

The Escondido Fire Safe Council is a nonprofit, community-led organization focused on wildfire safety, hazard reduction, and preparedness across Escondido. Working with local agencies and partners, the Council provides education on home hardening and defensible space, offers property risk assessments, organizes preparedness events, distributes free and low-cost resources, and helps residents access grants for brush clearing. The Council also promotes community engagement and advocates for fire

resilience and insurance reform. Membership is open to volunteers, all working toward the goal of a fire-safe, resilient Escondido

For more information, resources, or to get involved, visit their webpage here: https://www.fscswesco.com/home

6.3.1.2 Rincon del Diablo Fire Protection District

The Rincon del Diablo FPD provides fire and paramedic services in partnership with the City of Escondido. The district offers resources and support for fire hazard complaints, including an online Weed Abatement Complaint form and direct contact with the Vegetation Abatement Officer. The district also places focus on educating property owners about vegetation management and defensible space requirements to reduce wildfire risk, providing guidance and information on maintaining safe properties in high fire hazard areas (Rincon del Diablo FPD 2024, 2025).

For further information about the FPD and to see whether your residence is within their service area, visit the following webpage: https://rinconwater.org/fire-district/

6.3.1.3 San Diego County Fire Safe Councils

San Diego County Fire Safe Councils provide regional support through home assessments, community chipping events, defensible space workshops, fuel reduction services, and post-fire recovery assistance. Interested parties can contact the Resource Conservation District of Greater San Diego County at (619) 562-0096 or email info@rcdsandiego.org for participation.

Visit www.firesafesdcounty.org for more information.

6.3.2 State Resources and Programs

6.3.2.1 Wildfire Home Retrofit Guide

The Wildfire Home Retrofit Guide provides homeowners and building professionals with recommendations on retrofitting homes to withstand wildfires. It focuses on hardening vulnerable home components like roofs, vents, decks, and siding while emphasizing defensible space in three key zones around the home. To view the guide, visit the following link: https://readyforwildfire.org/wp-content/uploads/2024/03/wildfire-home-retrfito-guide-1.26.21.pdf.

6.3.2.2 CAL FIRE Ready, Set, Go!

The CAL FIRE Ready, Set, Go! Program, not to be mistaken for the National Ready, Set, Go! initiative described below, is a three-step plan designed to help California residents prepare for wildfires. To learn more about this three-step wildfire preparation plan, visit the following website: https://readyforwildfire.org/prepare-for-wildfire/.

6.3.2.3 Housing Assistance

Cal OES provides housing assistance to individuals affected by wildfires, offering temporary housing solutions, financial aid for housing repairs, and rental assistance to those displaced by wildfire damage. For more information on available housing assistance programs, visit the Cal OES Wildfire Recovery page here: https://wildfirerecovery.caloes.ca.gov/general-info/housing-assistance/.

6.3.2.4 California Wildfire Mitigation Discount Program

The California Wildfire Mitigation Discount Program offers eligible homeowners and condo policyholders discounts on their insurance if they take specific wildfire mitigation actions. For more information and to access informational resource such as frequently asked questions, access the following website: https://www.horacemann.com/insurance/homeowners-insurance/wildfire-discounts.

6.3.2.5 California Wildfire Mitigation Program

The California Wildfire Mitigation Program was established to enhance community resilience against wildfires through home hardening and defensible space creation, focusing on areas at high wildfire risk. Developed through a partnership between Cal OES and CAL FIRE, the program was initiated under Assembly Bill 38 in 2019. For more information on the program and to explore additional resources, access the following California Wildfire Mitigation Program webpage here: https://www.caloes.ca.gov/office-of-the-director/operations/recovery-directorate/hazard-mitigation/california-wildfire-mitigation-program/.

6.3.2.6 California Department of Insurance Safer from Wildfires Program

The California Department of Insurance's (CDI's) Safer from Wildfires Program provides homeowners with information on home hardening measures that qualify for discounted insurance rates and references 10 steps that homeowners can take, each providing insurance discounts so that homeowners can save more as they complete each step. For more information on the program and to explore resources, access the following website: https://www.insurance.ca.gov/01-consumers/200-wrr/Safer-from-Wildfires.cfm.

6.3.3 National Programs

6.3.3.1 Ready, Set, Go!

The National 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.

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.

6.3.3.2 National Fire Protection Association

The National Fire Protection Association (NFPA) is a global nonprofit 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.

The NFPA is a premier resource for fire data analysis, research, and analysis. The Fire Analysis and Research Division conducts investigations of fire incidents and produces a wide range of reports and special studies that cover a broad spectrum of fire safety–related topics.

6.3.3.3 U.S. Fire Administration's Wildland-Urban Interface Toolkit

The U.S. Fire Administration is an entity of 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/.

6.3.3.4 Wildfire Research Center (WiRē)

Wildfire Research Center (WiRē) is a nonprofit organization that works with local wildfire services to achieve community-tailored pathways that reduce risk to wildfire while simultaneously promoting pathways to fire adaptation.

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, WiRē also conducts social surveys, assessing residents' perceptions about wildfire, wildfire risk, risk mitigation behavior, and their willingness to take action to reduce wildfire risk.

For more information, please visit https://wildfireresearchcenter.org/.

6.3.3.5 National Interagency Fire Center

The National Interagency Fire Center (NIFC) provides a wide array of fire resources and services. The NIFC offers communication assistance to many firefighters and major events at one given time. In addition, NIFC's Predictive Services Group creates wildfire forecasts and predictions from fuel and weather data. The NIFC has a network of weather stations that help inform the Predictive Services Group.

The National Wildfire Coordinating Group (NWCG), which is nested under the NIFC, provides operational coordination to federal, state, local, tribal, and territorial partner. 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 with the environment, and other environmental science topics. The NIFC also provides public education resources: (NIFC 2024)

- Wildfire Readiness – Home (https://disastersafety.org/wildfire/wildfire-ready/)
- Wildfire Readiness – Business (https://disastersafety.org/wildfire/wildfire-ready-business/)
- Wildfire Readiness – Farm and Ranch (https://disastersafety.org/wildfire/farm-and-ranch-wildfire-guidance/)
- Weekend Wildfire Preparedness (https://disastersafety.org/wildfire/weekend-wildfire-preparedness-projects/)
- What to Do if a Wildfire is Approaching (https://disastersafety.org/wildfire/what-to-do-if-a-wildfire-is-approaching/)
- Wildfire Risk – Community (https://wildfirerisk.org/reduce-risk/)
- Prepare and Protect Your Home (https://www.nifc.gov/fire-information/fire-prevention-education-mitigation/wildfire-mitigation/home)
- Prepare Your Community (https://www.nifc.gov/fire-information/fire-prevention-education-mitigation/wildfire-mitigation/community)
- One Less Spark, One Less Wildfire (https://www.readyforwildfire.org/prevent-wildfire/one-less-spark-campaign/)

6.3.3.6 U.S. Small Business Association

The U.S. Small Business Administration provides low-interest disaster loans to help businesses, homeowners, renters, and nonprofits recover from declared disasters like wildfires. These loans cover losses not fully compensated by insurance or FEMA and help with business operating expenses impacted by the disaster. The Small Business Association offers different loan types, including physical damage loans, mitigation assistance for future damage prevention, and economic injury loans for small businesses. Eligible applicants must be located in declared disaster areas and can apply online for assistance to aid in their recovery.

For more information, please visit the following webpage: https://www.sba.gov/funding-programs/disaster-assistance.

6.3.3.7 Insurance Institute for Business & Home Safety

The Insurance Institute for Business & Home Safety (IBHS) is a nonprofit organization dedicated to advancing building safety and resilience through scientific research. Supported by property insurers and affiliated companies, IBHS translates research into practical solutions to reduce losses from severe weather and other hazards. Their work includes testing building materials, developing building codes, and providing guidance on construction and retrofitting best practices.

Protect your home

- Critical Home Preparation: https://ibhs.org/wildfireready/
- Exterior Home Upgrades: https://ibhs.org/wildfireready homeupgrades/
- Create a Wildfire-Resistant Yard: https://ibhs.org/wildfireready homedefensiblespace/
- Home Preparation Checklist: https://wildfireprepared.org/wp-content/uploads/WPH-How-To-Prepare-My-Home-Checklist.pdf
- Wildfire Prepared Home (free online assessment): https://wildfireprepared.org/wildfire-prepared-home-base-assessment/
- Homeowner Articles and Testimonies: https://wildfireprepared.org/homeowner-articles/
- Applications for Wildfire Prepared Certifications: https://wildfireprepared.org/get-started/

Prepare for evacuation

- Prepare Your Home for Evacuation: https://ibhs.org/ibhs-in-the-news/prepare-your-home-for-evacuation-from-wildfire/
- Home Evacuation Steps: https://ibhs.org/wildfireready homeevacuation/

6.3.4 Insurance Resources

The Safer from Wildfires initiative, a partnership between the California Insurance Commissioner, Cal OES, CPUC, CAL FIRE, and California Governor's Office of Planning and Research (Cal OPR 2022), 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 2023). 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. More information can be accessed through the following link: https://www.insurance.ca.gov/01-consumers/200-wrr/Safer-from-Wildfires.cfm (CDI 2021, 2023, 2025)

The California FAIR Plan Association, established in 1968, provides insurance coverage to homeowners unable to find traditional insurance, particularly in high-risk areas like fire zones or earthquake fault lines. It is a syndicated fire insurance pool comprising all licensed property/casualty insurers in California, who share the risks and profits based on their market share. The FAIR Plan is not a state agency and receives no public funding. It serves as a temporary safety net for homeowners until they can obtain coverage from

traditional insurers. As of June 2024, the FAIR Plan covers over $392 billion in dwelling exposure (Bankrate 2024).

An additional resource to homeowners is nonprofit 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 nonprofit 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 assist homeowners who are having issues getting insured or obtaining risk assessment documents from their insurer and help with facilitating conversation with insurers about risk scores. To learn more about United Policyholders, please visit: https://uphelp.org/.

CHAPTER 7 REFERENCES

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APPENDIX A: PLANNING PROCESS AND BACKGROUND LEGISLATION

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CWPP PLANNING PROCESS AND GUIDANCE

The Society of American Foresters, 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* (Society of American Foresters 2004) to provide communities with a clear process in developing a community wildfire protection plan (CWPP). While this guide is now dated, the eight steps for developing a CWPP are still relevant and have been followed in preparing the Escondido 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 fire 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 wildland-urban interface (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; 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.

Compliance with CAL FIRE CWPP Requirements

In 2024, CAL FIRE published the California CWPP Toolkit, which provides important guidance and resources for developing CWPPs in California, including an overview of California CWPP requirements (CAL FIRE 2024b). The Toolkit was used to ensure that this CWPP meets the specific considerations required by CAL FIRE: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/california-cwpp-toolkit. This CWPP has been developed in alignment with the Toolkit and meets CAL FIRE's current requirements for a California CWPP. This CWPP has also been reviewed by local

San Diego CAL FIRE staff, the San Diego Fire Safe Council, and the Resource Conservation District (RCD).

Fire Management Policy

The responsibility for fire prevention and protection lies with a combination of property owners, state, county, and municipal governments. Property owners are expected to comply with applicable state statutes and local regulations. These efforts should be coordinated with federal agencies and the private sector to ensure a comprehensive approach to fire management. The current federal fire policy prioritizes the protection of 1) life, 2) property, and 3) natural resources (USDA 2001). These priorities often limit flexibility in the decision-making process, especially when a wildland fire occurs within the WUI.

Legislative Direction

Local Direction

Escondido's legislative direction for wildfire management is articulated through a comprehensive framework of policies, plans, and codes that focus on prevention, mitigation, and enhancing community resilience. The *Escondido General Plan* emphasizes wildfire protection by mandating fire-resistant designs, landscaping, and adequate emergency access in high-risk areas (City of Escondido 2022a). This is supported by policies requiring vegetation management on both public and private properties to minimize fire risks. Fire protection plans are essential in high fire hazard areas, addressing critical aspects such as fire systems, water availability, emergency access routes, and defensible space around structures. Public education initiatives are also a key component, informing residents about wildfire prevention techniques.

The *Resource Conservation Chapter* of the General Plan integrates wildfire management with environmental preservation, promoting the use of native vegetation and minimizing impacts to sensitive habitats during fire suppression efforts. The *Escondido Fire Code*, aligned with the 2022 *California Fire Code*, includes specific provisions for vegetation management, defensible space, and fire-resistant construction in WUI areas. Furthermore, the city's *Climate Action Plan* highlights the exacerbating effects of climate change on wildfire risks and outlines adaptive measures, such as collaboration with agencies and community engagement, to build resilience (City of Escondido 2021). The *Multi-Jurisdictional Hazard Mitigation Plan Annex* prioritizes infrastructure improvements, emergency preparedness, and public education to reduce vulnerabilities (City of Escondido 2023a).

More information on local legislation and planning pertinent to wildfire can be found below in the Planning Efforts section.

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 action items (Forests and Rangelands 2021). Some key strategies specific to wildfire include:

- Increasing fuel breaks to reduce wildfire risk and slow fire spread within the WUI

- Protecting wildfire-prone homes and neighborhoods through expanded defensible space programs
- Improving utility-related wildfire risk by ensuring electrical networks comply with wildfire safety regulations
- Creating fire-safe roadways that serve as evacuation routes and fuel breaks

Major wildfire policies, like the 2014 National Strategy, the 2018 Strategic Fire Plan for California, the state's Wildfire and Forest Resilience Action Plan, CAL FIRE's 2024 CWPP Toolkit, and FEMA's Disaster Mitigation Act, require community-based planning with active stakeholder participation, project prioritization, funding review, and interagency cooperation. Under the Healthy Forests Restoration Act, local governments, fire departments, and state agencies must jointly develop CWPPs.

In November 2024, California voters passed **Proposition 4**, authorizing a $10 billion climate bond, including approximately $1.5 billion (or $1.95 billion in some estimates) designated for wildfire prevention and extreme heat mitigation. These funds support forest thinning, vegetation clearing near homes, and property22 hardening, with an emphasis on disadvantaged communities and mandatory annual audits. The bond will be repaid over approximately 40 years, costing about $400 million annually (California Secretary of State 2024; Wildfire Leadership Council 2024).

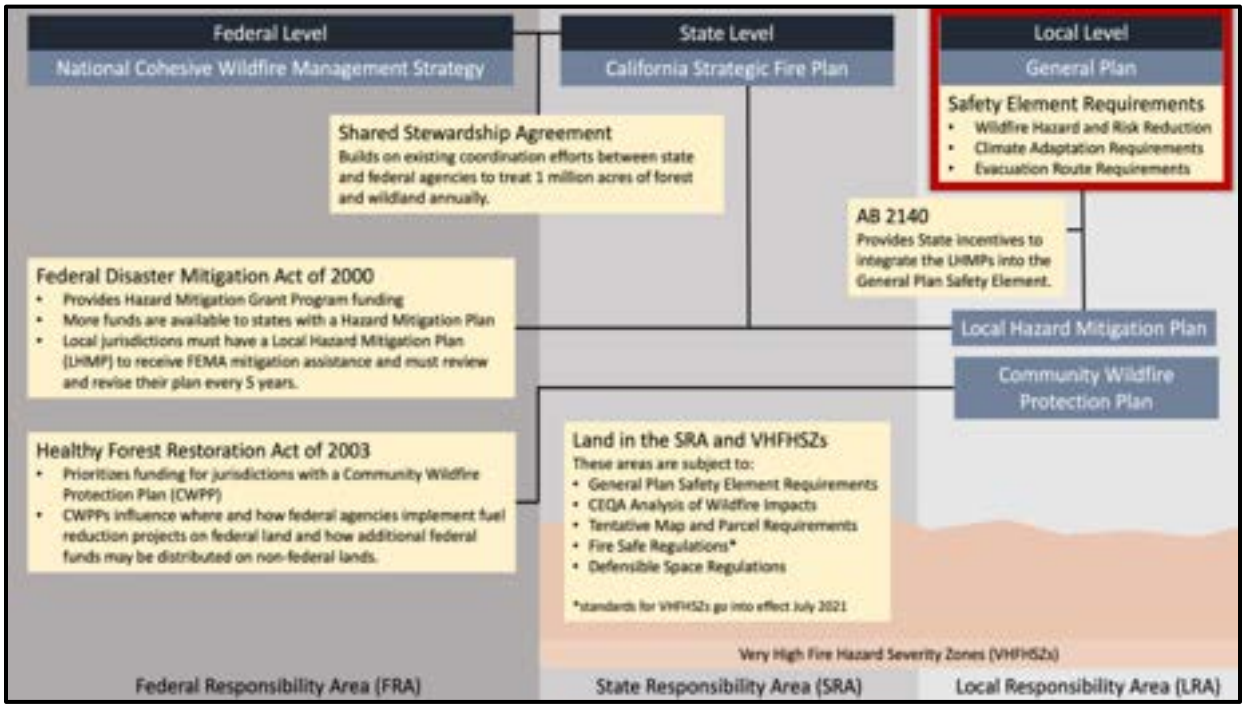

Figure A.1. California's wildfire regulatory framework. Source: Cal OPR (2022)

California Bills and Regulations

Assembly Bill 38 (2019): Assembly Bill 38 creates a financial support program for wildfire mitigation, focusing on home hardening, retrofitting, and defensible space improvements in high-risk wildfire areas.

Assembly Bill 179 (2022): In September 2022, Governor Newsom signed Assembly Bill 179, allocating $1.3 billion over 2 years to enhance wildfire resilience and forest health across California.

Assembly Bill 1550 (2016): Assembly Bill 1550 requires state agencies to prioritize investments in disadvantaged communities facing environmental and economic challenges.

Evacuation Planning Requirements: Assembly Bill 747 (2019), Assembly Bill 1409 (2020), and Senate Bill 99 (2019) require local agencies to assess evacuation routes and identify communities with fewer than two routes.

Public Resource Code (PRC) 4290: Establishes minimum wildfire protection standards for building, construction, and development in the SRA, effective since 1991. Additionally, PRC 4290 grants the State Board of Forestry and Fire Protection authority to adopt fire safety regulations in the SRA and Very High FHSZs.

PRC 4291: Mandates defensible space around structures in the SRA or Very High FHSZs, including clearing vegetation and debris near homes. An update in January 2021 added an ember-resistant zone requirement within 5 feet of structures, commonly referred to as “Zone 0.” In February 2025, in response to the Los Angeles Fires, Governor Newsom signed an executive order to direct the State Board of Forestry and Fire Protection to accelerate its work to adopt Zone 0 regulations.

PRC 4292–4296: These sections set vegetation management standards around overhead power lines to prevent fires.

Senate Bill 246 (2015): Senate Bill 246 established the Integrated Climate Adaptation and Resiliency Program (ICARP), responsible for coordinating responses to climate change impacts across California.

Senate Bill 379 (2015): Senate Bill 379 requires all California general plans to address climate change adaptation and resilience in the safety element.

Senate Bill 535 (2012): Senate Bill 535 allocates funds from California Climate Investments to benefit communities identified as “Disadvantaged Communities” (DACs), based on pollution burden and federal land status.

Senate Bill 901 (2018): Senate Bill 901 updated the California Emergency Services Act, allowing the governor, with the advice of the Office of Emergency Services, to divide the state into mutual aid regions for wildfire response coordination.

Senate Bill 1035 (2018): Senate Bill 1035 mandates that local agencies update the climate adaptation section of their general plan every 8 years, incorporating new information on fire hazards, climate resilience, and adaptation strategies.

Senate Bill 1241 (2012): Senate Bill 1241 mandates that cities and counties in the SRA or Very High FHSZs include wildfire hazard strategies in their safety elements.

2022 Fire Hazard Severity Zones (FHSZs) Update: In 2023, CAL FIRE updated the FHSZs within the SRA, considering factors like vegetation, wind, and fire history. The 2023 FHSZ update for the SRA became effective April 1, 2024. FHSZs in the LRA are currently being updated, with final maps expected in 2025.

California Proposition 4: Proposition 4 authorizes a $10 billion bond, with $1.5 billion dedicated to dedicated to forest health and wildfire prevention. This funding is crucial for reducing wildfire risks by supporting forest thinning, vegetation clearing, and home hardening. These measures aim to decrease the severity of wildfires, protect communities, and potentially save state and local governments significant costs in disaster response and recovery.

Federal Direction

The *National Fire Plan* was established after the 2000 fire season to foster collaboration between state, and federal agencies ensuring preparedness for severe wildland fires. It was followed by a 2001 report and was updated in 2002 and 2006, which emphasized restoring fire-adapted ecosystems, reducing hazardous fuels, and improving fire prevention. The 2006 update introduced a landscape-level vision for restoration, continued improvements in collaboration, and the importance of using fire as a management tool. Annual reports track progress in community fire prevention efforts (Forests and Rangelands 2006).

In 2003, the *Healthy Forests Restoration Act (HFRA)* was enacted to expedite hazardous fuels reduction on federal lands, encouraging collaboration between agencies and communities. Revised in 2009, it introduced new funding provisions and refocused on wildfire mitigation. A key feature of the HFRA is the development of Community Wildfire Protection Plans, which allow communities to define their wildland-urban interface (WUI) and prioritize treatment areas for funding and hazard reduction projects (H.R. 4233 – Healthy Forest Restoration Amendments Act of 2009).

In 2023, the *Wildfire Leadership Council* updated the *National Cohesive Wildland Fire Management Strategy* through an Addendum Update. This update highlighted new emphasis areas, including climate change, workforce capacity, community resilience, and environmental justice. The updated strategy also outlined management options and addressed challenges faced by the 2014 framework (Forests and Rangelands 2023).

Public Land Management

The City of Escondido, through its Parks and Recreation Department, manages key areas such as Daley Ranch, Lake Dixon, Kit Carson Park, and Frances Ryan Park, focusing on recreational spaces within the city limits (City of Escondido n.d.). The County of San Diego's Department of Parks and Recreation extends its management to regional parks and preserves in nearby unincorporated areas, including the Elfin Forest Recreational Reserve, in partnership with water districts, and Felicita County Park, which is technically within Escondido (San Diego County Parks and Recreation n.d.; Olivenhain Municipal Water District 2025). In addition to larger parks and open space, the City of Escondido maintains 800 acres of public land across 30+ smaller parcels within the city limits. These properties range in size from less than 0.05 acres to more than 35 acres and are maintained each year by the City to improve fire safety through vegetation management and fuel reduction.

State agencies, primarily CAL FIRE, play a crucial role in fuel management and fire protection along State Responsibility Area (SRA) lands and the wildland–urban interface (WUI), coordinating with city and county fire departments to mitigate fire risks. Although there are no major federal lands within Escondido's city limits, adjacent areas are managed by the U.S. Forest Service (USFS), particularly parts of the Cleveland National Forest near Palomar Mountain and Mt. Woodson (USFS 2025b). The U.S. Fish and Wildlife Service contributes to regional conservation efforts through the San Diego National Wildlife Refuge Complex, focusing on habitat conservation plans for endangered species and supporting the Multiple Species Conservation Program (City of Escondido 2023a).

Water districts and joint agencies, such as the San Dieguito River Park Joint Powers Authority and the Olivenhain Municipal Water District, manage significant trails like the Coast to Crest Trail and co-manage recreational reserves like the Elfin Forest Recreational Reserve (San Dieguito River Park Joint Powers Authority 2025; Olivenhain Municipal Water District 2025). Nonprofit organizations, notably The Escondido Creek Conservancy, are active in managing habitat reserves near Harmony Grove and

Del Dios, emphasizing restoration, education, and conservation easements (The Escondido Creek Conservancy n.d.). These collective efforts ensure the sustainable management and preservation of Escondido's natural landscapes.

PLANNING EFFORTS

Local

Escondido 2022 General Plan – Community Protection Chapter: This chapter of the Escondido General Plan outlines a robust framework for wildfire protection, emphasizing emergency preparedness, fire service improvements, and community education. It highlights the city's vulnerability to wildland fires and mandates fire-resistant designs in new developments, strategic evacuation routes, and vegetation management to mitigate fire risks. The Escondido Fire Department plays a crucial role in executing these strategies, supported by advanced technologies and mutual aid agreements.

Escondido 2022 General Plan – Resource Conservation Chapter: The Resource Conservation Element of Escondido's General Plan prioritizes the preservation of native vegetation and sensitive biological habitats, promoting biodiversity and ecological balance. It focuses on conserving significant natural areas like Daley Ranch and San Dieguito River Park and integrates wildlife conservation efforts to prevent habitat fragmentation. The chapter also addresses sustainable water management, air quality improvement, and the enhancement of recreational opportunities through trail networks.

San Diego County 2023 Multi-Jurisdictional Hazard Mitigation Plan – Escondido Annex: Escondido's annex to the Multi-Jurisdictional Hazard Mitigation Plan for San Diego County outlines strategies to mitigate wildfire and other hazards. It emphasizes maintaining robust fire and emergency services, public engagement, and collaboration with agencies to enhance hazard resilience. The plan includes detailed risk assessments, goals for infrastructure improvements, and actions like enforcing building codes and conducting emergency preparedness training to reduce vulnerabilities(CAL FIRE 2025g).

Escondido Climate Action Plan 2021: The Climate Action Plan addresses the increasing wildfire risks in Escondido due to factors like vegetation type, climate conditions, and urban-rural interface areas. It highlights the potential impact of climate change to fire regimes and outlines measures to mitigate these risks, focusing on social equity and environmental justice. The plan includes strategies for resilient community infrastructure, collaboration with agencies, and public education to adapt to changing climate conditions.

Escondido Recovery Plan: The Escondido Recovery Plan is a comprehensive, all-hazards framework designed to guide the City of Escondido’s recovery from disasters, whether natural, technological, or human-caused. Aligned with state and federal emergency management systems and the County of San Diego’s recovery protocols, the plan adopts a Whole Community approach to engage government, private, nonprofit, and community partners throughout all phases of recovery. The plan provides detailed procedures, roles, and coordination mechanisms to ensure efficient, equitable, and resilient recovery for the Escondido community (direct communication with Escondido Emergency Preparedness Manager, 2025)

CAL FIRE San Diego 2024 Unit Fire Plan: The CAL FIRE San Diego Unit Strategic Fire Plan outlines local wildfire prevention, preparedness, and response strategies tailored to the unique conditions of the

San Diego region. It emphasizes community education, fuel management, and interagency coordination to reduce wildfire risks, protect lives and property, and enhance ecosystem health.

San Diego County 2022 Emergency Operations Plan: This plan details the coordinated response to emergencies and disasters within San Diego County, establishing roles, responsibilities, and procedures for local agencies and partners. It ensures effective communication, resource sharing, and operational readiness to protect public safety and facilitate rapid recovery during incidents such as wildfires, earthquakes, and floods.

San Diego Association of Governments (SANDAG) Regional Plan and Wildfire Resilience Initiatives: SANDAG's Regional Plan incorporates transportation, land use, and environmental strategies to support sustainable growth and resilience in the San Diego region. Its wildfire resilience initiatives focus on reducing fire risks through regional planning, infrastructure investment, and collaboration with local agencies to enhance community safety and adaptive capacity.

San Diego Gas & Electric (SDG&E) Wildfire Mitigation Plan Update: SDG&E's 2025 wildfire mitigation plan focuses on reducing wildfire risks and minimizing the impact of Public Safety Power Shutoffs (PSPS) through advanced risk modeling and strategic infrastructure enhancements.

State

The 2018 Strategic Fire Plan for California is a comprehensive document developed by CAL FIRE and the State Board of Forestry and Fire Protection. It aims to enhance the state's ability to manage and mitigate wildfire risks through a combination of fire prevention, suppression activities, and natural resource management.

Key Focus Areas:

- Fire Prevention and Suppression: The plan emphasizes activities to protect lives, property, and ecosystem services.
- Natural Resource Management: Maintaining the state's forests as a resilient carbon sink is crucial.
- Community Engagement and Education: Increasing public awareness and education on fire prevention and safety is a significant component.

Goals and Objectives: The 2018 Strategic Fire Plan for California outlines eight primary goals, supported by 66 specific objectives. These goals include identifying and evaluating wildland fire hazards, integrating land use planning, enhancing collaborative community fire protection planning, increasing fire prevention awareness, integrating fire and fuels management practices with landowner/land manager priorities across jurisdictions, determining the adequate level of fire suppression and fire planning resources, and implementing post-fire assessment programs.

California State Hazard Mitigation Plan (2023): The 2023 California State Hazard Mitigation Plan outlines California's strategy to reduce the impacts of disasters through a multi-sector and community-wide approach to risk reduction.

Fire Hazard Planning Technical Advisory (2022): In 2022, Cal OPR 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.

Wildland-Urban Interface Planning Guide (2022): In 2022, in accordance with the requirements of Assembly Bill 75, Cal OPR, together with the Community Wildfire Planning Center and CAL FIRE, created the WUI planning guide. The guide serves as a supplement to the Fire Hazard Planning Technical Advisory. The regulation section of the guide provides required and recommended codes for resilient WUI planning as well as rationale for how these measures promote a fire-safe community.

California's Forests and Rangelands: 2017 Assessment: In 2018, CAL FIRE published California's Forests and Rangelands: 2017 Assessment. CAL FIRE's Fire and Resource Assessment Program evaluates California's forests and rangelands and analyzes their condition to establish management and regulatory guidelines.

CAL FIRE Community Wildfire Prevention & Mitigation Report (2019): 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.

California's Wildfire and Forest Resilience Action Plan (2021): In 2021, the CA WFRTF developed California's Wildfire and Forest Resilience Action Plan. 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 (CA WFRTF 2021, 2025)

CAL FIRE Vegetation Management Program: In addition to the 2018 Strategic Fire Plan for California, CAL FIRE operates a Vegetation Management Program (VMP) that focuses on addressing resource management and wildfire fuel hazards within SRA lands. The VMP utilizes cost-sharing methodology, prescribed fire, and mechanical fuels treatments to address wildland fuel hazards on SRA lands. Landowners can apply for participation in the VMP program and once approved as a VMP project, CAL FIRE assumes liability for conducting treatments.

California Vegetation Treatment Program (CalVTP) ***(see Chapter 4.1.1)*****:** 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 (CAL FIRE 2023b). The Programmatic Environmental Impact Report (PEIR) is under revision following the May 30, 2025, appellate decision; agencies may be limited in relying on CalVTP tiering until the California Board of Forestry and Fire Protection completes the update.

APPENDIX B: COMMUNITY INFORMATION

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ROADS AND TRANSPORTATION

Escondido has a well-developed transportation network that plays a critical role in supporting regional mobility, emergency response, and wildfire evacuation planning. The city's location at the intersection of major regional corridors provides strategic access for both residents and emergency responders. However, topographic constraints and wildland–urban interface (WUI) development patterns present ongoing challenges for fire access and evacuation during wildfire events *(City of Escondido 2022; SANDAG 2021)*.

Major Transportation Corridors

Interstate 15 (I-15)
I-15 is a major north-south freeway that bisects Escondido and connects it to Riverside County, Temecula, and the Inland Empire to the north, and to San Diego and the international border to the south. It is a designated primary evacuation route and provides critical access for mutual aid fire resources entering from surrounding jurisdictions. I-15 also serves key commercial and commuter traffic corridors, making it one of the most heavily used transportation arteries in the region (City of Escondido 2022; SANDAG 2021).

State Route 78 (SR-78)
SR-78 is the main east-west highway through Escondido, linking the inland valleys to coastal cities such as San Marcos, Vista, and Oceanside. It serves as a secondary evacuation route and is critical for east-west mobility during emergencies. SR-78 also provides access to hospitals, emergency shelters, and other essential services within the city and throughout North County (City of Escondido 2022).

Valley Parkway and Bear Valley Parkway
These major surface arterials form part of Escondido's local circulation backbone. Valley Parkway runs east-west through the heart of the city, while Bear Valley Parkway provides north-south access between residential areas, commercial centers, and medical facilities. Both routes are heavily traveled and serve as key connectors between neighborhoods and regional highways (City of Escondido 2022).

Lake Wohlford Road, El Norte Parkway, and Country Club Lane
These roads provide localized access to rural and WUI neighborhoods in the eastern and northern portions of the city, including areas near Daley Ranch, Lake Wohlford, and Hidden Trails. They are also important for recreation access and can serve as evacuation or ingress routes for firefighting personnel. However, portions of these roads are narrow, winding, and lack shoulders, which may limit evacuation efficiency during large-scale wildfire events (City of Escondido 2022).

Emergency Access and Constraints

Although Escondido's primary roadway network supports regional mobility, not all neighborhoods are equally accessible during emergencies. Several hillside and canyon communities, particularly in the northern and eastern portions of the city, are served by limited or single access routes (City of Escondido 2022). These areas include:

- Jesmond Dene and North Broadway

- Hidden Trails and Canyon Grove Estates
- Eastern Lake Wohlford neighborhoods
- Southwestern hills near Felicita Park and Harmony Grove

Planning and Mitigation Strategies

To reduce these risks, the City of Escondido and its partners have prioritized several actions, including:

- Roadside fuel reduction and vegetation clearance along evacuation routes
- Installation of visible and reflective emergency signage
- Designation of evacuation zones and neighborhood rally points
- Public education on evacuation readiness and personal emergency planning
- Coordination with CAL FIRE, the Escondido Fire Department, and regional law enforcement for incident traffic control and evacuation operations (City of Escondido 2023a; San Diego County OES 2023)

Continued investment in infrastructure, access improvements, and community outreach is essential to ensure that residents and responders can move quickly and safely during wildfire events.

EVACUATION RESOURCES

Effective evacuation planning is a critical component of wildfire preparedness. The City of Escondido works closely with regional partners to ensure the safe and timely evacuation of residents during wildfire events. This section outlines the key systems, strategies, and community resources that support public safety before and during evacuations.

Evacuation of People

Evacuation planning in Escondido is led by law enforcement and coordinated with multiple departments at the city and county levels. The Escondido Fire Department and the City's Emergency Management Division work in partnership with the San Diego County Office of Emergency Services (OES) to develop and implement evacuation protocols. These procedures are guided by the **San Diego County Emergency Operations Plan** and supported by the **Multi-Jurisdictional Hazard Mitigation Plan**, which identify evacuation routes, shelter locations, and emergency response strategies specific to the region (San Diego County OES 2023; City of Escondido 2023a).

The safe and efficient evacuation of residents during a wildfire depends on several key factors:

Emergency Notifications

The City of Escondido uses multiple emergency alert systems to notify residents of evacuation orders and other critical updates:

- **AlertSanDiego** — Reverse 911 system for phone, email, and text alerts. Residents are strongly encouraged to register to receive real-time evacuation notices.
  Sign up: www.readysandiego.org/alertsandiego
- **Wireless Emergency Alerts (WEA)** — National system managed by the Federal Communications Commission. Accessible only through a cellular connection.
  More information: FCC – Wireless Emergency Alerts
- **Genasys Protect Citizen Website and App** — Provides localized evacuation information and hazard alerts. Accessible via cellular service or web browser (note: browser use does not provide push notifications).
  More information: Genasys Protect
- **Watch Duty App** — Nonprofit wildfire alerting system providing live wildfire updates, evacuation notices, and incident mapping, powered by volunteer firefighters, dispatchers, and first responders.
  More information: Watch Duty

Emergency Notifications During Power Loss

Wildfires and other emergencies may disrupt electrical power, cellular service, and internet connectivity, reducing the effectiveness of modern alerting systems. The following information is drawn from the County of San Diego's Emergency Operations Plan (EOP) – Communications Annex I, the City of Escondido's EOP Alert and Warning section, and updated information since those documents were published.

Emergency Alerting System (EAS)

The County OES can activate EAS to broadcast emergency messages through all radio and television stations in San Diego County, as well as cable TV providers.

- Primary stations: **KOGO (600 AM)** and **KLSD (1360 AM)**, both equipped with emergency generators.
- Residents can receive broadcasts using a battery-powered or crank-powered radio, a car radio, or backup-powered television.
- During the 2011 countywide blackout, many residents relied on car radios for updates.
- Note: Some electric vehicle manufacturers have removed AM radios from newer models.

Law Enforcement High/Low Sirens – Audible evacuation alerts requiring no power for the public to receive.

Door-to-Door Notifications – Used when feasible, though staffing and safety may limit deployment during active wildfires.

Aerial Notifications – Some Escondido Police Department drones have clear, intelligible loudspeakers for announcements. The Sheriff's Department may also use helicopters, though broadcast clarity can vary.

Community Emergency Response Team (CERT)

The City of Escondido's Community Emergency Response Team (CERT) program trains residents to assist during disasters when professional responders may be delayed. CERT members learn skills such as fire suppression, basic first aid, light search and rescue, and damage assessment.

- Training is provided by the Escondido Fire Department and is typically offered each year from late February to early March.
- Graduates become part of an ongoing volunteer network that supports community safety during emergencies.
- CERT enhances local capacity for evacuation assistance, shelter operations, and neighborhood safety checks, particularly in the critical first 72 hours after a disaster.

More information or to enroll: Contact Jeff Murdoch, Emergency/Disaster Preparedness Manager, at 760-839-5406 or visit the Escondido CERT webpage. https://www.escondido.gov/494/Community-Emergency-Response-Team-CERT?

Preplanning by Residents

Residents should understand how to evacuate and where to go in advance of an emergency. Challenges such as dead-end roads, limited signage, and conflicts between incoming emergency vehicles and outgoing traffic can complicate evacuation. Confusion about where to find temporary refuge may lead to separation of family members and delays in reunification. Individuals without access to transportation or with limited mobility are especially vulnerable and may be unintentionally left behind without proper planning (City of Escondido 2022).

Public Awareness and Education

Without awareness of the available notification systems and the importance of preplanning, these systems may fail to protect the community. Public education should focus on encouraging residents to develop personal evacuation plans and understand what information to include, such as multiple exit routes, meeting locations, and emergency contacts. Outreach should be conducted regularly by agencies such as the Escondido Fire Department through public workshops, school programs, social media, and community events (City of Escondido 2023a; San Diego County OES 2023).

Evacuation of Animals and Livestock

In the event of a wildfire, it is critical that both residents and fire responders have a plan in place for evacuating pets and livestock. Evacuation planning often overlooks the logistics of moving animals and determining where they will be sheltered. For example, loading horses during an active fire, while smoke is present and roads are congested, can be extremely difficult. The use of trailers on narrow roads under stressful conditions can also create dangerous situations for both people and animals (San Diego County Fire Protection District n.d.).

Public education efforts should emphasize the importance of including pets and livestock in family evacuation plans. Delays caused by last-minute decisions about animals can slow or prevent safe evacuation. Planning ahead helps reduce confusion and supports a more orderly evacuation process (City of Escondido 2023a).

Pre-identifying evacuation shelters for animals is essential. Large animals such as horses and livestock may be taken to designated locations like the Del Mar Fairgrounds, the Lakeside Rodeo Grounds, or other county-coordinated large animal shelters. For small animals, such as dogs and cats, pick-up locations within evacuation zones should be identified in advance, along with the agencies responsible for this work, such as the San Diego Humane Society (San Diego Humane Society n.d.).

In San Diego County, the **Ag Pass Program** allows commercial livestock operators and agricultural producers to access restricted areas during emergencies, if it is deemed safe to do so. The Ag Pass can help qualified individuals feed and care for animals that cannot be evacuated in time. This program is managed by the San Diego County Office of Emergency Services and is intended to support coordination between landowners, first responders, and animal services during wildfire incidents (San Diego County Fire Protection District n.d.).

To protect both people and animals, Escondido's wildfire preparedness efforts should include:

- Outreach encouraging animal evacuation planning
- Coordination with San Diego County Animal Services and the Humane Society
- Identification of local and regional animal shelter sites
- Consideration of Ag Pass participation for eligible agricultural operators

Including these elements in evacuation planning ensures a more complete and effective emergency response for the entire community.

Agriculture Pass Program (Ag Pass) – County of San Diego County Fire Protection District

https://www.sandiegocounty.gov/content/sdc/sdcfa/crr-main-menu/ag-pass1.html

You can download the application (PDF), view eligibility requirements, and access FAQs there. If you have questions, contact:

Email: Ag.Pass@sdcounty.ca.gov
ridingmagazine.com+5sandiegocounty.gov+5sandiegocounty.gov+5

Phone: (858) 974-5999

Water Availability and Supply

Effective wildfire suppression in Escondido depends on the availability and condition of both ground-based and aerial water sources. Access to sufficient water is critical for protecting structures, maintaining defensible space, and conducting direct fire attack, especially in the city's WUI. Wildland firefighting within Escondido often relies on natural sources such as creeks, ponds, and small reservoirs. While local fire personnel are generally familiar with these resources, mutual aid crews from other regions may not be. Mapping and clearly communicating the location and condition of drafting sources in advance can improve operational efficiency and reduce delays during initial attack (City of Escondido 2022).

Community Water Infrastructure

The City of Escondido operates a municipal water system that serves residential and commercial properties within city limits. This system includes wells, reservoirs, pump stations, pipelines, and fire hydrants, all of which are designed to support daily water needs and emergency fire suppression (City of Escondido 2023b).

In more rural parts of Escondido and adjacent unincorporated communities, some properties rely on private wells or small-scale water systems. These areas may lack formal hydrant networks, which limits water access for firefighting. In WUI zones, topography, narrow roadways, and limited infrastructure can further challenge the use of water tenders and hinder access to natural drafting sources. Maintaining and upgrading fire hydrants and water mains is essential to supporting reliable emergency response. However, infrastructure improvements often compete with other municipal needs and may be delayed due to funding limitations. While the City has made water system improvements in recent years, surrounding areas could benefit from targeted investments to improve water pressure, flow, and access (City of Escondido 2023b).

Drought and Water Resilience

Southern California continues to experience highly variable precipitation and frequent drought cycles. In recent years, Escondido and the surrounding region have had below-average rainfall, affecting surface water storage and groundwater recharge. These fluctuations highlight the importance of long-term planning, efficient water use, and resilient infrastructure that can support firefighting under increasingly unpredictable conditions.

Access to reliable water is essential for both ground and aerial firefighting operations. Continued investment in Escondido's water infrastructure, combined with regional coordination and proactive planning, will ensure the City is better prepared to respond to future wildfires.

Recreation

Escondido is rich in open space, parks, and recreational amenities that contribute to the city's quality of life, ecological health, and regional connectivity. These natural areas offer valuable habitat, scenic viewsheds, and a wide range of outdoor activities for residents and visitors. The city's extensive trail systems and parklands support hiking, biking, horseback riding, wildlife viewing, and nature exploration across a variety of landscapes.

The city's open space network includes coastal sage scrub, chaparral, grasslands, riparian corridors, and oak woodlands. These areas are managed for conservation, recreation, and public enjoyment. Many trail systems link neighborhoods with surrounding hills, lakes, and regional open space areas, creating a network of accessible green infrastructure.

Key Open Space and Recreation Areas

Daley Ranch
Daley Ranch is Escondido's largest conservation area, spanning more than 3,000 acres of protected habitat in the northeastern part of the city. The preserve includes rugged hills, scenic vistas, and a wide variety of native plant communities. It features over 25 miles of multi-use trails for hikers,

mountain bikers, and equestrians. Daley Ranch connects to Lake Dixon and several residential neighborhoods, offering a unique blend of recreation and conservation.

Lake Wohlford and Dixon Lake
Located in eastern Escondido, these reservoirs and their surrounding parklands provide opportunities for fishing, boating, camping, picnicking, and trail use. Dixon Lake includes a staffed campground, rental boats, and shaded picnic areas. Lake Wohlford offers shoreline access, hiking trails, and panoramic views. Both lakes are popular weekend destinations and support a wide variety of recreational uses year-round.

Kit Carson Park
Kit Carson Park is a 285-acre community park in the southern part of Escondido. It includes athletic fields, playgrounds, a skate park, walking paths, and large grassy areas. The park also contains a riparian corridor along Bear Valley Creek, as well as a cultural arts space known as Queen Califia's Magical Circle. It is one of the city's most visited and versatile public spaces.

Elfin Forest Recreational Reserve
Located near the southwestern edge of Escondido, Elfin Forest Recreational Reserve is a popular public open space offering hiking, mountain biking, and equestrian trails. Managed by the Olivenhain Municipal Water District, the reserve contains native chaparral and oak woodland habitats and provides access to scenic overlooks, interpretive trails, and the Escondido Creek watershed.

San Dieguito River Park and Escondido Creek Trail
These interconnected trail systems are part of a regional greenway that stretches from inland San Diego County to the Pacific Ocean. The Escondido Creek Trail links residential neighborhoods, parks, schools, and commercial areas within the city. The larger San Dieguito River Park corridor provides regional access to natural areas, historic sites, and scenic overlooks. These trails offer recreational opportunities for pedestrians, cyclists, and nature enthusiasts.

Other Recreational Areas
Escondido is home to dozens of neighborhood parks, greenbelts, and open space easements. Parks such as Jesmond Dene, Rod McLeod, and Mountain View offer playgrounds, sports fields, picnic areas, and walking paths. Many residential developments also include trailheads and informal access points that contribute to the city's walkability and outdoor lifestyle.

Escondido's investment in open space and recreation supports community wellness, environmental stewardship, and a strong connection between people and the natural landscape.

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APPENDIX C: COMMUNITY FIELD ASSESSMENTS

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CONTENTS

Figures

Tables

CWPP FIELD ASSESSMENTS

This appendix provides a summary of the data gathered in each community (Figure C.1) during on-the-ground assessments. Communities were delineated based on fire department service area boundaries and development patterns (e.g., analyzing landscape features and the built environment). These community areas intend to break the larger CWPP planning area into smaller sections to provide more tailored information. It should be noted that community boundaries evolve due to expansion and contraction and may only be current as of the date this document was published.

The community wildfire hazard assessment summaries below capture average conditions within each community boundary; therefore, the provided ratings (e.g., moderate, extreme, etc.) may not universally apply to every parcel within the community. It's important to note that these ratings reflect the collective evaluation of the community as an entity and may be used to guide strategies for informed mitigation actions. Following each community scoring table is a snapshot of the QWRA score within and around that community as well as a detailed table summarizing the individual scoring percentages for each hazard category within the adapted NFPA form.

Community assessments were completed using a modified methodology described by the National Fire Protection Association (NFPA) Code 1144: *Standard for Reducing Structure Ignition Hazard for Wildland Fire* [(https://www.nfpa.org/codes-and-standards/nfpa-1144-standard-development/1144)](https://www.nfpa.org/codes-and-standards/nfpa-1144-standard-development/1144).The assessment rates categories numerically to determine an aggregate risk rating ranging from low to extreme. Each question has a weight that is derived from the NFPA 1144 Standard. The ratings are then used to calculate a risk score, which is performed by an NFPA Certified Wildfire Mitigation Specialist (CWMS) using a field assessment form hosted on ArcGIS Survey123; the form is available at the end of this appendix. The CWMS determines the percentage of the community that falls within each hazard category for any given question. The community assessments were completed in July 2025 by SWCA Fire Planning Specialists with assistance from the City of Escondido Fire Department.

The total rating is defined as follows: scores less than 43 indicate a low hazard, scores from 43 to 62 indicate moderate hazard, scores from 62 to 81 indicate high hazard, and scores greater than 81would indicate extreme hazard. Each line of the form is filled with a number evaluation, with lower numbers indicating a lower risk factor for that category. To make these assessments more approachable and easier to comprehend, each risk level score was assigned a color to demonstrate risk ranging from low to high as described below:

- A **green score** corresponds with **low risk**.
- A **yellow score** corresponds to a **moderate risk**.
- An **orange score** corresponds to a **high risk**.
- A **red score** indicates **extreme risk.**

The Quantitative Wildfire Risk Assessment map described in Chapter 3 does not integrate findings from the field assessments since each assessment is focused on very different parameters (field observations vs. quantitative [computational] modeling) and completed at a different scale (citywide versus community). Due to the differing focus and resolutions associated with these two assessment methodologies, there may be deviations between the resulting risk rating outputs. Though important to note, this is expected when analyzing wildfire risk and hazard across scales.

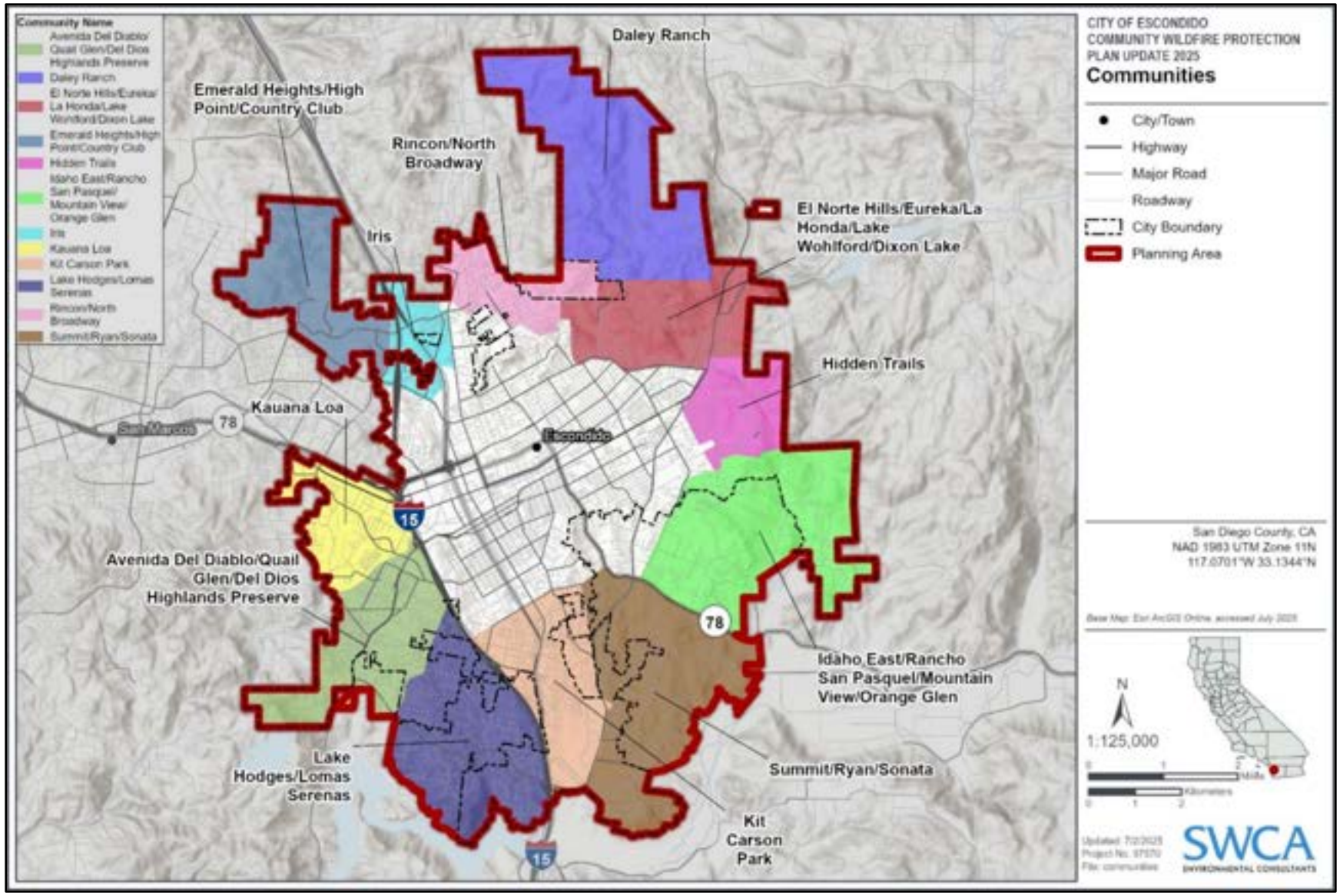

Figure C.1. Assessed communities within the City of Escondido.

Avenida Del Diablo/Quail Glen/Del Dios Highlands Preserve

Total Community Wildfire Hazard Rating *(Lowest Possible is 25%)*	***65% - High***
Risk Variable	**Risk Rating**
Ingress and Egress	Moderate
Road Width	Moderate
Road Conditions	Low
Fire Access	Extreme
Steet Signs	Low
Predominant Vegetation	High
Defensible Space	High
Slope	Moderate
Roofing	Low
Siding Materials (predominant)	Extreme
Deck and fencing (predominant)	High
Building Set-back	Extreme
Water Sources	Low
Organized Response	Moderate
Placement of Gas and Electric Utilities	Extreme
Topographic features	Extreme
History of high fire occurrence	Extreme
Severe fire weather potential	Extreme
Separation of adjacent structures	Extreme

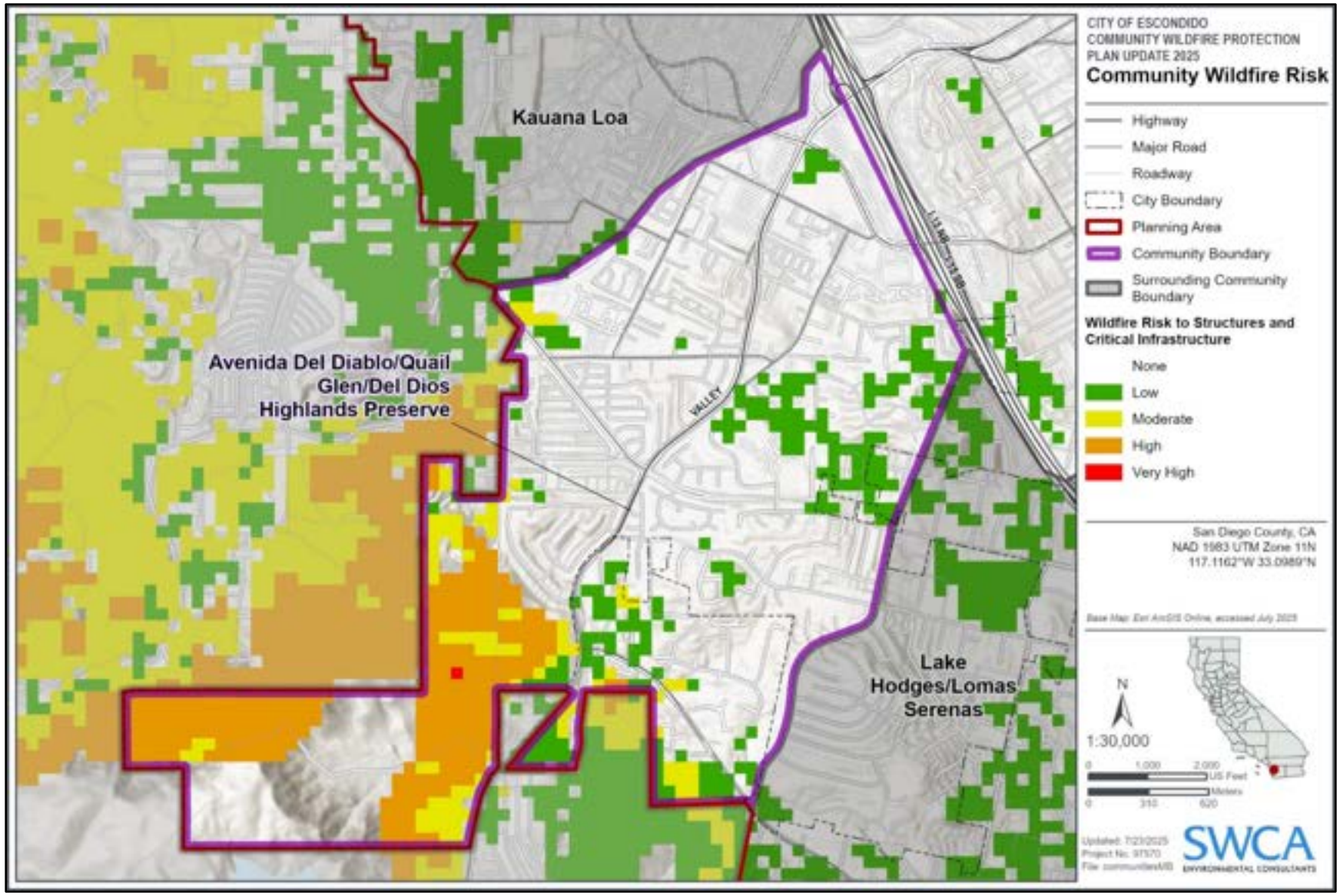

Figure C.2. Wildfire risk to structures and infrastructure around Avenida Del Diablo/Quail Glen/Del Dios Highlands Preserve.

Table C.1. Avenida Del Diablo/Quail Glen/Del Dios Highlands Preserve Summary of Community Characteristics Related to Wildfire Risk

Means of Access	Percentage of Community
Ingress and Egress	
2 or more roads in and out	75%
1 road in and out	25%
Road Width	
> 24 ft	50%
> 20 ft < 24 ft	50%
< 20 ft	
Road Conditions	
Surfaced road, grade < 5%	75%
Surfaced road, grade > 5%	25%
Non-surfaced road, grade < 5%	
Non-surfaced road, grade > 5%	
Other than all season	
Fire Access	
< 300 ft with turnaround	100%
> 300 ft with turnaround	
< 300 ft with no turnaround	
> 300 ft with no turnaround	
Street Signs (Including Address Markers)	
Present – reflective	100%
Present – non-reflective	
Not present	
Vegetation (Fuel Models)	**Percentage of Community**
Predominant Vegetation	
Non-Burnable (NB)	
Grass (GR)	
Grass-Shrub (GS)	20%
Shrub (SH)	50%
Timber-Understory (TU)	30%
Timber-Litter (TL)	
Slash-Blow (SB)	
Defensible Space	
> 100 ft around structure	
> 70 ft < 100 ft around structure	
> 30 ft < 70 ft around structure	50%

< 30 ft around structure	50%
Topography Within 300 ft of Structures	**Percentage of Community**
Slope	
< 9%	25%
10% to 20%	25%
21% to 30%	50%
31% to 40%	
>41%	
Additional Rating Factors (rate all that apply)	***Scale from 1-4***
Topographic features	2
History of high fire occurrence	1
Severe fire weather potential	4
Separation of adjacent structures	2
Roofing Assembly	**Percentage of Community**
Roofing	
Class A - metal roof, clay/concrete tiles, slate, asphalt shingles	100%
Class B - pressure treated composite shakes and shingles	
Class C - untreated wood shingle, plywood, particle board	
Unrated - Extremely poor roofing conditions	
Building Construction	**Percentage of Community**
Siding Materials (predominant)	
Non-combustible (brick/concrete)	
Fire Resistive (stucco/adobe)	50%
Combustible (wood or vinyl)	50%
Deck and fencing (predominant)	
No deck or fence/non-combustible	50%
Combustible deck and fence	50%
Building Set-back	
>30ft to slope	25%
<30ft to slope	75%
Available Fire Protection	
Water Sources	***Yes/No and Type***
Water Source	Yes
Water Source Type	Hydrant and Tank
Organized Response	***Percentage of Community***
Station < 5 mi from community	100%
Station > 5 mi from community	

Placement of Gas and Electric Utilities	Percentage of Community
Underground gas and electric	
Aboveground gas	25%
Aboveground electric	100%
Aboveground gas and electric	

El Norte Hills/Eureka/La Honda/Lake Wohlford/Dixon Lake

Total Community Wildfire Hazard Rating *(Lowest Possible is 25%)*	***60% - Moderate***
Risk Variable	**Risk Rating**
Ingress and Egress	High
Road Width	Moderate
Road Conditions	Low
Fire Access	Extreme
Steet Signs	Low
Predominant Vegetation	High
Defensible Space	Moderate
Slope	Moderate
Roofing	Low
Siding Materials (predominant)	Extreme
Deck and fencing (predominant)	Moderate
Building Set-back	Extreme
Water Sources	Low
Organized Response	Moderate
Placement of Gas and Electric Utilities	High
Topographic features	Extreme
History of high fire occurrence	Extreme
Severe fire weather potential	Extreme
Separation of adjacent structures	Extreme

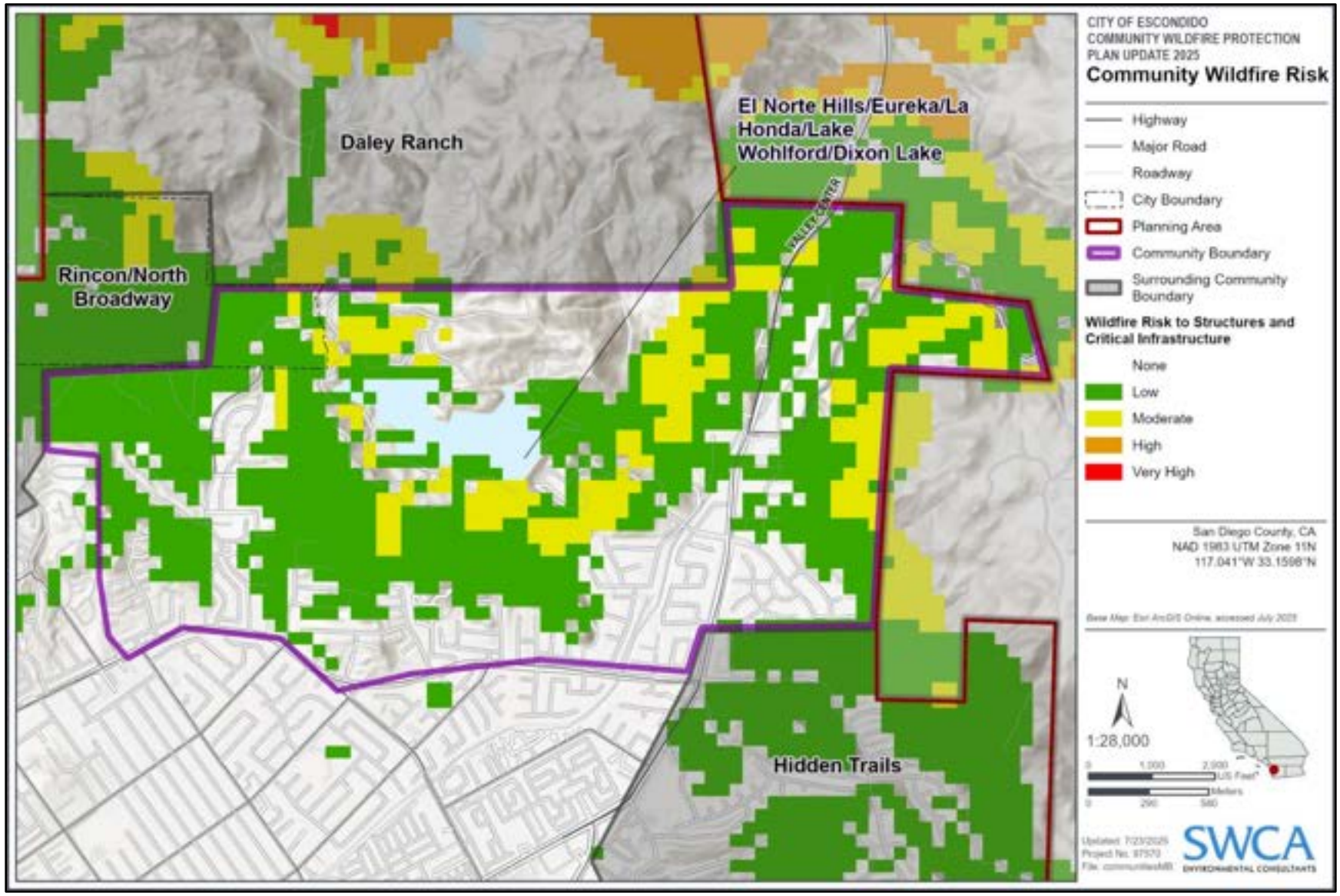

Figure C.3. Wildfire risk to structures and infrastructure around El Norte Hills/Eureka/La Honda/Lake Wohlford/Dixon Lake.

Table C.2. El Norte Hills/Eureka/La Honda/Lake Wohlford/Dixon Lake Summary of Community Characteristics Related to Wildfire Risk

Means of Access	Percentage of Community
Ingress and Egress	
2 or more roads in and out	25%
1 road in and out	75%
Road Width	
> 24 ft	50%
> 20 ft < 24 ft	50%
< 20 ft	
Road Conditions	
Surfaced road, grade < 5%	25%
Surfaced road, grade > 5%	75%
Non-surfaced road, grade < 5%	
Non-surfaced road, grade > 5%	
Other than all season	
Fire Access	
< 300 ft with turnaround	75%
> 300 ft with turnaround	25%
< 300 ft with no turnaround	
> 300 ft with no turnaround	
Street Signs (Including Address Markers)	
Present – reflective	100%
Present – non-reflective	
Not present	
Vegetation (Fuel Models)	**Percentage of Community**
Predominant Vegetation	
Non-Burnable (NB)	
Grass (GR)	10%
Grass-Shrub (GS)	20%
Shrub (SH)	60%
Timber-Understory (TU)	10%
Timber-Litter (TL)	
Slash-Blow (SB)	
Defensible Space	
> 100 ft around structure	
> 70 ft < 100 ft around structure	50%
> 30 ft < 70 ft around structure	50%

< 30 ft around structure	
Topography Within 300 ft of Structures	**Percentage of Community**
Slope	
< 9%	50%
10% to 20%	25%
21% to 30%	25%
31% to 40%	
>41%	
Additional Rating Factors (rate all that apply)	***Scale from 1-4***
Topographic features	3
History of high fire occurrence	1
Severe fire weather potential	4
Separation of adjacent structures	2
Roofing Assembly	**Percentage of Community**
Roofing	
Class A - metal roof, clay/concrete tiles, slate, asphalt shingles	100%
Class B - pressure treated composite shakes and shingles	
Class C - untreated wood shingle, plywood, particle board	
Unrated - Extremely poor roofing conditions	
Building Construction	**Percentage of Community**
Siding Materials (predominant)	
Non-combustible (brick/concrete)	50%
Fire Resistive (stucco/adobe)	50%
Combustible (wood or vinyl)	
Deck and fencing (predominant)	
No deck or fence/non-combustible	75%
Combustible deck and fence	25%
Building Set-back	
>30ft to slope	
<30ft to slope	100%
Available Fire Protection	
Water Sources	***Yes/No and Type***
Water Source	Yes
Water Source Type	Hydrant
Organized Response	***Percentage of Community***
Station < 5 mi from community	100%
Station > 5 mi from community	

Placement of Gas and Electric Utilities	Percentage of Community
Underground gas and electric	75%
Aboveground gas	
Aboveground electric	25%
Aboveground gas and electric	

Emerald Heights/High Point/Country Club

Total Community Wildfire Hazard Rating *(Lowest Possible is 25%)*	***60% - Moderate***
Risk Variable	**Risk Rating**
Ingress and Egress	Extreme
Road Width	Moderate
Road Conditions	Low
Fire Access	High
Steet Signs	Low
Predominant Vegetation	High
Defensible Space	Moderate
Slope	Moderate
Roofing	Low
Siding Materials (predominant)	Extreme
Deck and fencing (predominant)	Moderate
Building Set-back	Extreme
Water Sources	Low
Organized Response	Moderate
Placement of Gas and Electric Utilities	Moderate
Topographic features	Extreme
History of high fire occurrence	Extreme
Severe fire weather potential	Extreme
Separation of adjacent structures	Extreme

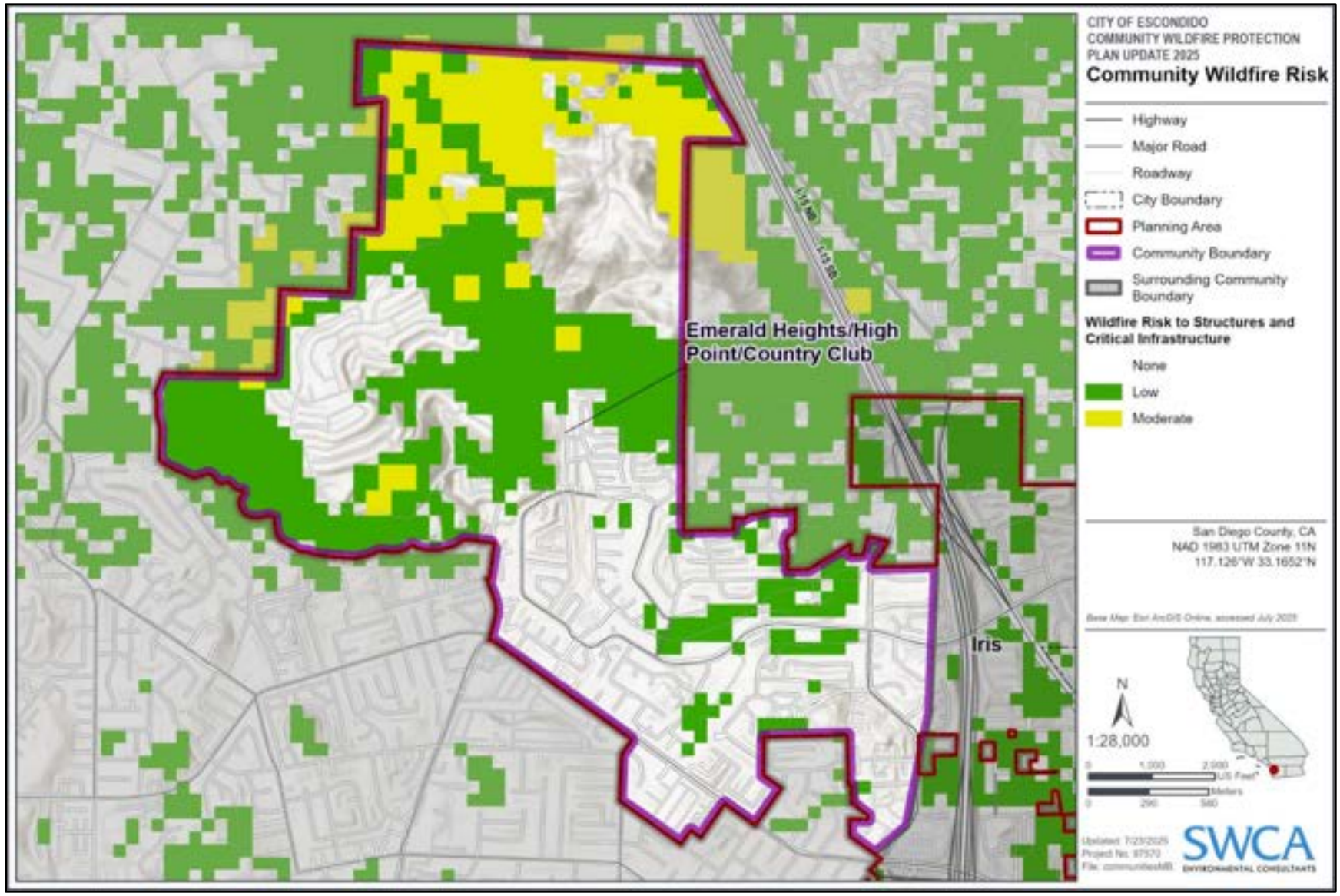

Figure C.4. Wildfire risk to structures and infrastructure around Emerald Heights/High Point/Country Club.

Table C.3. Emerald Heights/High Point/Country Club Summary of Community Characteristics Related to Wildfire Risk

Means of Access	Percentage of Community
Ingress and Egress	
2 or more roads in and out	25%
1 road in and out	75%
Road Width	
> 24 ft	50%
> 20 ft < 24 ft	50%
< 20 ft	
Road Conditions	
Surfaced road, grade < 5%	75%
Surfaced road, grade > 5%	25%
Non-surfaced road, grade < 5%	
Non-surfaced road, grade > 5%	
Other than all season	
Fire Access	
< 300 ft with turnaround	75%
> 300 ft with turnaround	25%
< 300 ft with no turnaround	
> 300 ft with no turnaround	
Street Signs (Including Address Markers)	
Present – reflective	100%
Present – non-reflective	
Not present	
Vegetation (Fuel Models)	**Percentage of Community**
Predominant Vegetation	
Non-Burnable (NB)	
Grass (GR)	10%
Grass-Shrub (GS)	20%
Shrub (SH)	60%
Timber-Understory (TU)	10%
Timber-Litter (TL)	
Slash-Blow (SB)	
Defensible Space	
> 100 ft around structure	
> 70 ft < 100 ft around structure	50%
> 30 ft < 70 ft around structure	50%

< 30 ft around structure	
Topography Within 300 ft of Structures	**Percentage of Community**
Slope	
< 9%	50%
10% to 20%	25%
21% to 30%	25%
31% to 40%	
>41%	
Additional Rating Factors (rate all that apply)	***Scale from 1-4***
Topographic features	3
History of high fire occurrence	1
Severe fire weather potential	4
Separation of adjacent structures	2
Roofing Assembly	**Percentage of Community**
Roofing	
Class A - metal roof, clay/concrete tiles, slate, asphalt shingles	100%
Class B - pressure treated composite shakes and shingles	
Class C - untreated wood shingle, plywood, particle board	
Unrated - Extremely poor roofing conditions	
Building Construction	**Percentage of Community**
Siding Materials (predominant)	
Non-combustible (brick/concrete)	50%
Fire Resistive (stucco/adobe)	50%
Combustible (wood or vinyl)	
Deck and fencing (predominant)	
No deck or fence/non-combustible	75%
Combustible deck and fence	25%
Building Set-back	
>30ft to slope	
<30ft to slope	100%
Available Fire Protection	
Water Sources	***Yes/No and Type***
Water Source	Yes
Water Source Type	Hydrant
Organized Response	***Percentage of Community***
Station < 5 mi from community	100%
Station > 5 mi from community	

Placement of Gas and Electric Utilities	Percentage of Community
Underground gas and electric	75%
Aboveground gas	
Aboveground electric	25%
Aboveground gas and electric	

Hidden Trails

Total Community Wildfire Hazard Rating *(Lowest Possible is 25%)*	***58% - Moderate***
Risk Variable	**Risk Rating**
Entrance/Exit	Moderate
Road Width	Moderate
Road Conditions	Low
Fire Truck Access	Extreme
Street Signs	Low
Hazardous Fuels	High
Defensible Space	Moderate
Slope	Low
Topographic Features	Low
History of High Fire Occurrence	Extreme
Severe Fire Weather Potential	Moderate
Separation of Adjacent Structures	Extreme
Roofing	Low
Siding Materials	Moderate
Deck and Fencing	Extreme
Building Setback	Extreme
Water Sources	Extreme
Organized Response	Extreme
Utilities Placement	Extreme

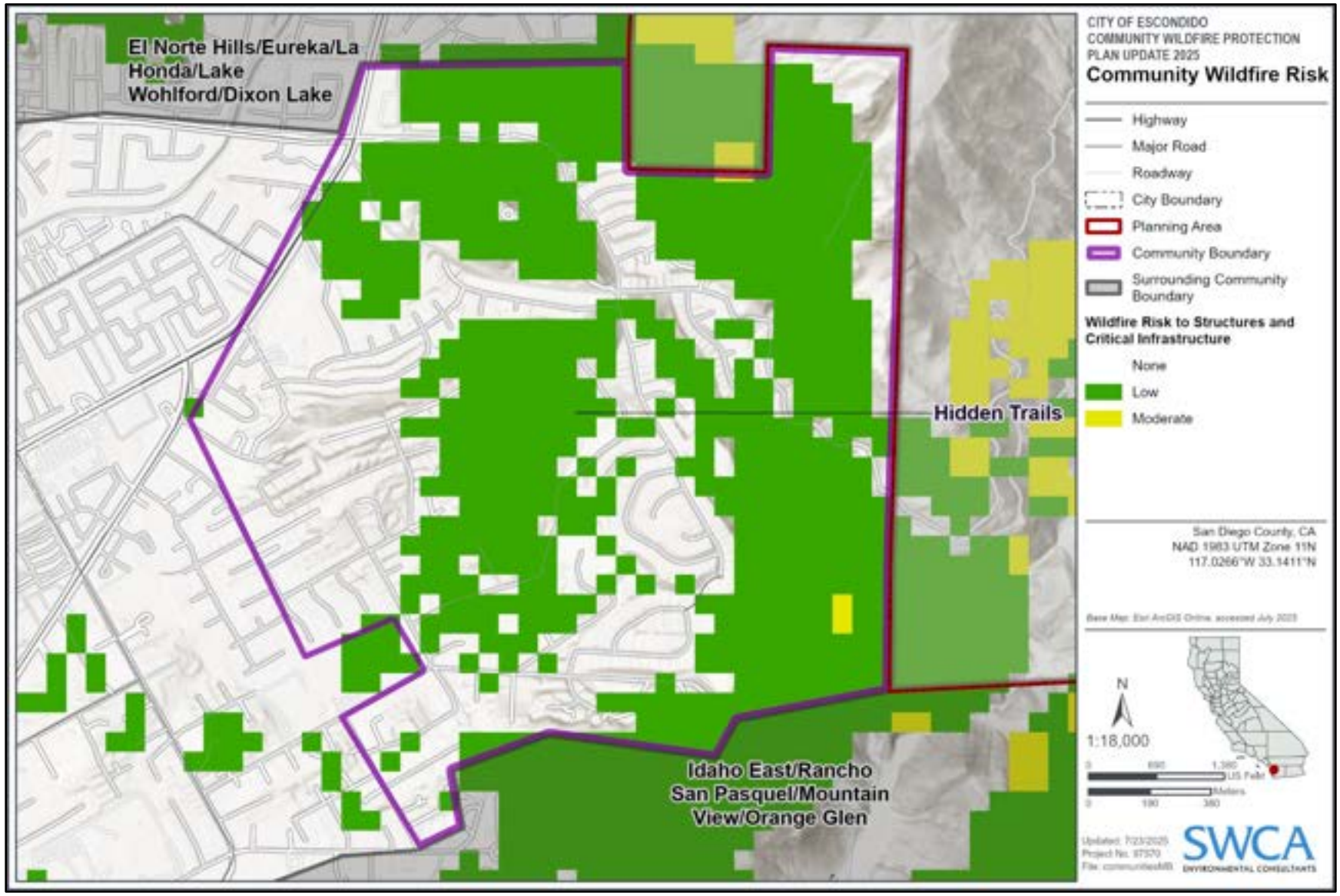

Figure C.5. Wildfire risk to structures and infrastructure around Hidden Trails.

Table C.4. Hidden Trails Summary of Community Characteristics Related to Wildfire Risk

Means of Access	Percentage of Community
Ingress and Egress	
2 or more roads in and out	75%
1 road in and out	25%
Road Width	
> 24 ft	50%
> 20 ft < 24 ft	50%
< 20 ft	
Road Conditions	
Surfaced road, grade < 5%	75%
Surfaced road, grade > 5%	25%
Non-surfaced road, grade < 5%	
Non-surfaced road, grade > 5%	
Other than all season	
Fire Access	
< 300 ft with turnaround	100%
> 300 ft with turnaround	
< 300 ft with no turnaround	
> 300 ft with no turnaround	
Street Signs (Including Address Markers)	
Present – reflective	100%
Present – non-reflective	
Not present	
Vegetation (Fuel Models)	**Percentage of Community**
Predominant Vegetation	
Non-Burnable (NB)	
Grass (GR)	10%
Grass-Shrub (GS)	20%
Shrub (SH)	40%
Timber-Understory (TU)	20%
Timber-Litter (TL)	10%
Slash-Blow (SB)	
Defensible Space	
> 100 ft around structure	
> 70 ft < 100 ft around structure	25%
> 30 ft < 70 ft around structure	50%
< 30 ft around structure	25%

Topography Within 300 ft of Structures	Percentage of Community
Slope	
< 9%	75%
10% to 20%	25%
21% to 30%	
31% to 40%	
>41%	
Additional Rating Factors (rate all that apply)	***Scale from 1-4***
Topographic features	2
History of high fire occurrence	2
Severe fire weather potential	4
Separation of adjacent structures	2
Roofing Assembly	**Percentage of Community**
Roofing	
Class A - metal roof, clay/concrete tiles, slate, asphalt shingles	100%
Class B - pressure treated composite shakes and shingles	
Class C - untreated wood shingle, plywood, particle board	
Unrated - Extremely poor roofing conditions	
Building Construction	**Percentage of Community**
Siding Materials (predominant)	
Non-combustible (brick/concrete)	
Fire Resistive (stucco/adobe)	50%
Combustible (wood or vinyl)	50%
Deck and fencing (predominant)	
No deck or fence/non-combustible	75%
Combustible deck and fence	25%
Building Set-back	
>30ft to slope	
<30ft to slope	100%
Available Fire Protection	
Water Sources	***Yes/No and Type***
Water Source	Yes
Water Source Type	Hydrant
Organized Response	***Percentage of Community***
Station < 5 mi from community	100%
Station > 5 mi from community	

Placement of Gas and Electric Utilities	Percentage of Community
Underground gas and electric	25%
Aboveground gas	
Aboveground electric	75%
Aboveground gas and electric	

Idaho East/Rancho San Pasquel/Mountain View/ Orange Glen

Total Community Wildfire Hazard Rating *(Lowest Possible is 25%)*	***64% - High***
Risk Variable	**Risk Rating**
Ingress and Egress	Extreme
Road Width	Extreme
Road Conditions	Low
Fire Access	Extreme
Steet Signs	Moderate
Predominant Vegetation	High
Defensible Space	Moderate
Slope	Moderate
Roofing	Low
Siding Materials (predominant)	Extreme
Deck and fencing (predominant)	High
Building Set-back	High
Water Sources	Low
Organized Response	Moderate
Placement of Gas and Electric Utilities	Extreme
Topographic features	Extreme
History of high fire occurrence	Extreme
Severe fire weather potential	Extreme
Separation of adjacent structures	Extreme

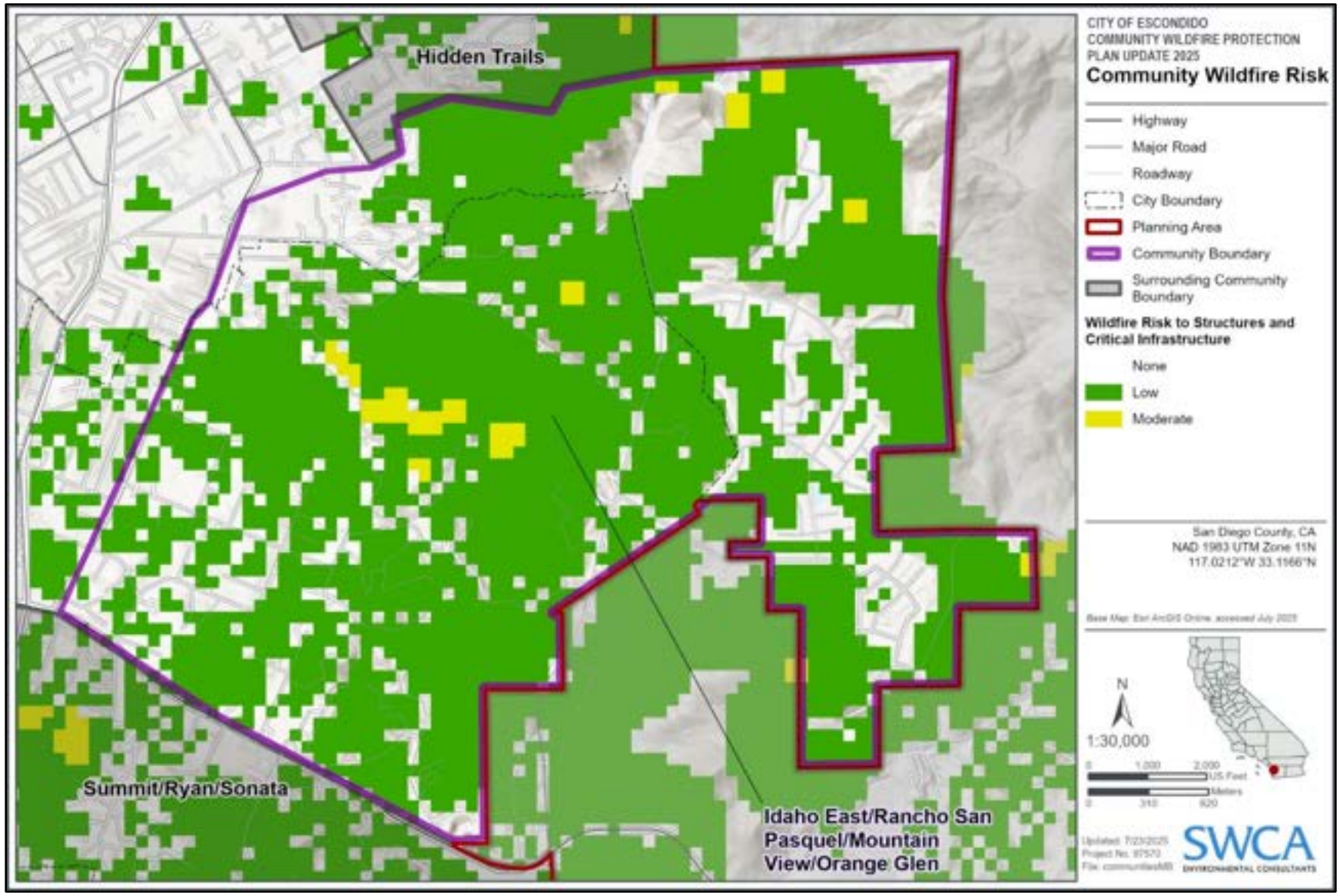

Figure C.6. Wildfire risk to structures and infrastructure around Idaho East/Rancho San Pasquel/Mountain View/Orange Glen.

Table C.5. Idaho East/Rancho San Pasquel/Mountain View/Orange Glen Summary of Community Characteristics Related to Wildfire Risk

Means of Access	Percentage of Community
Ingress and Egress	
2 or more roads in and out	25%
1 road in and out	75%
Road Width	
> 24 ft	
> 20 ft < 24 ft	50%
< 20 ft	50%
Road Conditions	
Surfaced road, grade < 5%	75%
Surfaced road, grade > 5%	25%
Non-surfaced road, grade < 5%	
Non-surfaced road, grade > 5%	
Other than all season	
Fire Access	
< 300 ft with turnaround	
> 300 ft with turnaround	
< 300 ft with no turnaround	75%
> 300 ft with no turnaround	25%
Street Signs (Including Address Markers)	
Present – reflective	50%
Present – non-reflective	25%
Not present	25%
Vegetation (Fuel Models)	**Percentage of Community**
Predominant Vegetation	
Non-Burnable (NB)	
Grass (GR)	
Grass-Shrub (GS)	20%
Shrub (SH)	40%
Timber-Understory (TU)	30%
Timber-Litter (TL)	10%
Slash-Blow (SB)	
Defensible Space	
> 100 ft around structure	
> 70 ft < 100 ft around structure	
> 30 ft < 70 ft around structure	75%

< 30 ft around structure	25%
Topography Within 300 ft of Structures	**Percentage of Community**
Slope	
< 9%	25%
10% to 20%	50%
21% to 30%	25%
31% to 40%	
>41%	
Additional Rating Factors (rate all that apply)	***Scale from 1-4***
Topographic features	2
History of high fire occurrence	2
Severe fire weather potential	4
Separation of adjacent structures	2
Roofing Assembly	**Percentage of Community**
Roofing	
Class A - metal roof, clay/concrete tiles, slate, asphalt shingles	100%
Class B - pressure treated composite shakes and shingles	
Class C - untreated wood shingle, plywood, particle board	
Unrated - Extremely poor roofing conditions	
Building Construction	**Percentage of Community**
Siding Materials (predominant)	
Non-combustible (brick/concrete)	
Fire Resistive (stucco/adobe)	50%
Combustible (wood or vinyl)	50%
Deck and fencing (predominant)	
No deck or fence/non-combustible	50%
Combustible deck and fence	50%
Building Set-back	
>30ft to slope	50%
<30ft to slope	50%
Available Fire Protection	
Water Sources	***Yes/No and Type***
Water Source	Yes
Water Source Type	Hydrant
Organized Response	***Percentage of Community***
Station < 5 mi from community	100%
Station > 5 mi from community	

Placement of Gas and Electric Utilities	Percentage of Community
Underground gas and electric	25%
Aboveground gas	
Aboveground electric	75%
Aboveground gas and electric	

Iris

Total Community Wildfire Hazard Rating *(Lowest Possible is 25%)*	***64% - High***
Risk Variable	**Risk Rating**
Ingress and Egress	Moderate
Road Width	High
Road Conditions	Low
Fire Access	Extreme
Steet Signs	Low
Predominant Vegetation	High
Defensible Space	High
Slope	Moderate
Roofing	Low
Siding Materials (predominant)	Extreme
Deck and fencing (predominant)	High
Building Set-back	Moderate
Water Sources	Low
Organized Response	Moderate
Placement of Gas and Electric Utilities	Extreme
Topographic features	Extreme
History of high fire occurrence	Extreme
Severe fire weather potential	Extreme
Separation of adjacent structures	Extreme

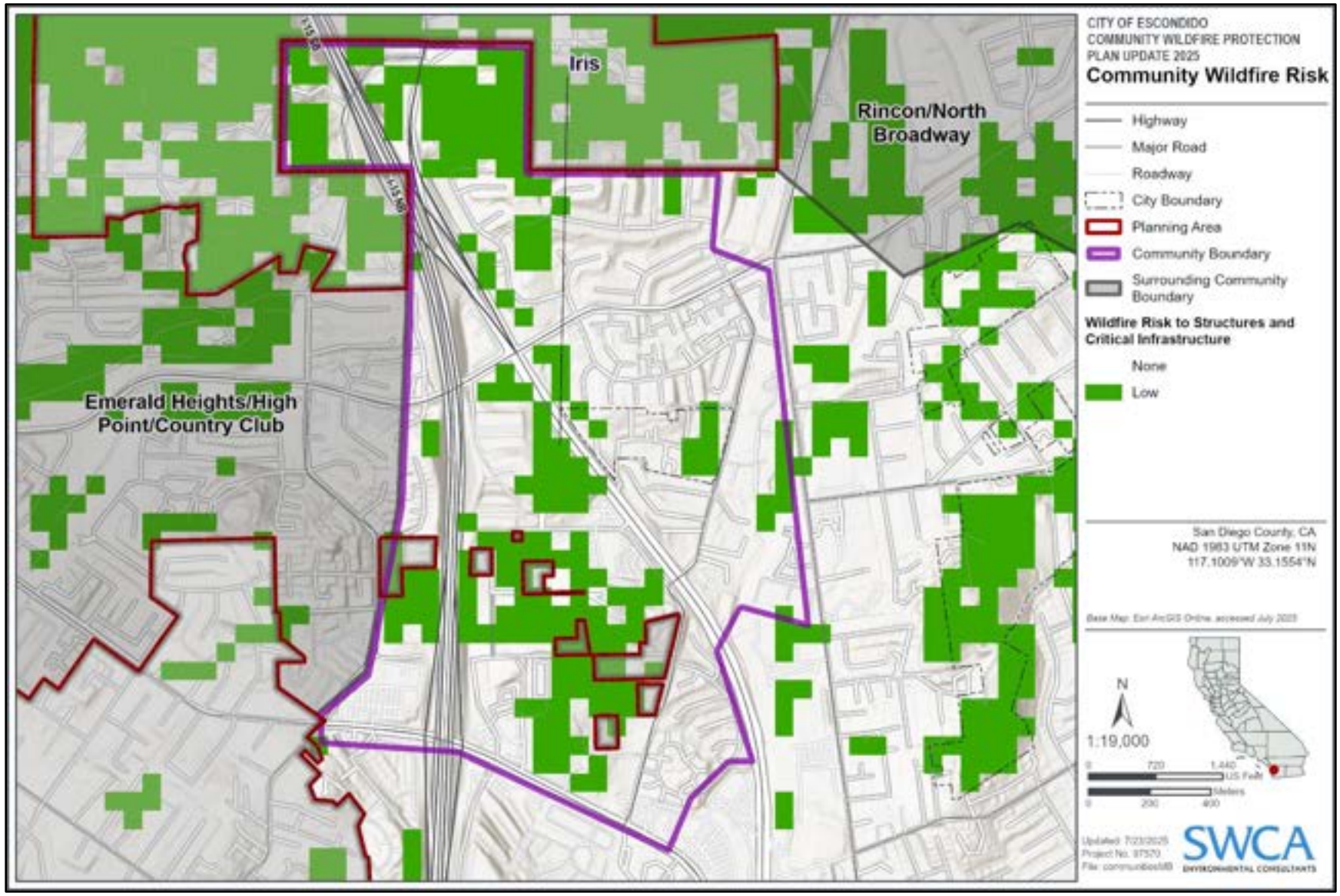

Figure C.7. Wildfire risk to structures and infrastructure around Rincon/North Broadway

Table C.6. Iris Summary of Community Characteristics Related to Wildfire Risk

Means of Access	Percentage of Community
Ingress and Egress	
2 or more roads in and out	75%
1 road in and out	25%
Road Width	
> 24 ft	
> 20 ft < 24 ft	75%
< 20 ft	25%
Road Conditions	
Surfaced road, grade < 5%	75%
Surfaced road, grade > 5%	25%
Non-surfaced road, grade < 5%	
Non-surfaced road, grade > 5%	
Other than all season	
Fire Access	
< 300 ft with turnaround	
> 300 ft with turnaround	
< 300 ft with no turnaround	75%
> 300 ft with no turnaround	25%
Street Signs (Including Address Markers)	
Present – reflective	75%
Present – non-reflective	25%
Not present	
Vegetation (Fuel Models)	**Percentage of Community**
Predominant Vegetation	
Non-Burnable (NB)	
Grass (GR)	20%
Grass-Shrub (GS)	40%
Shrub (SH)	30%
Timber-Understory (TU)	10%
Timber-Litter (TL)	
Slash-Blow (SB)	
Defensible Space	
> 100 ft around structure	
> 70 ft < 100 ft around structure	25%
> 30 ft < 70 ft around structure	25%
< 30 ft around structure	50%

Topography Within 300 ft of Structures	Percentage of Community
Slope	
< 9%	50%
10% to 20%	50%
21% to 30%	
31% to 40%	
>41%	
Additional Rating Factors (rate all that apply)	***Scale from 1-4***
Topographic features	2
History of high fire occurrence	1
Severe fire weather potential	4
Separation of adjacent structures	3
Roofing Assembly	**Percentage of Community**
Roofing	
Class A - metal roof, clay/concrete tiles, slate, asphalt shingles	100%
Class B - pressure treated composite shakes and shingles	
Class C - untreated wood shingle, plywood, particle board	
Unrated - Extremely poor roofing conditions	
Building Construction	**Percentage of Community**
Siding Materials (predominant)	
Non-combustible (brick/concrete)	50%
Fire Resistive (stucco/adobe)	50%
Combustible (wood or vinyl)	
Deck and fencing (predominant)	
No deck or fence/non-combustible	50%
Combustible deck and fence	50%
Building Set-back	
>30ft to slope	25%
<30ft to slope	75%
Available Fire Protection	
Water Sources	***Yes/No and Type***
Water Source	Yes
Water Source Type	Hydrant
Organized Response	***Percentage of Community***
Station < 5 mi from community	100%
Station > 5 mi from community	

Placement of Gas and Electric Utilities	Percentage of Community
Underground gas and electric	25%
Aboveground gas	
Aboveground electric	100%
Aboveground gas and electric	

Kauana Loa

Total Community Wildfire Hazard Rating *(Lowest Possible is 25%)*	**Moderate – 60%**
Risk Variable	**Risk Rating**
Ingress and Egress	Moderate
Road Width	Moderate
Road Conditions	Moderate
Fire Access	High
Steet Signs	Low
Predominant Vegetation	Moderate
Defensible Space	High
Slope	Moderate
Roofing	Low
Siding Materials (predominant)	Extreme
Deck and fencing (predominant)	High
Building Set-back	Moderate
Water Sources	Low
Organized Response	Moderate
Placement of Gas and Electric Utilities	Extreme
Topographic features	Extreme
History of high fire occurrence	Extreme
Severe fire weather potential	Extreme
Separation of adjacent structures	Extreme

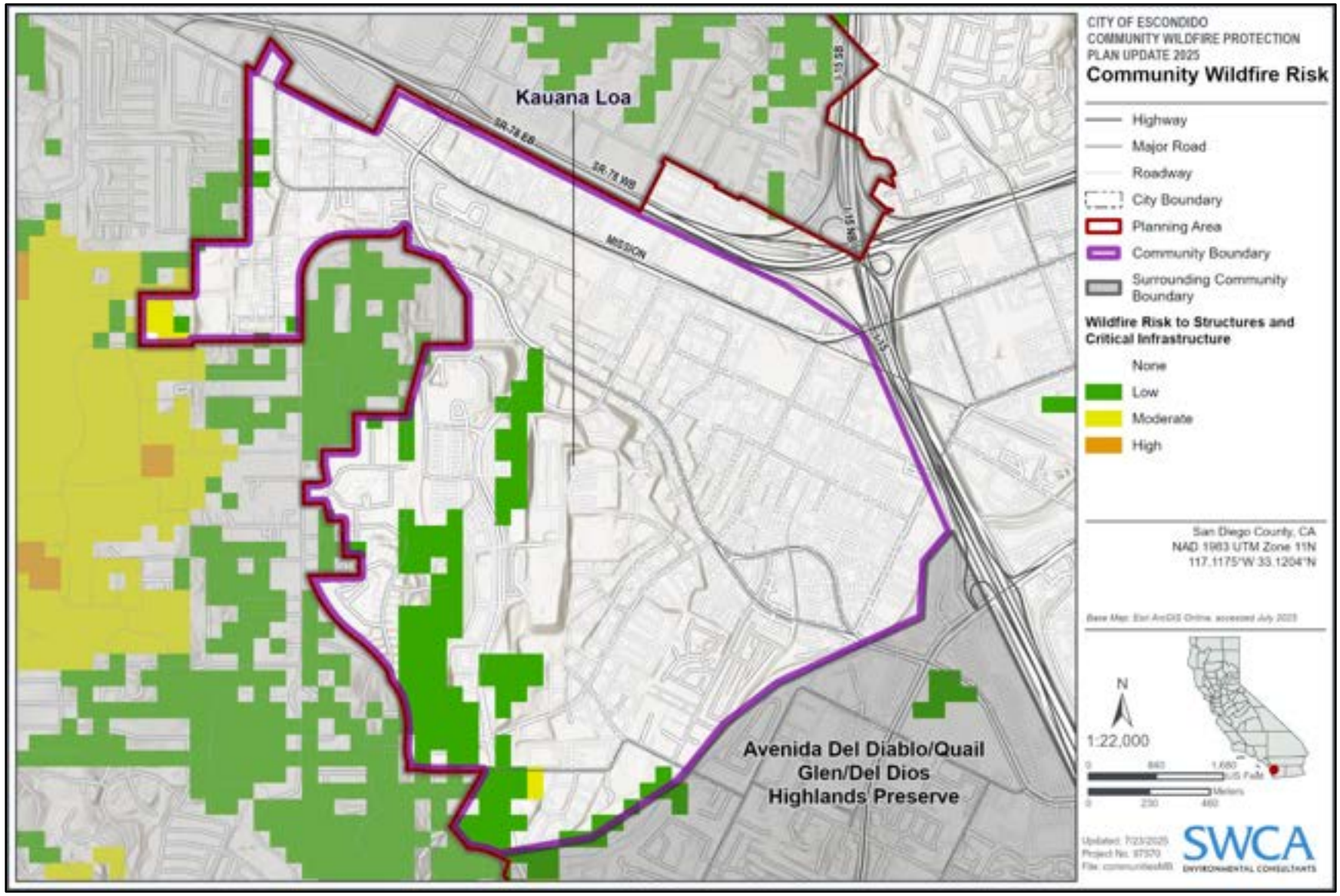

Figure C.8. Wildfire risk to structures and infrastructure around Kauana Loa.

Table C.7. Kauana Loa Summary of Community Characteristics Related to Wildfire Risk

Means of Access	Percentage of Community
Ingress and Egress	
2 or more roads in and out	75%
1 road in and out	25%
Road Width	
> 24 ft	25%
> 20 ft < 24 ft	25%
< 20 ft	
Road Conditions	
Surfaced road, grade < 5%	75%
Surfaced road, grade > 5%	25%
Non-surfaced road, grade < 5%	
Non-surfaced road, grade > 5%	
Other than all season	
Fire Access	
< 300 ft with turnaround	100%
> 300 ft with turnaround	
< 300 ft with no turnaround	
> 300 ft with no turnaround	
Street Signs (Including Address Markers)	
Present – reflective	100%
Present – non-reflective	
Not present	
Vegetation (Fuel Models)	**Percentage of Community**
Predominant Vegetation	
Non-Burnable (NB)	30%
Grass (GR)	20%
Grass-Shrub (GS)	20%
Shrub (SH)	20%
Timber-Understory (TU)	10%
Timber-Litter (TL)	
Slash-Blow (SB)	
Defensible Space	
> 100 ft around structure	
> 70 ft < 100 ft around structure	
> 30 ft < 70 ft around structure	25%
< 30 ft around structure	75%

Topography Within 300 ft of Structures	Percentage of Community
Slope	
< 9%	50%
10% to 20%	25%
21% to 30%	25%
31% to 40%	
>41%	
Additional Rating Factors (rate all that apply)	***Scale from 1-4***
Topographic features	2
History of high fire occurrence	1
Severe fire weather potential	4
Separation of adjacent structures	2
Roofing Assembly	**Percentage of Community**
Roofing	
Class A - metal roof, clay/concrete tiles, slate, asphalt shingles	100%
Class B - pressure treated composite shakes and shingles	
Class C - untreated wood shingle, plywood, particle board	
Unrated - Extremely poor roofing conditions	
Building Construction	**Percentage of Community**
Siding Materials (predominant)	
Non-combustible (brick/concrete)	25%
Fire Resistive (stucco/adobe)	50%
Combustible (wood or vinyl)	25%
Deck and fencing (predominant)	
No deck or fence/non-combustible	50%
Combustible deck and fence	50%
Building Set-back	
>30ft to slope	75%
<30ft to slope	25%
Available Fire Protection	
Water Sources	***Yes/No and Type***
Water Source	Yes
Water Source Type	Hydrant
Organized Response	***Percentage of Community***
Station < 5 mi from community	100%
Station > 5 mi from community	

Placement of Gas and Electric Utilities	Percentage of Community
Underground gas and electric	
Aboveground gas	
Aboveground electric	100%
Aboveground gas and electric	

Lake Hodges/Lomas Serenas

Total Community Wildfire Hazard Rating *(Lowest Possible is 25%)*	**68% - High**
Risk Variable	**Risk Rating**
Ingress and Egress	Low
Road Width	Moderate
Road Conditions	Low
Fire Access	Extreme
Steet Signs	Low
Predominant Vegetation	High
Defensible Space	Extreme
Slope	High
Roofing	Low
Siding Materials (predominant)	Extreme
Deck and fencing (predominant)	Moderate
Building Set-back	High
Water Sources	Low
Organized Response	Moderate
Placement of Gas and Electric Utilities	Extreme
Topographic features	Extreme
History of high fire occurrence	Extreme
Severe fire weather potential	Extreme
Separation of adjacent structures	Extreme

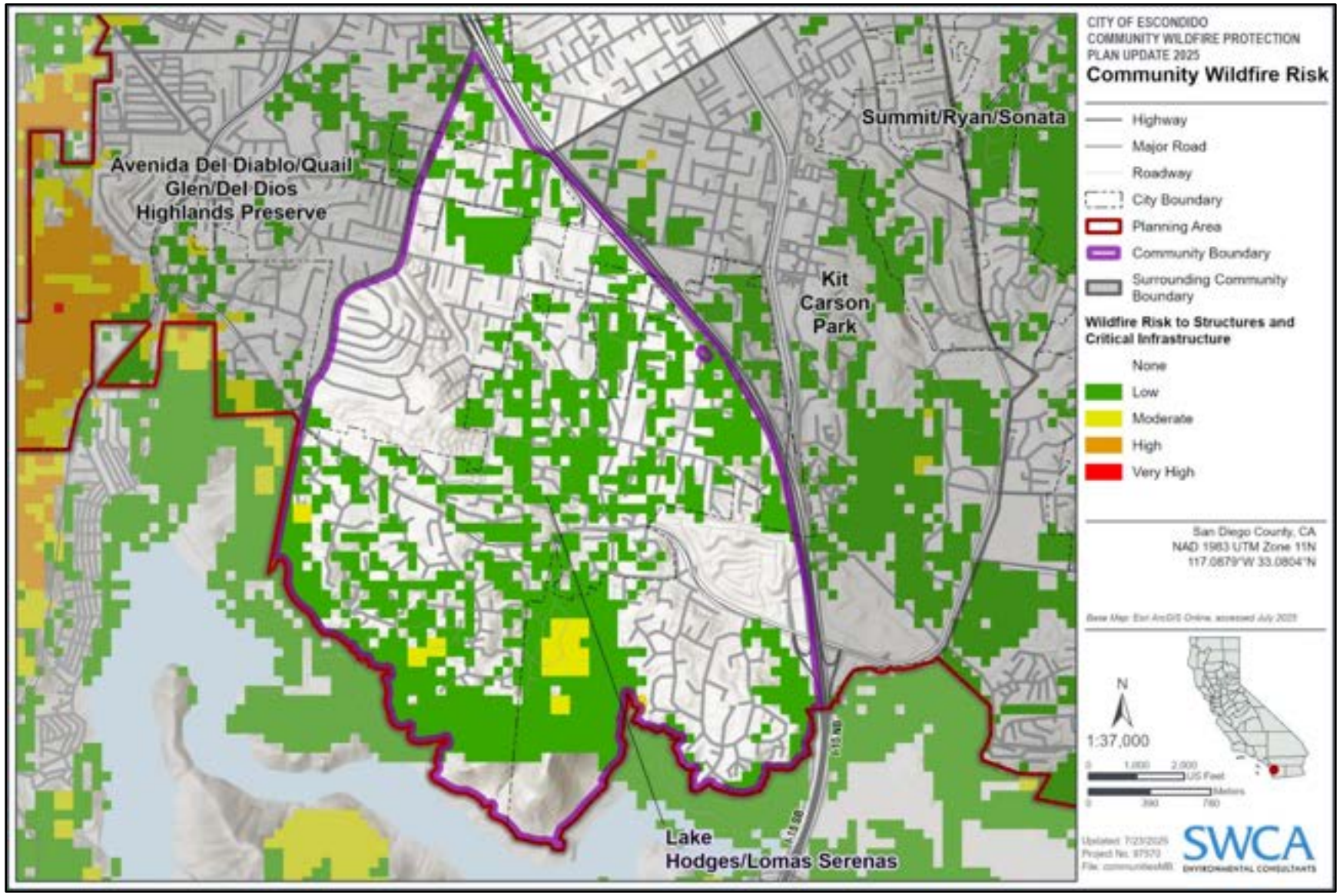

Figure C.9. Wildfire risk to structures and infrastructure around Lake Hodges/Lomas Serenas.

Table C.9. Lake Hodges/Lomas Serenas Summary of Community Characteristics Related to Wildfire Risk

Means of Access	Percentage of Community
Ingress and Egress	
2 or more roads in and out	100%
1 road in and out	
Road Width	
> 24 ft	50%
> 20 ft < 24 ft	50%
< 20 ft	
Road Conditions	
Surfaced road, grade < 5%	100%
Surfaced road, grade > 5%	
Non-surfaced road, grade < 5%	
Non-surfaced road, grade > 5%	
Other than all season	
Fire Access	
< 300 ft with turnaround	
> 300 ft with turnaround	
< 300 ft with no turnaround	75%
> 300 ft with no turnaround	25%
Street Signs (Including Address Markers)	
Present – reflective	100%
Present – non-reflective	
Not present	
Vegetation (Fuel Models)	**Percentage of Community**
Predominant Vegetation	
Non-Burnable (NB)	
Grass (GR)	
Grass-Shrub (GS)	10%
Shrub (SH)	40%
Timber-Understory (TU)	40%
Timber-Litter (TL)	10%
Slash-Blow (SB)	
Defensible Space	
> 100 ft around structure	
> 70 ft < 100 ft around structure	
> 30 ft < 70 ft around structure	25%

< 30 ft around structure	75%
Topography Within 300 ft of Structures	**Percentage of Community**
Slope	
< 9%	25%
10% to 20%	25%
21% to 30%	25%
31% to 40%	25%
>41%	
Additional Rating Factors (rate all that apply)	***Scale from 1-4***
Topographic features	4
History of high fire occurrence	4
Severe fire weather potential	4
Separation of adjacent structures	2
Roofing Assembly	**Percentage of Community**
Roofing	
Class A - metal roof, clay/concrete tiles, slate, asphalt shingles	100%
Class B - pressure treated composite shakes and shingles	
Class C - untreated wood shingle, plywood, particle board	
Unrated - Extremely poor roofing conditions	
Building Construction	**Percentage of Community**
Siding Materials (predominant)	
Non-combustible (brick/concrete)	
Fire Resistive (stucco/adobe)	50%
Combustible (wood or vinyl)	50%
Deck and fencing (predominant)	
No deck or fence/non-combustible	75%
Combustible deck and fence	25%
Building Set-back	
>30ft to slope	50%
<30ft to slope	50%
Available Fire Protection	
Water Sources	***Yes/No and Type***
Water Source	Yes
Water Source Type	Hydrant
Organized Response	***Percentage of Community***
Station < 5 mi from community	100%
Station > 5 mi from community	

Placement of Gas and Electric Utilities	Percentage of Community
Underground gas and electric	
Aboveground gas	
Aboveground electric	100%
Aboveground gas and electric	

Summit/Ryan/Sonata

Total Community Wildfire Hazard Rating *(Lowest Possible is 25%)*	**68% - High**
Risk Variable	**Risk Rating**
Ingress and Egress	Extreme
Road Width	Moderate
Road Conditions	Low
Fire Access	High
Steet Signs	Low
Predominant Vegetation	High
Defensible Space	High
Slope	High
Roofing	Low
Siding Materials (predominant)	Extreme
Deck and fencing (predominant)	High
Building Set-back	Extreme
Water Sources	Low
Organized Response	Moderate
Placement of Gas and Electric Utilities	Extreme
Topographic features	Extreme
History of high fire occurrence	Extreme
Severe fire weather potential	Extreme
Separation of adjacent structures	Extreme

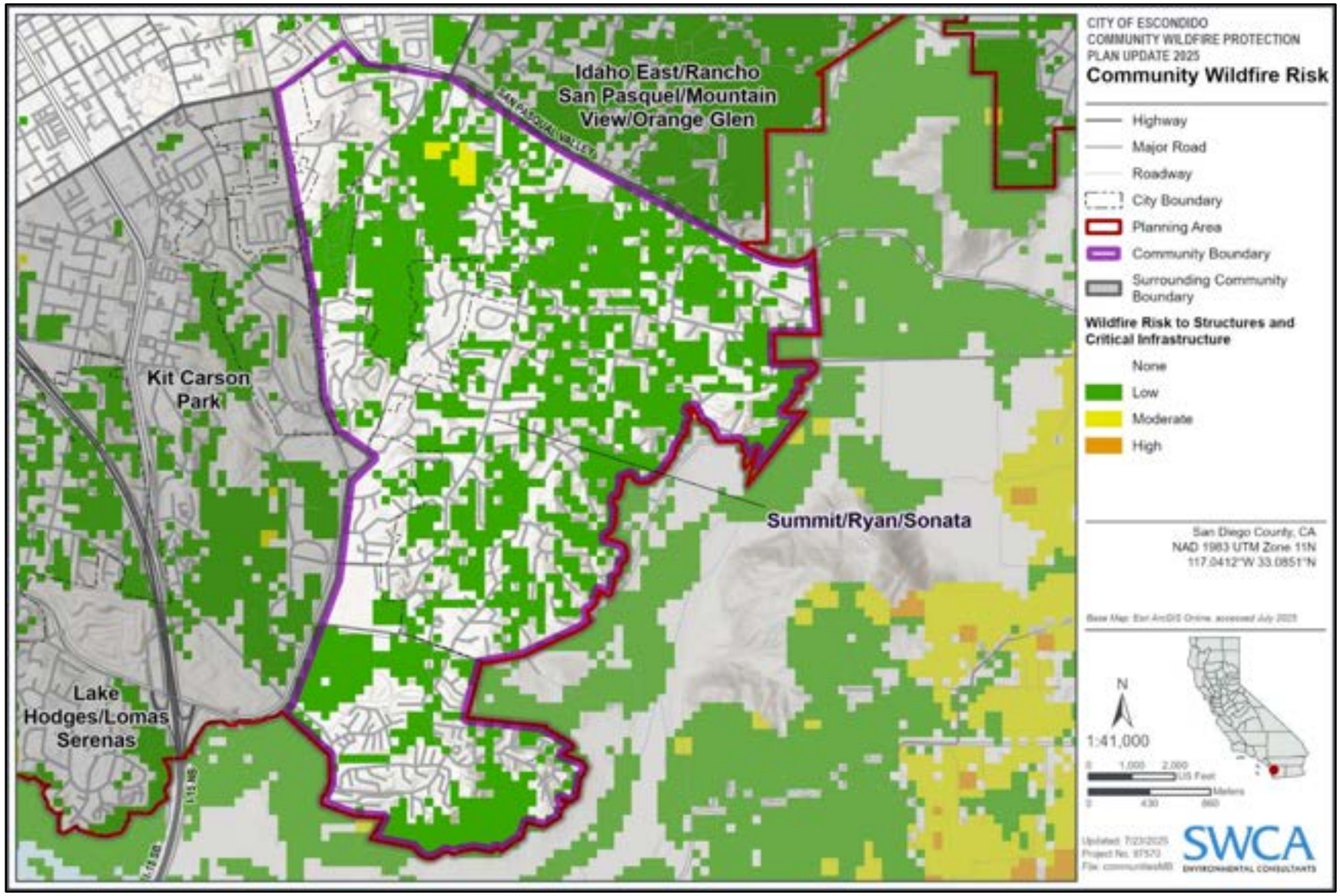

Figure C.10. Wildfire risk to structures and infrastructure around Summit/Ryan/Sonata.

Table C.10. Summit/Ryan/Sonata Summary of Community Characteristics Related to Wildfire Risk

Means of Access	Percentage of Community
Ingress and Egress	
2 or more roads in and out	25%
1 road in and out	75%
Road Width	
> 24 ft	25%
> 20 ft < 24 ft	75%
< 20 ft	
Road Conditions	
Surfaced road, grade < 5%	75%
Surfaced road, grade > 5%	25%
Non-surfaced road, grade < 5%	
Non-surfaced road, grade > 5%	
Other than all season	
Fire Access	
< 300 ft with turnaround	50%
> 300 ft with turnaround	50%
< 300 ft with no turnaround	
> 300 ft with no turnaround	
Street Signs (Including Address Markers)	
Present – reflective	100%
Present – non-reflective	
Not present	
Vegetation (Fuel Models)	**Percentage of Community**
Predominant Vegetation	
Non-Burnable (NB)	
Grass (GR)	10%
Grass-Shrub (GS)	20%
Shrub (SH)	40%
Timber-Understory (TU)	20%
Timber-Litter (TL)	10%
Slash-Blow (SB)	
Defensible Space	
> 100 ft around structure	
> 70 ft < 100 ft around structure	25%
> 30 ft < 70 ft around structure	25%
< 30 ft around structure	50%

Topography Within 300 ft of Structures	Percentage of Community
Slope	
< 9%	25%
10% to 20%	50%
21% to 30%	25%
31% to 40%	
>41%	
Additional Rating Factors (rate all that apply)	***Scale from 1-4***
Topographic features	4
History of high fire occurrence	1
Severe fire weather potential	4
Separation of adjacent structures	2
Roofing Assembly	**Percentage of Community**
Roofing	
Class A - metal roof, clay/concrete tiles, slate, asphalt shingles	100%
Class B - pressure treated composite shakes and shingles	
Class C - untreated wood shingle, plywood, particle board	
Unrated - Extremely poor roofing conditions	
Building Construction	**Percentage of Community**
Siding Materials (predominant)	
Non-combustible (brick/concrete)	25%
Fire Resistive (stucco/adobe)	25%
Combustible (wood or vinyl)	50%
Deck and fencing (predominant)	
No deck or fence/non-combustible	50%
Combustible deck and fence	50%
Building Set-back	
>30ft to slope	25%
<30ft to slope	75%
Available Fire Protection	
Water Sources	***Yes/No and Type***
Water Source	Yes
Water Source Type	Hydrant
Organized Response	***Percentage of Community***
Station < 5 mi from community	100%
Station > 5 mi from community	

Placement of Gas and Electric Utilities	Percentage of Community
Underground gas and electric	
Aboveground gas	50%
Aboveground electric	75%
Aboveground gas and electric	

Kit Carson Park

Total Community Wildfire Hazard Rating *(Lowest Possible is 25%)*	**62% - Moderate**
Risk Variable	**Risk Rating**
Ingress and Egress	Moderate
Road Width	Low
Road Conditions	Extreme
Fire Access	Low
Steet Signs	High
Predominant Vegetation	Moderate
Defensible Space	Moderate
Slope	Low
Roofing	Extreme
Siding Materials (predominant)	Extreme
Deck and fencing (predominant)	Extreme
Building Set-back	Low
Water Sources	Moderate
Organized Response	Extreme
Placement of Gas and Electric Utilities	Extreme
Topographic features	Extreme
History of high fire occurrence	Extreme
Severe fire weather potential	Extreme
Separation of adjacent structures	Moderate

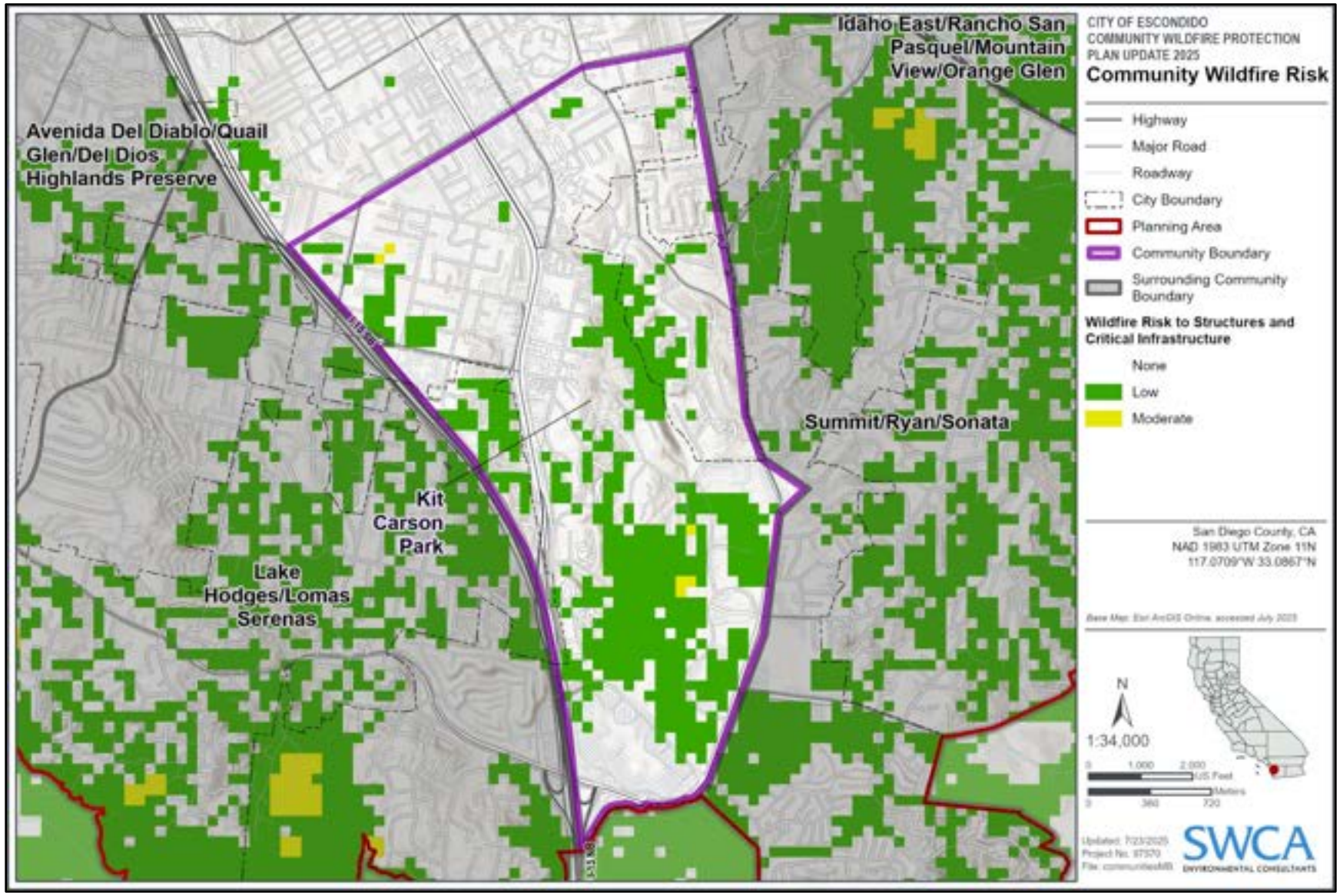

Figure C.11. Wildfire risk to structures and infrastructure around Kit Carson Park.

Table C.11. Kit Carson Park Summary of Community Characteristics Related to Wildfire Risk

Means of Access	Percentage of Community
Ingress and Egress	
2 or more roads in and out	75%
1 road in and out	25%
Road Width	
> 24 ft	50%
> 20 ft < 24 ft	50%
< 20 ft	
Road Conditions	
Surfaced road, grade < 5%	75%
Surfaced road, grade > 5%	25%
Non-surfaced road, grade < 5%	
Non-surfaced road, grade > 5%	
Other than all season	
Fire Access	
< 300 ft with turnaround	
> 300 ft with turnaround	
< 300 ft with no turnaround	100%
> 300 ft with no turnaround	
Street Signs (Including Address Markers)	
Present – reflective	100%
Present – non-reflective	
Not present	
Vegetation (Fuel Models)	**Percentage of Community**
Predominant Vegetation	
Non-Burnable (NB)	
Grass (GR)	10%
Grass-Shrub (GS)	30%
Shrub (SH)	50%
Timber-Understory (TU)	10%
Timber-Litter (TL)	
Slash-Blow (SB)	
Defensible Space	
> 100 ft around structure	
> 70 ft < 100 ft around structure	25%
> 30 ft < 70 ft around structure	50%
< 30 ft around structure	25%

Topography Within 300 ft of Structures	Percentage of Community
Slope	
< 9%	25%
10% to 20%	50%
21% to 30%	25%
31% to 40%	
>41%	
Additional Rating Factors (rate all that apply)	***Scale from 1-4***
Topographic features	3
History of high fire occurrence	1
Severe fire weather potential	4
Separation of adjacent structures	2
Roofing Assembly	**Percentage of Community**
Roofing	
Class A - metal roof, clay/concrete tiles, slate, asphalt shingles	100%
Class B - pressure treated composite shakes and shingles	
Class C - untreated wood shingle, plywood, particle board	
Unrated - Extremely poor roofing conditions	
Building Construction	**Percentage of Community**
Siding Materials (predominant)	
Non-combustible (brick/concrete)	
Fire Resistive (stucco/adobe)	50%
Combustible (wood or vinyl)	50%
Deck and fencing (predominant)	
No deck or fence/non-combustible	25%
Combustible deck and fence	75%
Building Set-back	
>30ft to slope	
<30ft to slope	100%
Available Fire Protection	
Water Sources	***Yes/No and Type***
Water Source	Yes
Water Source Type	Hydrant and Tank
Organized Response	***Percentage of Community***
Station < 5 mi from community	100%
Station > 5 mi from community	

Placement of Gas and Electric Utilities	Percentage of Community
Underground gas and electric	
Aboveground gas	25%
Aboveground electric	100%
Aboveground gas and electric	

Rincon/North Broadway

Total Community Wildfire Hazard Rating *(Lowest Possible is 25%)*	**60% - Moderate**
Risk Variable	**Risk Rating**
Ingress and Egress	High
Road Width	Low
Road Conditions	Low
Fire Access	Low
Steet Signs	Low
Predominant Vegetation	High
Defensible Space	High
Slope	Moderate
Roofing	Low
Siding Materials (predominant)	Extreme
Deck and fencing (predominant)	High
Building Set-back	Moderate
Water Sources	Low
Organized Response	Moderate
Placement of Gas and Electric Utilities	High
Topographic features	Extreme
History of high fire occurrence	Extreme
Severe fire weather potential	Extreme
Separation of adjacent structures	Extreme

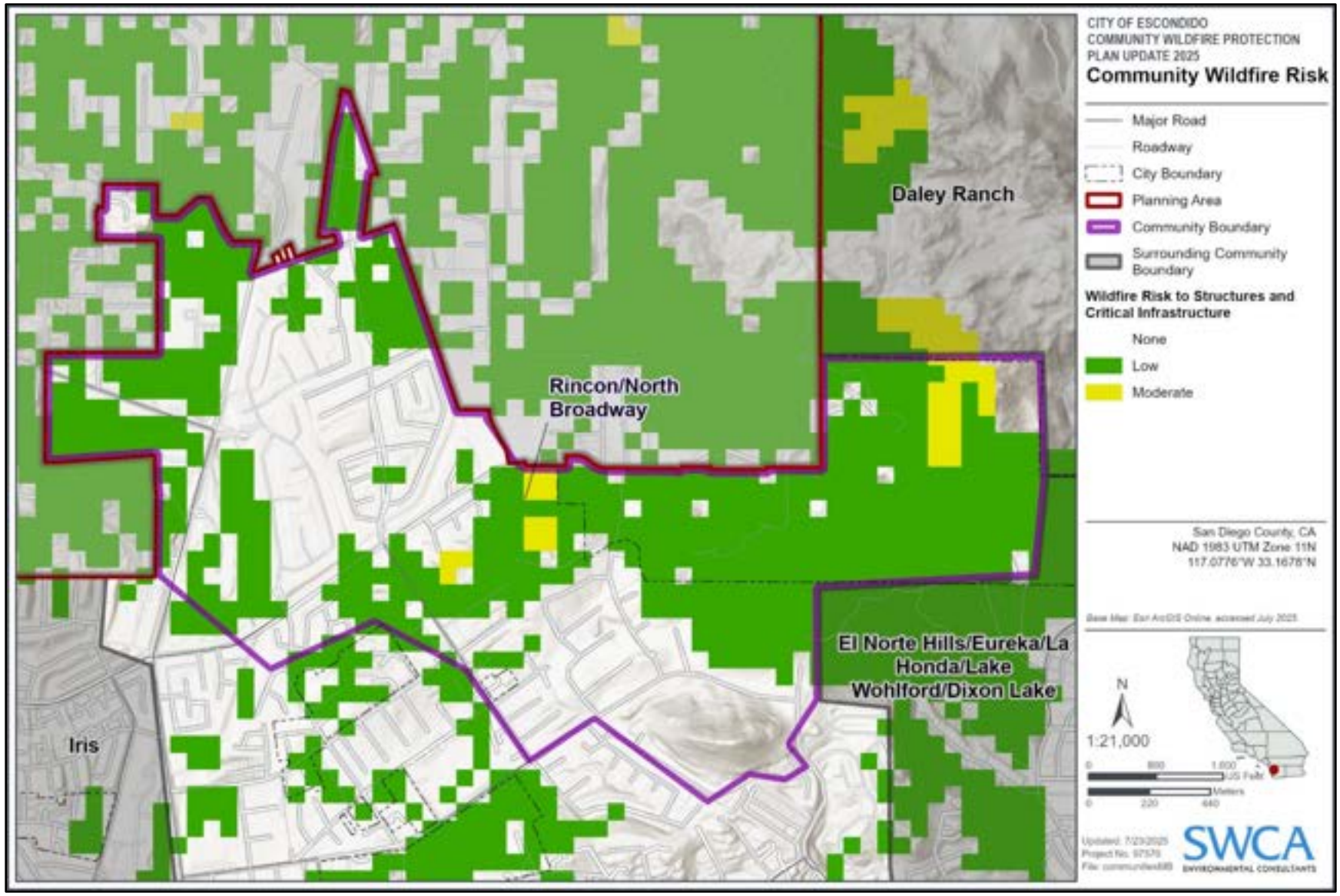

Figure C.12. Wildfire risk to structures and infrastructure around Rincon/North Broadway.

Table C.12. Rincon/North Broadway Summary of Community Characteristics Related to Wildfire Risk

Means of Access	Percentage of Community
Ingress and Egress	
2 or more roads in and out	50%
1 road in and out	50%
Road Width	
> 24 ft	75%
> 20 ft < 24 ft	25%
< 20 ft	
Road Conditions	
Surfaced road, grade < 5%	100%
Surfaced road, grade > 5%	
Non-surfaced road, grade < 5%	
Non-surfaced road, grade > 5%	
Other than all season	
Fire Access	
< 300 ft with turnaround	75%
> 300 ft with turnaround	25%
< 300 ft with no turnaround	
> 300 ft with no turnaround	
Street Signs (Including Address Markers)	
Present – reflective	100%
Present – non-reflective	
Not present	
Vegetation (Fuel Models)	**Percentage of Community**
Predominant Vegetation	
Non-Burnable (NB)	
Grass (GR)	20%
Grass-Shrub (GS)	30%
Shrub (SH)	40%
Timber-Understory (TU)	10%
Timber-Litter (TL)	
Slash-Blow (SB)	
Defensible Space	
> 100 ft around structure	
> 70 ft < 100 ft around structure	25%

> 30 ft < 70 ft around structure	25%
< 30 ft around structure	50%
Topography Within 300 ft of Structures	**Percentage of Community**
Slope	
< 9%	50%
10% to 20%	25%
21% to 30%	25%
31% to 40%	
>41%	
Additional Rating Factors (rate all that apply)	***Scale from 1-4***
Topographic features	2
History of high fire occurrence	1
Severe fire weather potential	4
Separation of adjacent structures	3
Roofing Assembly	**Percentage of Community**
Roofing	
Class A - metal roof, clay/concrete tiles, slate, asphalt shingles	100%
Class B - pressure treated composite shakes and shingles	
Class C - untreated wood shingle, plywood, particle board	
Unrated - Extremely poor roofing conditions	
Building Construction	**Percentage of Community**
Siding Materials (predominant)	
Non-combustible (brick/concrete)	
Fire Resistive (stucco/adobe)	50%
Combustible (wood or vinyl)	50%
Deck and fencing (predominant)	
No deck or fence/non-combustible	50%
Combustible deck and fence	50%
Building Set-back	
>30ft to slope	75%
<30ft to slope	25%
Available Fire Protection	
Water Sources	***Yes/No and Type***
Water Source	Yes
Water Source Type	Hydrant
Organized Response	***Percentage of Community***
Station < 5 mi from community	100%

Station > 5 mi from community	
Placement of Gas and Electric Utilities	**Percentage of Community**
Underground gas and electric	
Aboveground gas	
Aboveground electric	50%
Aboveground gas and electric	

Daley Ranch

Daley Ranch and the surrounding open space, including Dixon Lake, present significant wildfire planning challenges, particularly during high wind or Santa Ana wind events. Due to steep terrain, dense vegetation, and limited access points, direct fire suppression operations within Daley Ranch are difficult (City of Escondido 2022b). As a result, large-scale evacuation of recreational users and nearby residents may be necessary in the event of a fast-moving wildfire. The area is protected under conservation easements and open space mitigation agreements tied to regional development, which restrict fuel modification and new infrastructure development (City of Escondido 2020).

Dixon Lake, located along the southern edge of Daley Ranch, is both a popular recreation site and a vital municipal drinking water reservoir. The lake is maintained behind an earthen dam, which has been identified as needing future upgrades to meet modern safety and hydrologic performance standards (California DSOD 2021). Additionally, irrigated avocado orchards located along the northern and northeastern edges of the ranch provide limited green fuel breaks that may help reduce wildfire intensity in localized areas (City of Escondido 2022c).

Daley Ranch includes an extensive network of more than 20 miles of multi-use trails that serve hikers, mountain bikers, equestrians, and nature enthusiasts throughout the year (City of Escondido 2022a). These trails provide critical recreational access while also functioning as potential fire breaks or evacuation corridors under certain conditions. There are no residential or commercial structures within the ranch boundaries. Infrastructure is limited to parks and recreation facilities, trail signage, rest areas, and the historic Daley Ranch barn complex, which supports environmental education and public programming (City of Escondido 2022a). Because there is no permanent residential or commercial development within the area, a Community Wildfire Assessment was not applicable, and Daley Ranch does not have a Community Wildfire Hazard Rating.

Values at Risk

Daley Ranch supports a wide range of rare and sensitive natural resources, including extensive stands of coastal sage scrub, oak woodland, chaparral, and riparian habitat. These biologically rich ecosystems are home to numerous rare, threatened, and endangered species and represent some of the most ecologically significant landscapes in the region (SDMMP 2019). The area provides essential habitat connectivity and supports biodiversity conservation goals identified in local and regional plans (SANDAG 2023).

In addition to its ecological value, Daley Ranch contains important cultural and recreational assets. The historic Daley Ranch house and barn, dating back to the late 1800s, are among the most prominent cultural landmarks in the City of Escondido and are used for public interpretation and environmental education (City of Escondido 2022a). Other recreational amenities at risk include shaded picnic areas, scenic viewpoints, interpretive signage, and the trail network that enables public access and enjoyment of the property.

Although there are no homes or businesses within the preserve, wildfire impacts to this infrastructure could severely limit recreational access and result in loss of cultural and ecological assets. As such, wildfire preparedness strategies should prioritize evacuation planning, fuel management along defensible edges, and the protection of critical facilities that support the long-term recreational and educational value of this conserved landscape.

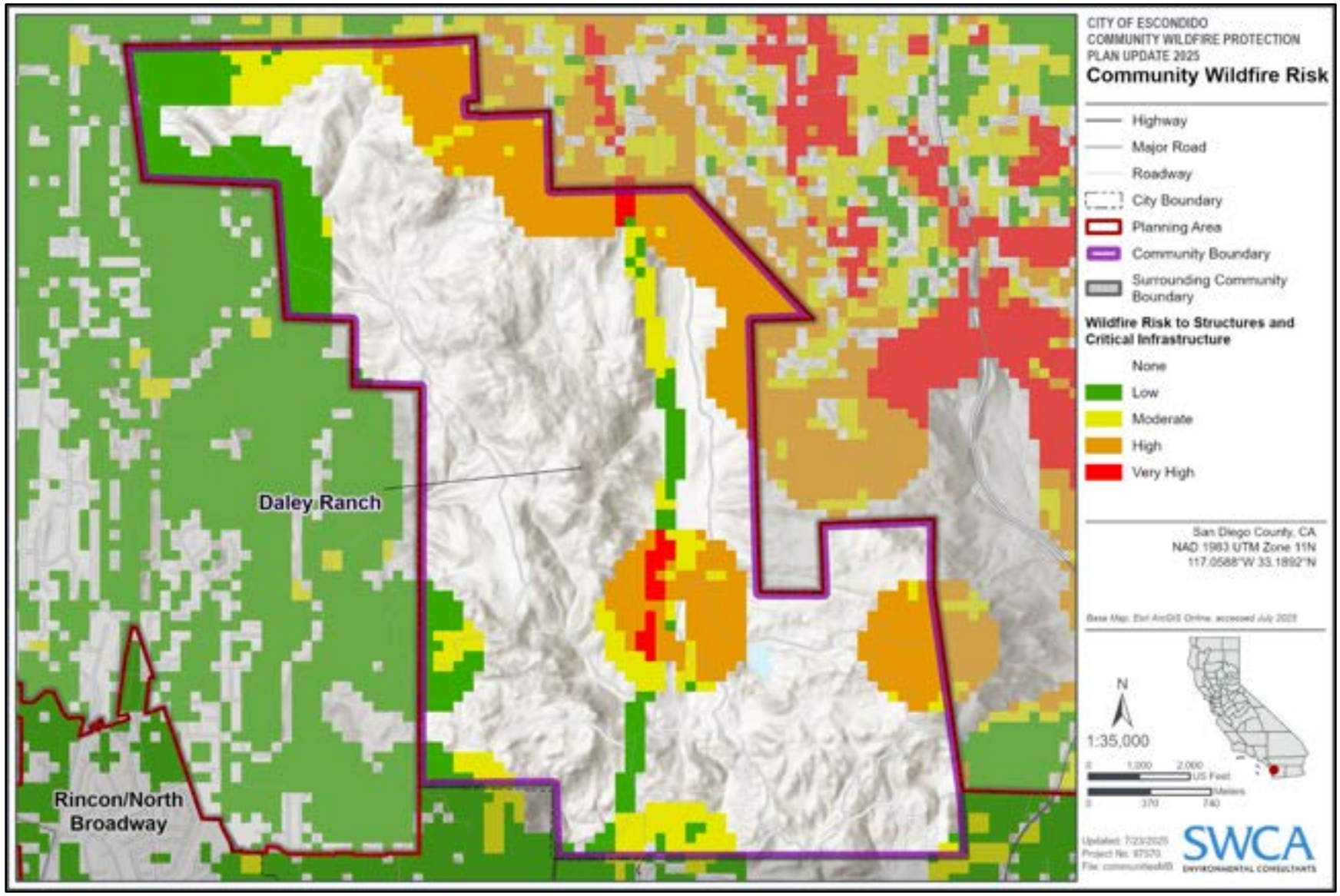

Figure C.13. Wildfire risk to structures and infrastructure around Daley Ranch.

1144 NATIONAL FIRE PROTECTION ASSOCIATION ASSESSMENT FORM (ADAPTED)

Table C.13. National Fire Protection Association Assessment Form (Modified)

SWCA – 1144 Assessment		
Community		**Notes:**
Surveyor		
Survey Date/Time		
Means of Access		
Ingress and Egress		
2 or more roads in and out score | **0**		
1 road in and out | **7**		
Road Width		
>24 ft | **0**		Oh o
>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	
Primary Predominant Vegetation	
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/noncombustible | **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 No Source = 10**				
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 aboveground | **5**				
Highly Valued Resources and Assets Observations				
Forest Health Observations				
Land Use Observations				
Misc Observations				
Total				
Hazard Rating Scale	**<43 Low**	**43 – 62 Moderate**	**62-81 High**	**>81 Extreme**

APPENDIX D: SUPPORTING MAPS

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To be completed later in project lifespan

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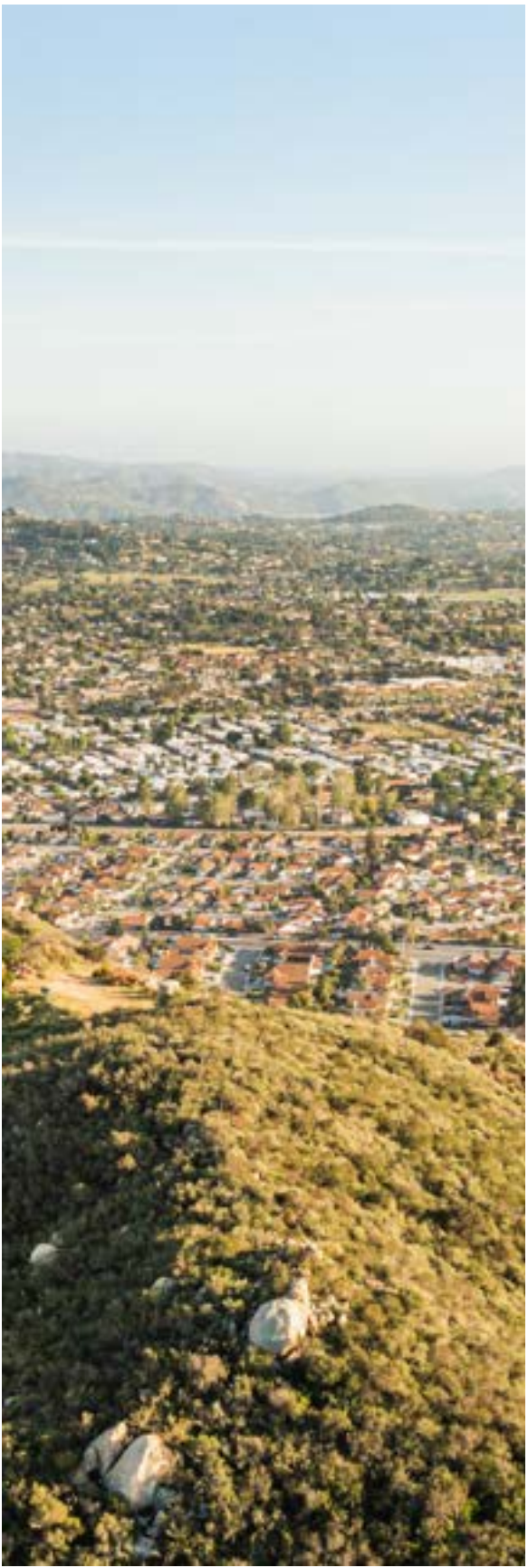
APPENDIX E: FUNDING SOURCES



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FUNDING SOURCES

The following section provides information on state, federal, and private funding opportunities for conducting wildfire mitigation projects.

Local Funding Information

- **San Diego Regional Fire Foundation**

  Website: https://sdfirefoundation.org/

  Description: In 2024, the San Diego Regional Fire Foundation awarded $250,000 in grants to 24 local Fire Safe Councils, including the Escondido Fire Safe Council, to strengthen wildfire prevention, preparedness, and community education, making neighborhoods safer and more resilient. The Foundation advances its mission by collaborating with fire agencies to identify needs and secure funding for effective wildfire mitigation.

- **San Diego County Fire Mitigation Fee Program**

  Website: https://www.sandiegocounty.gov/content/sdc/sdcfa/fire-mitigation-fee-program.html

  Description: The San Diego County Fire Mitigation Fee Program, established under the Mitigation Fee Act, collects fees from new developments to fund capital facilities and equipment for local fire agencies. The program ensures that fire protection and emergency response services keep pace with new growth by distributing these funds to participating fire districts across the county.

- **Regional Forest and Fire Capacity (RFFC) Program – San Diego County**

  Website: https://www.rcdsandiego.org/rffc

  Description The RFFC Program, launched by the California Natural Resources Agency and administered by the California Department of Conservation, provides block grants to support forest resiliency planning, project implementation, and capacity building. The Resource Conservation District of Greater San Diego County serves as the regional grantee, facilitating collaboration, workforce development, and demonstration projects to enhance wildfire and forest resilience across the county.

State Funding Information

- **CAL FIRE – Grant Programs**

  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:

  - Forest Health Grants: https://www.fire.ca.gov/what-we-do/grants/forest-health
  - California Forest Improvement Program: https://www.fire.ca.gov/what-we-do/grants/california-forest-improvement

- Wildfire Prevention Grants Program: https://www.fire.ca.gov/what-we-do/grants/wildfire-prevention-grants
- Urban and Community Forestry Grant Programs: https://www.fire.ca.gov/grants/urban-and-community-forestry-grant-programs/
- Volunteer Fire Capacity Grant: https://www.fire.ca.gov/what-we-do/fire-protection/cooperative-efforts

CAL FIRE Grants Summary Table	
Program	**Status/Updates**
CAL FIRE – Wildfire Prevention Grants	FY 2025–26 guidelines live; FRRCL priority
CAL FIRE – FRRCL Priority	Updates effective July 1, 2026
CAL FIRE – Urban & Community Forestry	Applications open Aug 1–Sept 30, 2025

- **California Air Resources Board – Funding Wizard**

  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.

- **California Department of Conservation – Regional Forest and Fire Capacity (RFFC) Grant Program**

  Website: https://www.conservation.ca.gov/dlrp/grant-programs/Pages/Regional-Forest-and-Fire-Capacity-Program.aspx

  Description: The California Department of Conservation announced the release of the 2022 RFFC Program Final Grant Guidelines. The RFFC Program provides block grants to regional entities and eligible coordinating organizations to support large- and small-scale project implementation.

- **California Environmental Protection Agency – Loans and Grants**

  Website: https://calepa.ca.gov/loansgrants/

  Description: The California Environmental Protection Agency Loans and Grants hosts a wide variety of agency 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 that are directly impacted by wildfire.

- **California State Coastal Conservancy – Wildfire Resilience Program**

  Website: https://scc.ca.gov/wildfire-resilience-program/

  Description: This program supports local partners in implementing projects that will improve forest health and reduce the risk of catastrophic wildfire in WUI areas. The Coastal Conservancy has provided over $17 million to support forest management projects that reduce wildfire risk.

- **State of California – Adaptation Clearinghouse**

  Website: https://resilientca.org/

  Description: This resource provides wildfire-related resources such as funding opportunities, assessments, case studies, educational materials, data and tools, example plans and strategies, and additional policy guidance.

- **State of California – Grants Portal**

  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.

Federal Funding Information

- **USFS – Community Wildfire Defense Grant (CWDG)**

  Website: https://www.fs.usda.gov/managing-land/fire/grants

  Description: The CWDG is a program aimed at assisting local communities and Tribes within the WUI in their planning efforts to reduce wildfire risk. The USFS intends to do this through the implementation of three goals from the National Cohesive Wildland Fire Management Strategy: restoring and maintaining landscapes, creating fire-adapted communities, and improving wildfire response within the specific at-risk community. Grant funding of no more than $250,000 will be awarded for the development and revision of CWPPs, and no more than $10 million will be awarded for the implementation of projects outlined in community wildfire protection plans that are less than 10 years old. Communities, Tribes, states, nonprofits, and Alaska Native Corporations are all considered eligible for this grant.

- **2022 Infrastructure Investments and Jobs Act**

  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.

  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 visit: https://www.congress.gov/bill/117th-congress/house-bill/3684

- **EPA – Catalog of Federal Funding Sources; Land Resources**

  Website: https://ordspub.epa.gov/ords/wfc/f?p=165:512:10535656593775:::512::

  Description: The Land Finance Clearing House is a catalog 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

- **EPA – Catalog of Federal Funding Sources; Water Resources**

  Website: https://ofmpub.epa.gov/apex/wfc/f?p=165:12:6483383318137:::12::

  Description: The Water Finance Clearing House is a catalog 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: https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/index.html

- **EPA Grant Programs**

  Website: https://www.epa.gov/grants

  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

- **FEMA Assistance to Firefighters Grants (AFG)**

  Website: https://www.fema.gov/grants/preparedness/firefighters/assistance-grants

  Description: The AFG program provides resources to assist fire departments in attaining critical resources such as training and equipment. Since its launch in 2001, the AFG program has provided firefighters and first responders with essential equipment, protective gear, emergency vehicles, training, and other vital resources to enhance public and emergency personnel safety against fire and

related hazards. In addition to the AFG grant, this program is composed of two additional distinct grant categories, as detailed below:

- ***FEMA Staffing for Adequate Fire and Emergency Response (SAFER)***

  Website: https://www.fema.gov/grants/preparedness/firefighters/safer

  Description: The SAFER grants are a component of FEMA's AFG program. These grants aim 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.

- ***FEMA Fire Prevention and Safety Grants (FP&S)***

  Website: https://www.fema.gov/grants/preparedness/firefighters/safety-awards

  Description: The FP&S grants are a component of FEMA's AFG program. These grants provide funding for projects aimed at enhancing the safety of both 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.

- **FEMA – Emergency Management Performance Grant (EMPG)**

  Website: https://www.fema.gov/grants/preparedness/emergency-management-performance

  Description: The EMPG program funds state, local, and territorial emergency management agencies to create a safe and resilient nation. Its main objectives are to close capability gaps identified in the latest Stakeholder Preparedness Review (SPR) and to build or sustain high-priority capabilities identified through the Threat and Hazard Identification and Risk Assessment (THIRA)/SPR process. Program priorities are agreed upon by the grant recipient and Regional Administrator, based on national, state, and regional priorities.

- **FEMA – Fire Management Assistance Grant**

  Website: https://www.fema.gov/assistance/public/fire-management-assistance

  Description: The Fire Management Assistance grant supports state, and local governments in mitigating, managing, and controlling fires on publicly or privately owned forests or grasslands that could result in a major disaster. The process begins when a state submits a request for assistance to the FEMA Regional Director during a "threat of major disaster." Decisions are made within hours, ensuring an expedited response. To be eligible for a grant, a state must demonstrate that the total eligible costs for the declared fire meet or exceed either the individual fire cost threshold for single fires or the cumulative fire cost threshold for multiple smaller fires.

- **FEMA – Flood Mitigation Assistance Grant**

  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.

- **FEMA – Hazard Mitigation Grant Program (HMGP)**

  Website: https://www.fema.gov/grants/mitigation/hazard-mitigation

  Description: The HMGP provides funding to state, local, 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.

- **FEMA – Hazard Mitigation Grant Program (HMGP) – Post Fire**

  Website: https://www.fema.gov/grants/mitigation/post-fire

  Description: The HMGP Post Fire grant program aids communities in implementing hazard mitigation measures following a wildfire. Mitigation measures may include soil stabilization, flood diversion, and reforestation.

- **FEMA Regional Catastrophic Preparedness Grants**

  Website: https://www.fema.gov/grants/preparedness/regional-catastrophic

  Description: The Regional Catastrophic Preparedness Grant program provides funding to increase collaboration and capacity regarding catastrophic incident response and preparation.

- **NRCS – Conservation Innovation Grants (CIG)**

  Website: https://www.nrcs.usda.gov/programs-initiatives/cig-conservation-innovation-grants

  Description: The Conservation Innovation Grants State Component stimulates the development and adoption of innovative conservation approaches and technologies, leveraging federal investment for environmental enhancement alongside agricultural production.

- **NRCS – Emergency Watershed Protection (EWP) Program**

  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, or conservation districts, Interested public and private landowners can apply for EWP Program recovery assistance through one of those sponsors.

  The EWP Program covers the following activities:

  - Removing debris from stream channels, road culverts, and bridges
  - Reshaping and protecting eroded streambanks

- Correcting damaged drainage facilities
- Establishing vegetative cover on critically eroded lands
- Repairing levees and structures
- Repairing conservation practices

➢ **NRCS Environmental Quality Incentives Program (EQIP)**

Website: https://www.nrcs.usda.gov/programs-initiatives/eqip-environmental-quality-incentives

Description: EQIP is a program aimed at helping 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.

➢ **NRCS and USFS Joint Chiefs' Landscape Restoration Partnership**

Website: https://www.nrcs.usda.gov/programs-initiatives/joint-chiefs-landscape-restoration-partnership

Description: The Joint Chiefs' Landscape Restoration Partnership program is a collaborative effort between the National Resources Conservation Service (NRCS) and the USFS aimed at enhancing the health and resilience of forested landscapes, encompassing National Forest System land and state, and private lands. This partnership involves working with agricultural producers, forest landowners, 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 U.S. Department of Agriculture (USDA) invested over $48.6 million in project coordinated through this program.

➢ **USDA Farm Service Agency – Emergency Conservation Program**

Website: https://www.fsa.usda.gov/programs-and-services/conservation-programs/emergency-conservation/index

Description: The Emergency Conservation Program helps farmers and ranchers repair damage to farmlands caused by natural disasters and to help put in place methods for water conservation during severe drought. The program provides ranchers and farmers with funding and assistance to repair the damaged farmland or to install methods for water conservation.

➢ **USDA Farm Service Agency – Emergency Forest Restoration Program**

Website: https://www.fsa.usda.gov/resources/disaster-assistance-program/emergency-forest-restoration

Description: The Emergency Forest Restoration Program assists owners of non-industrial private forests in restoring forest health after natural disasters by providing financial support. Administered by the local Farm Service Agency County Committee, the Emergency Forest Restoration Program covers all disasters except drought and insect infestations. Eligible activities include debris removal, site preparation, replanting, and restoration of forest infrastructure. To qualify, the land must have existing tree cover and be owned by a non-industrial private entity.

- **USDA and U.S. Department of the Interior National Fire Plan (NFP)**

  Website: http://www.forestsandrangelands.gov/

  Description: Many states are using funds from the NFP to provide funds through a cost-share program 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.

- **USFS – Federal Excess Personal Property (FEPP)**

  Website: https://www.fs.usda.gov/managing-land/fire/fepp

  Description: The FEPP program, established in 1956, facilitates the loan of USFS-owned property to State Foresters for wildland and rural firefighting. Initially, most of this property belonged to the Department of Defense. Once transferred to the USFS, it is then loaned to state cooperators to support firefighting efforts. State Foresters can further distribute this property to local departments, thereby enhancing local fire programs. The USFS and State Foresters have been actively participating in the FEPP program since its inception.

- **USFS – Landscape Scale Restoration Competitive Grant Program**

  Website: https://www.thewflc.org/landscape-scale-restoration-competitive-grant-program

  Description: The Landscape Scale Restoration Competitive Grant Program supports collaborative, science-based restoration of key forest landscapes using public and private resources. Funded by the USFS, the program addresses priority challenges in western lands, emphasizing cross-boundary collaboration and coordination with other landscape-scale projects. Projects should align with State Forest Action Plans and other restoration strategies. The Western Forestry Leadership Coalition oversees the Landscape Scale Restoration grant process in the western United States, evaluating and scoring proposals from western states and Pacific Island territories, and forwarding approved recommendations to the USFS for funding consideration.

- **USFS – Urban and Community Forestry Program**

  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.

Private Funding Information

- **California Fire Foundation Grant Programs**

  Website: https://www.cafirefoundation.org/programs/fireprevention/

  Description: The California Fire Foundation 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 California Fire Foundation directly supports high fire threat and/or under-resourced communities.

- **California Community Foundation – Wildfire Recovery Fund**

  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.

- **California Fire Safe Council – Grant Programs**

  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 Grant Programs.

- **COCO and USFS Action, Implementation, and Mitigation Program**

  Website: https://co-co.org/aim-grant/

  Description: Coalitions and Collaboratives Inc., a Colorado nonprofit, developed the Action, Implementation, and Mitigation Program to enhance fire adaptation and reduce wildfire risk nationwide. The grant funds mitigation projects, equipment, personnel enhancements, and planning 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 nonprofit 501(c)(3) status or a fiscal sponsorship from a local government or other entity with nonprofit status.

- **EPA, NRCS, USFS, and Other Agencies U.S. Endowment for Forestry and Communities**

  Website: https://www.usendowment.org/funding-opportunities/

  Description: The U.S. Endowment for Forestry and Communities collaborates with public and private sector partners to drive systemic, transformative, and sustainable change, enhancing the health and vitality of the nation's working forests and forest-reliant communities.

- **Esri Environmental Systems Research Institute, Inc. Grants**

  Website: https://www.esri.com/en-us/grant-programs

  Description: Esri offers free software, hardware, and training bundles through Esri-sponsored grants for activities like conservation, education, and sustainable development. Additionally, they share non-Esri grant opportunities in categories such as agriculture, education, environment, fire, public safety, and more.

- **Factory Mutual Fire Prevention Grant Program**

  Website: https://www.fm.com/about-us/corporate-responsibility/fm-fire-prevention-grant-program

  Description: The Factory Mutual Fire Prevention Grant Program provides financial support to fire departments, brigades, and various organizations to reduce fire risk. The grant funds a range of fire prevention, preparedness, and control efforts, including pre-incident planning, fire prevention education and training, and arson prevention and investigation. Organizations can apply for funding to support fire mitigation initiatives.

- **Firewise Communities Program**

  Website: http://www.firewise.org

  Description: Firewise Communities offer various activities to help homeowners and neighborhoods become safer from wildfires at minimal cost. Community cleanup days, awareness events, and cooperative activities can be achieved through partnerships with neighbors, local businesses, and fire departments. The type of assistance needed will depend on identity, location, and objectives. Among the various activities that individuals and neighborhoods can pursue, the following often benefit from seed funding or external support:

  - Thinning/pruning/tree removal/clearing on private property, particularly on very large, densely wooded properties
  - Retrofitting home roofing or siding to noncombustible 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 across the community or region that help residents understand wildfire risk and take meaningful action to protect their homes, neighborhoods, and shared resources such as food systems, water, languages, traditional ecological knowledge, and land. National Forest Foundation Matching Awards Program**

  Website: https://www.nationalforests.org/grant-programs/

  Description: The National Forest Foundation's Matching Awards Program provides funds for on-the-ground projects benefitting America's National Forests and Grasslands. The program pairs federal funds from the USFS with non-federal dollars raised by recipients to implement stewardship projects.

- **Patagonia Environmental Grants and Support**

  Website: https://www.patagonia.com/how-we-fund/

  Description: Patagonia supports innovative initiatives tackling the root causes of the environmental crisis, focusing on protecting the environment and affected communities. Efforts concentrate on areas connected to Patagonia's outdoor recreation network and retail stores, nationally and internationally.

- **State Farm Good Neighbor Citizenship Grants**

  Website: https://www.statefarm.com/about-us/corporate-responsibility/community-grants/good-neighbor-citizenship-grants

  Description: State Farm funds initiatives directed at:

  - Auto and roadway safety
  - Teen driver education
  - Home safety and fire prevention
  - Disaster preparedness
  - Disaster recovery

Other Funding Information

The following resources may also provide helpful information for funding opportunities:

- 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
- USDA Information Center: https://www.nal.usda.gov/main/information-centers
- U.S. Forest Service Fire Management website: https://www.fs.usda.gov/managing-land/fire
- U.S. Fire Administration: https://www.usfa.fema.gov/index.html
- Western Forestry Leadership Coalition: https://www.thewflc.org/

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APPENDIX F: PROJECT OUTREACH

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COMMUNITY OUTREACH

To ensure an inclusive and comprehensive CWPP update, the City of Escondido partnered with SWCA to design and implement a public outreach process. Outreach materials were developed to support the CWPP effort and increase public participation and visibility. The project's outreach strategy combined multiple methods, including an online community survey tailored specifically to Escondido, coordinated social media campaigns to share key messages, a draft version of the CWPP released for public review and comment, and an online public comment form.

The first in-person outreach opportunity was during Escondido's annual National Night Out on August 5, 2025. During this event, Escondido Fire and SWCA staff engaged directly with a wide cross section of residents in an informal community setting. This event introduced the public to the CWPP goals and objectives, the CWPP process, and upcoming CWPP public review milestones and promoted opportunities for residents to get involved. Two public meetings were held, with the first being a virtual town hall on September 9, 2025, followed by an in-person town hall at the City Council Chambers on September 15, 2025. The events included interactive formats that encouraged dialogue between residents, stakeholders, and City staff.

The draft CWPP was posted on the City's website for public review from August 18 through September 17, 2025. During this period, residents were encouraged to review the draft CWPP document, participate in outreach events, complete the survey, and share additional input through the public comment form. A total of 66 survey responses were received during this process, representing neighborhoods across the City and providing valuable insights into residents' concerns about wildfire hazards and risks, as well as their current levels of preparedness.

The outreach process was structured to reach a broad and diverse audience, ensuring that community voices were reflected in the CWPP update and that resident feedback directly informed the plan's priorities and recommendations.

See Table F.1 for a summary of the CWPP's public outreach components.

Table F.1 CWPP Outreach Summary

Outreach Component/Event	Description	Date Range
Online Community Survey	Tailored survey distributed to City residents to assess perceptions of wildfire risk and gather feedback on mitigation projects.	August 4–September 17, 2025
Escondido National Night Out	In-person outreach at a popular local event to connect with a broad cross section of residents and gather input for the CWPP.	August 5, 2025
Draft CWPP Public Review Period	Period during which the draft CWPP was available for community review and comment.	August 18–September 17, 2025
City Social Media Outreach	Posts to share key messages, promote engagement, and inform residents about CWPP updates and opportunities for input.	August 4–September 17, 2025
Online Public Comment Form	Platform for residents to submit feedback and comments on the draft CWPP during the public review period.	August 18–September 17, 2025

Outreach Component/Event	Description	Date Range
Public Outreach Meeting (Virtual)	Online meeting to present the CWPP, discuss recommendations, and facilitate interactive discussions.	September 9, 2025 (6:00–7:30 p.m.)
Public Outreach Meeting (In Person)	An in-person opportunity for residents to engage with the CWPP process and share feedback.	September 15, 2025 (6:00–7:30 p.m.)
Final City Council Meeting	In-person presentation to City of Escondido City Council to present the Final CWPP.	October 15, 2025

COMMUNITY SURVEY RESULTS

The following figures illustrate results from the City of Escondido CWPP Public Survey. Represented within each figure is the total number of responses for each selection. The survey was open from August 18 through September 17, 2025, and 66 responses were received.

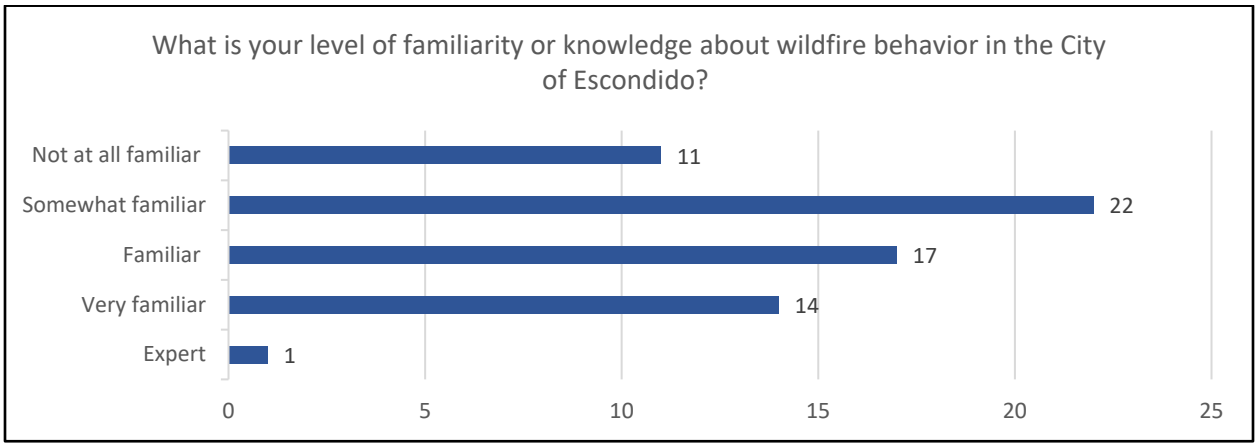

Figure F.1. Survey responses to the following prompt: "What is your level of familiarity or knowledge about wildfire behavior in the City of Escondido?"

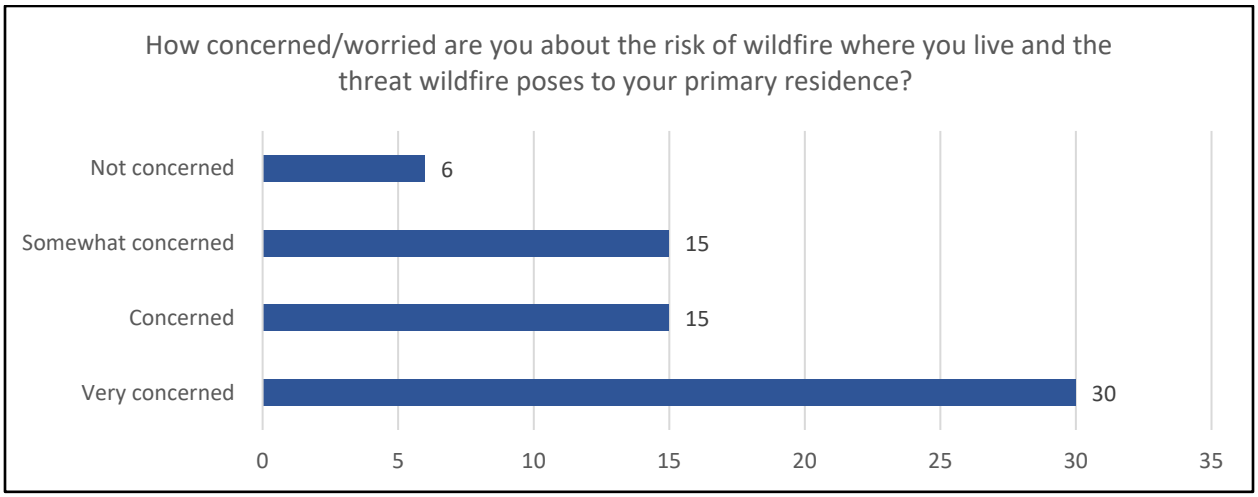

Figure F.2. Survey responses to the following prompt: "How concerned/worried are you about the risk of wildfire where you live and the threat wildfire poses to your primary residence?"

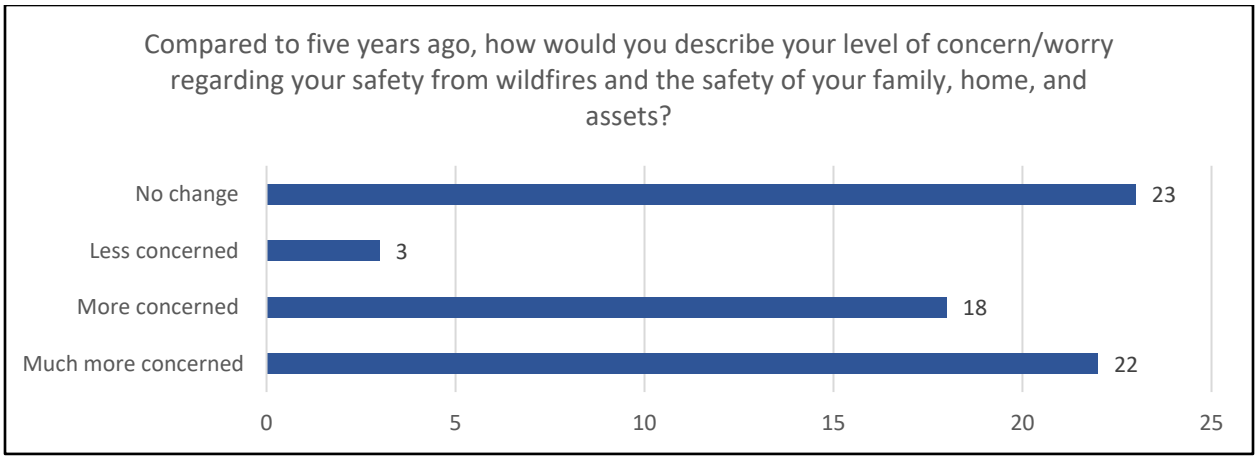

Figure F.3. Survey responses to the following prompt: "Compared to five years ago, how would you describe your level of concern/worry regarding your safety from wildfires and the safety of your family, home, and assets?"

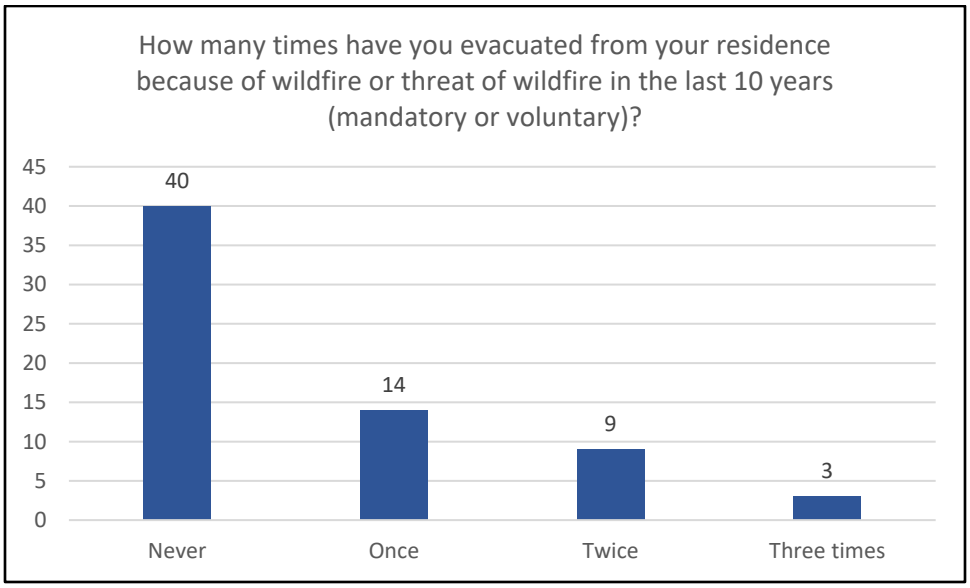

Figure F.4. Survey responses to the following prompt: "How many times have you evacuated from your residence because of wildfire or threat of wildfire in the last 10 years (mandatory or voluntary)?"

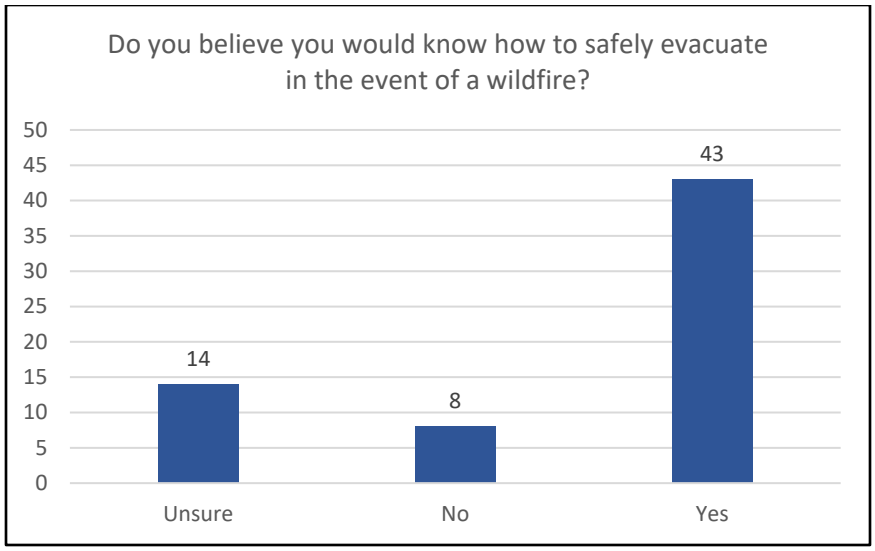

Figure F.5. Survey responses to the following prompt: "Do you believe you would know how to safely evacuate in the event of a wildfire?"

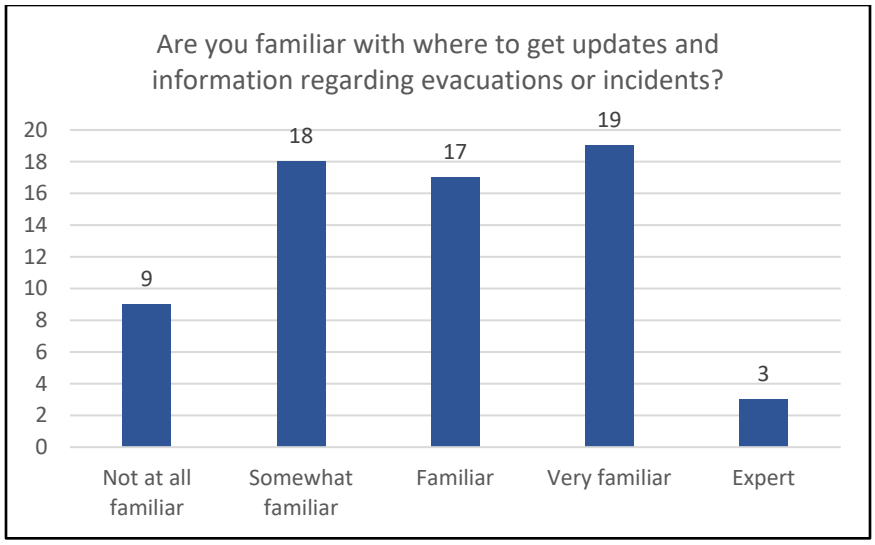

Figure F.6. Survey responses to the following prompt: "Are you familiar with where to get updates and information regarding evacuations or incidents?" The Word cloud below (larger words=more response) provides responses to: “Where do you currently get most of your updates and information regarding evacuations or incidents?” Residents were able to make multiple selections; “Watch Duty” was selected by 48% of respondents.

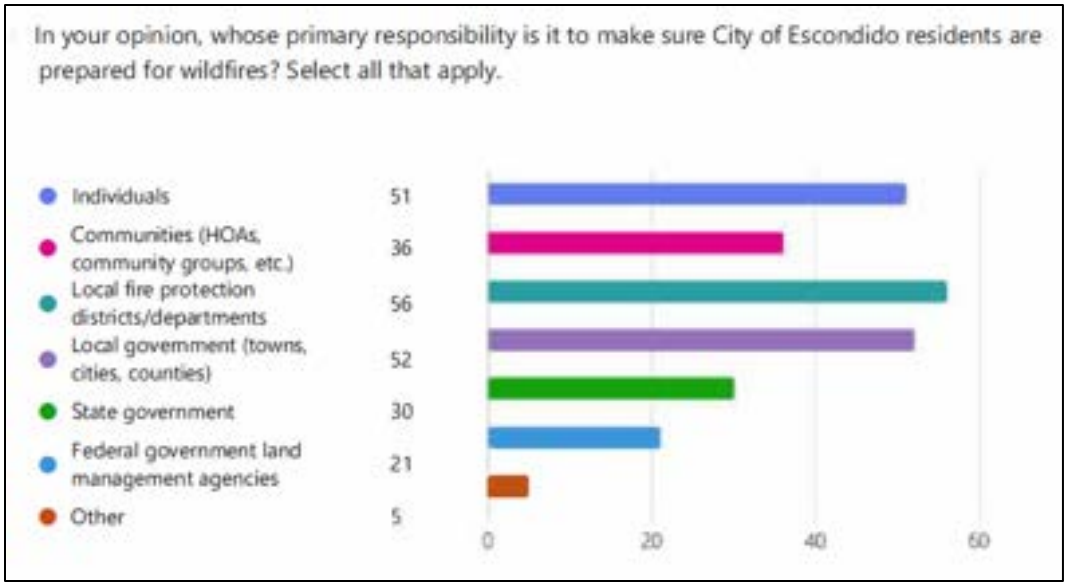

Figure F.7. Survey responses to the following prompt: "In your opinion, whose primary responsibility is it to make sure City of Escondido residents are prepared for wildfires? (Select all that apply)". Residents were able to make multiple selections.

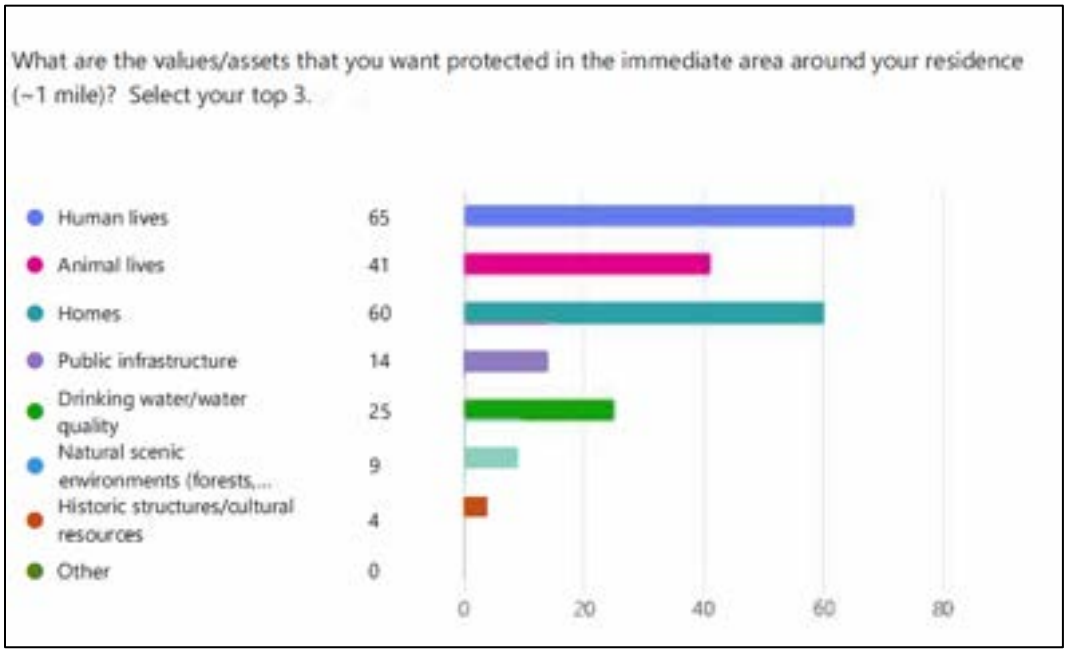

Figure F.8. Survey responses to the following prompt: "What are the values/assets that you want protected in the immediate area around your residence (~1 mile)? Select your top 3."

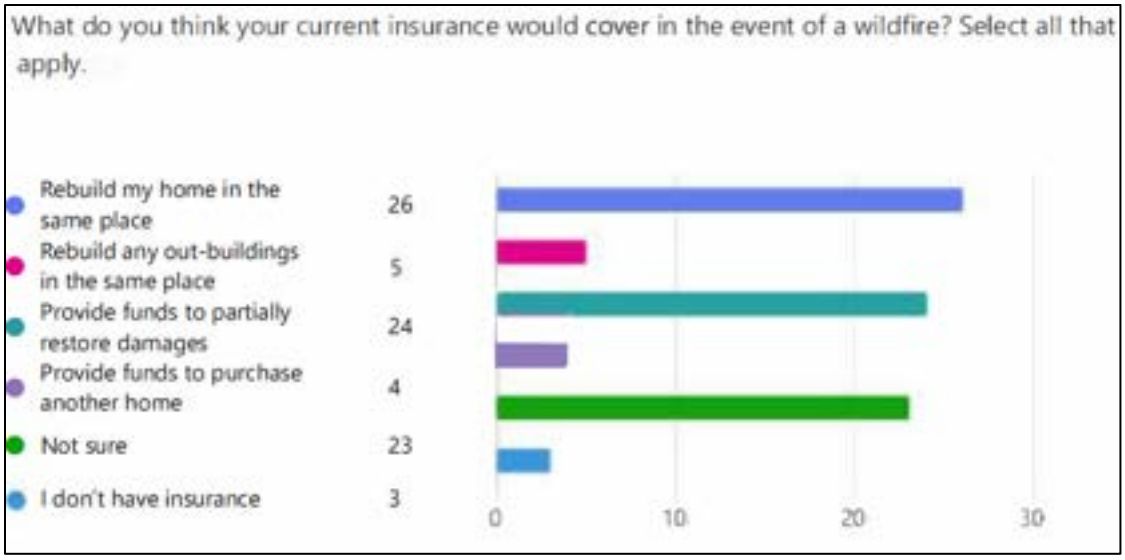

Figure F.9. Survey responses to the following prompt: "What do you think your current insurance would cover in the event of a wildfire? (Select all that apply)." Respondents were allowed to provide multiple selections.

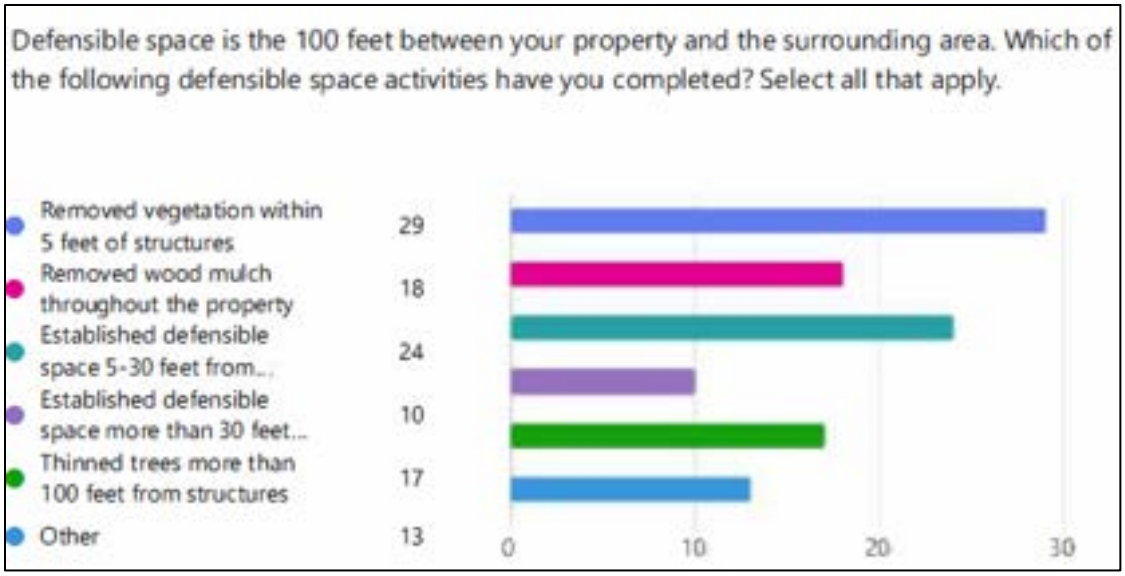

Figure F.10. Survey responses to the following prompt: "Defensible space is the 100 feet between your property and the surrounding area. Which of the following defensible space activities have you completed? (Select all that apply)." Respondents were allowed to provide multiple selections.

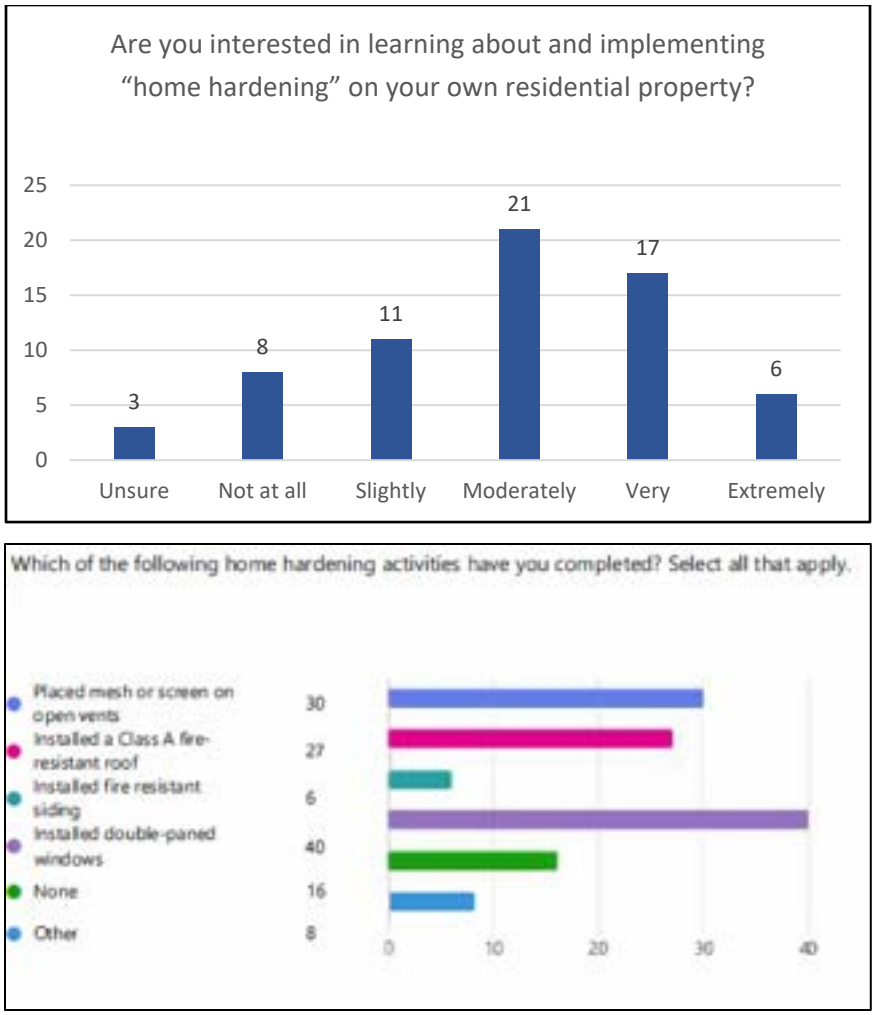

Figure F.11. Survey responses to the following prompts: "Are you interested in learning about and implementing "home hardening" on your own residential property?" and "Which of the following home hardening activities have you completed? (Select all that apply)." Respondents were allowed to provide multiple selections.

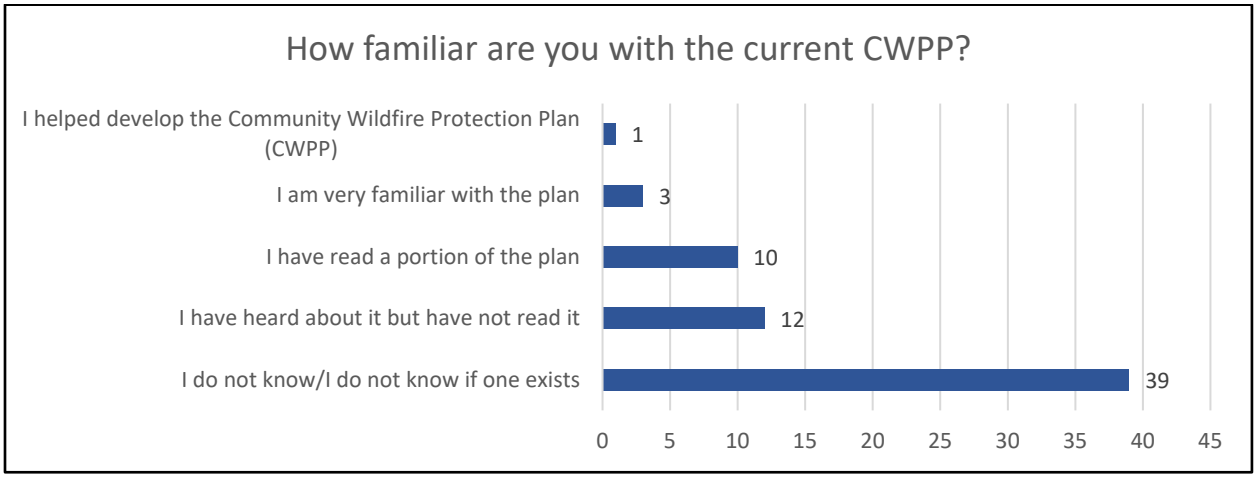

Figure F.12. Survey responses to the following prompt: "How familiar are you with the current CWPP?"

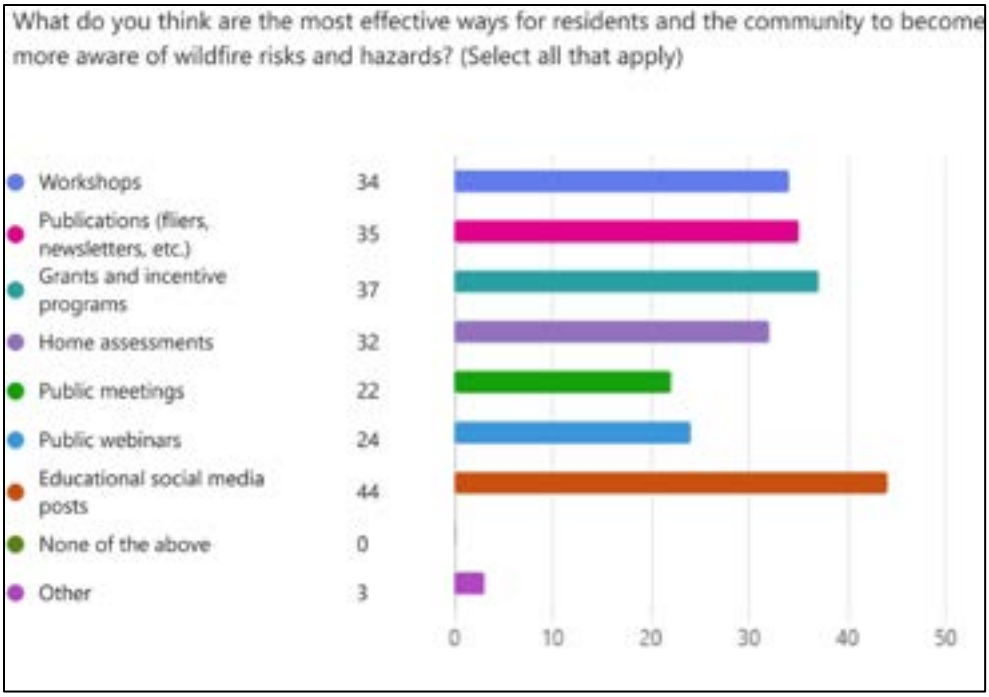

Figure F.13. Survey responses to the following prompt: "What do you think are the most effective ways for residents and the community to become more aware of wildfire risks and hazards? (Select all that apply)"

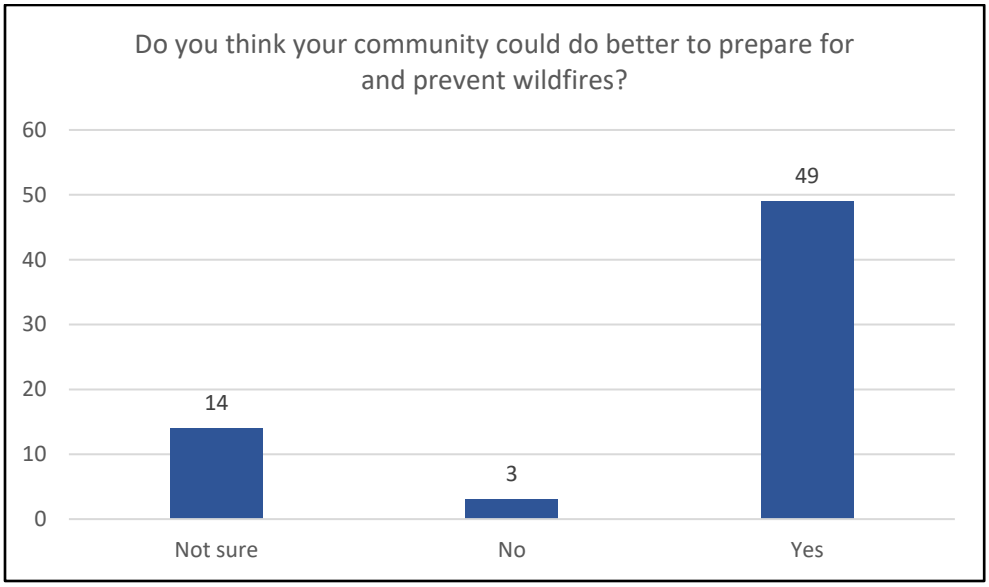

Figure F.14. Survey responses to the following prompt: "Do you think your community could do better to prepare for and prevent wildfires?"

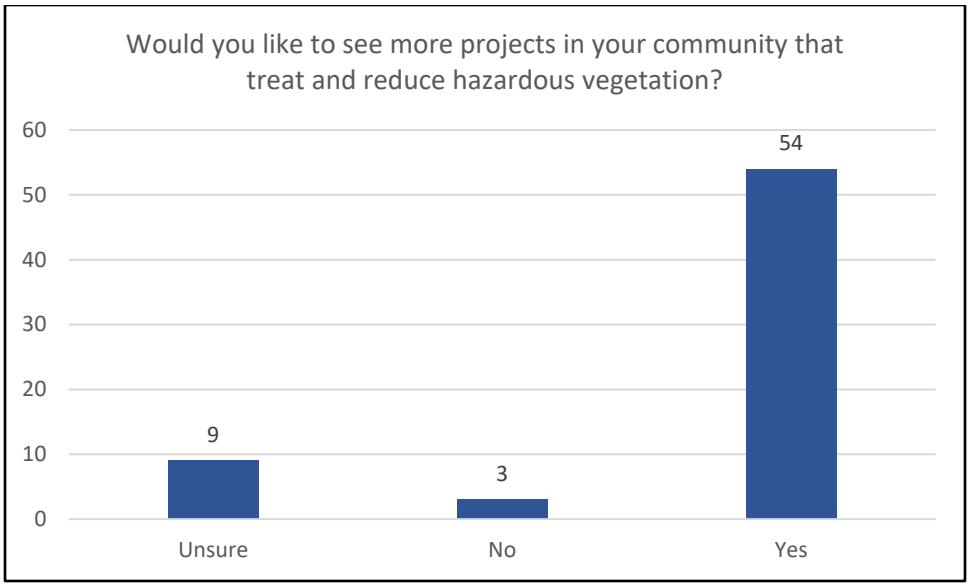

Figure F.15. Survey responses to the following prompt: "Would you like to see more projects in your community that treat and reduce hazardous vegetation?"

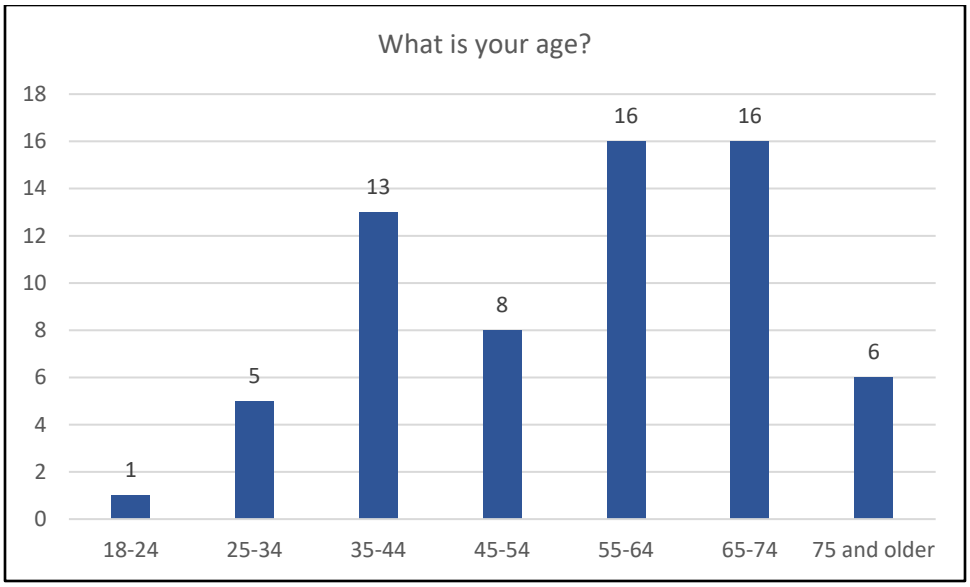

Figure F.16. Survey responses to the following prompt: "What is your age?"

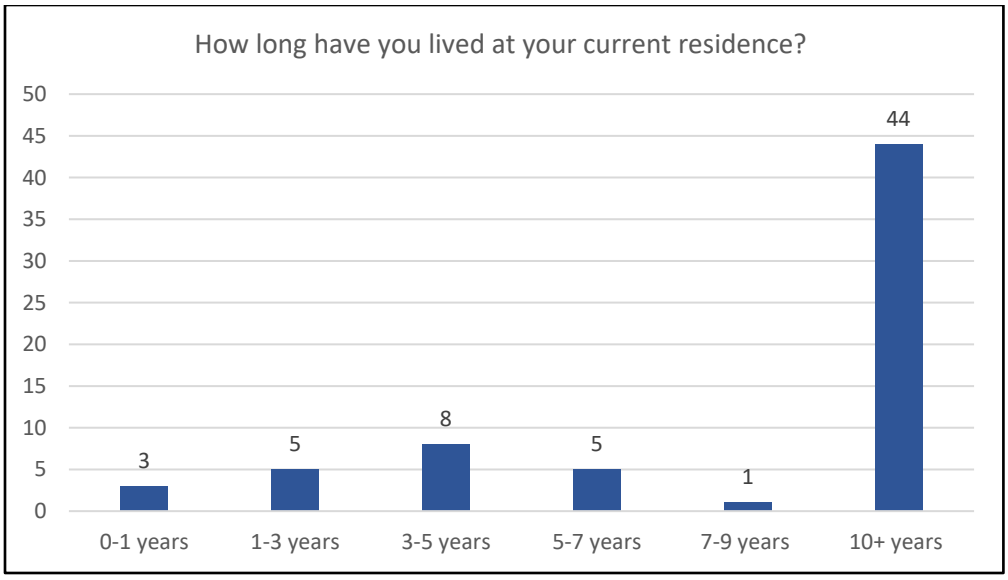

Figure F.17. Survey responses to the following prompt: "How long have you lived at this residence?"

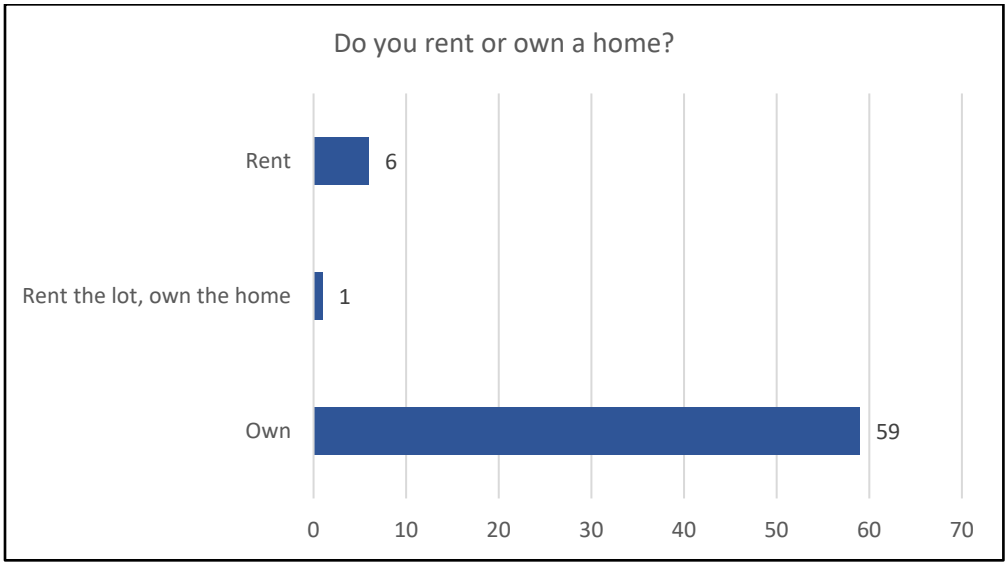

Figure F.18. Survey responses to the following prompt: "Do you rent or own a home?"

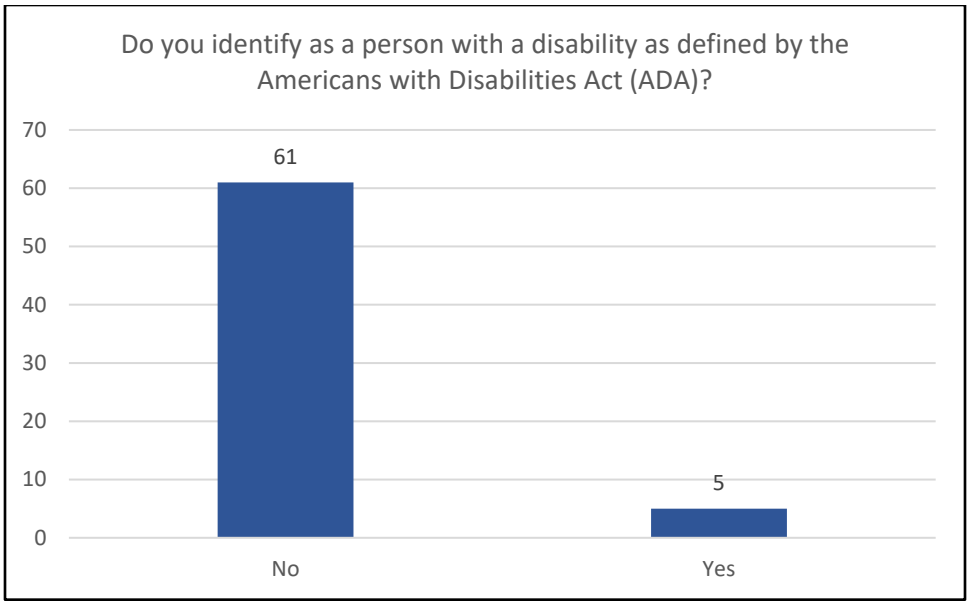

Figure F.19. Survey responses to the following prompt: "Do you identify as a person with a disability as defined by the Americans with Disabilities Act (ADA)?"

APPENDIX G: PRE-FIRE FUEL TREATMENT TYPES AND METHODS

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PRE-FIRE FUEL TREATMENT SCALES

This appendix provides an overview of common fuel treatment types and vegetation management methods used to reduce wildfire risk in the wildland-urban interface (WUI), open space areas, and along key access routes. These treatments are designed to modify vegetation structure and reduce fuel continuity, thereby lowering flame lengths, slowing fire spread, and improving firefighter access and defensibility.

The descriptions included in this appendix outline treatment objectives, implementation techniques, and considerations for selecting appropriate methods based on site conditions, land use, and desired outcomes. These tools can be applied independently or in combination as part of a comprehensive fuel reduction strategy.

This resource supports the planning and implementation of fuel mitigation projects described in Chapter 1 and serves as a reference for agencies, landowners, and contractors working in fire-prone areas.

Fuel Breaks and Open Space Cleanup

A major priority for fuel treatments should be where the community meets wildland areas, often referred to as the WUI. These areas may include the outer edges of a town, neighborhoods bordering natural open space, or occluded green spaces such as parks, canyons, or undeveloped easements within a community.

One common mitigation strategy in these areas is the creation of fuel breaks, strips of land where live and dead vegetation (such as trees, brush, leaf litter, and downed woody debris) has been strategically reduced or rearranged to slow the spread and intensity of wildfire. Shaded fuel breaks, which preserve the canopy while thinning the understory, are particularly valuable in reducing flame lengths and ember production without converting native plant communities into denuded zones. These should not be confused with firebreaks, which are typically constructed during fire suppression and involve complete removal of vegetation down to bare mineral soil.

Fuel breaks serve several purposes:

- They offer tactical opportunities for fire suppression resources.
- They improve visibility and safety along roadways and ridgelines.
- They enhance the effectiveness of evacuation routes.
- They may also serve as anchor points for prescribed fire or defensible space expansion.

Legal and Ecological Considerations

In May 2025, the California Court of Appeal ruled in favor of the California Chaparral Institute and the Endangered Habitats League in a lawsuit challenging the Programmatic Environmental Impact Report (PEIR) for the California Vegetation Treatment Program (CalVTP). The court found that the PEIR, which served as the environmental foundation for thousands of acres of annual fuel treatments across the state, failed to adequately assess potential ecological impacts, particularly the risk of type conversion, loss of native shrublands, and harm to sensitive species.

The court concluded that CAL FIRE's analysis lacked sufficient site-specific detail and did not fully consider the long-term consequences of mechanical clearing and prescribed burning in ecologically sensitive habitats such as chaparral and coastal sage scrub. This ruling marked a significant shift in how statewide fuel management programs will need to be evaluated and justified under the California Environmental Quality Act (CEQA).

As a result of this decision:

- The Board of Forestry and CAL FIRE must now revise the PEIR to comply with the court's findings.
- Until the revised PEIR is certified, fuel treatments relying on the existing CalVTP framework may be delayed, limited, or require project-level CEQA analysis, especially in sensitive habitats.
- Agencies and landowners must exercise greater caution when planning fuel breaks in native shrublands and incorporate best available science and ecological risk assessments into treatment designs.
- This ruling reinforces the need to balance wildfire mitigation with long-term ecological resilience, avoiding unnecessary habitat conversion while reducing fuel continuity and fire intensity.

Moving forward, communities are encouraged to prioritize strategically located, ecologically informed fuel treatments, especially near WUI edges. Shaded fuel breaks, when designed with sensitivity to slope, species composition, and erosion potential, remain a useful tool, but should not be over-applied if possible.

Larger-Scale Treatments

Farther from WUI neighborhoods, fuel treatments often serve broader goals beyond immediate structure protection. While reducing hazardous fuel loads remains a central priority, additional objectives typically include improving forest and shrubland health, enhancing climate resilience, supporting post-fire recovery, and reducing the likelihood of catastrophic, stand-replacing fire.

These broader efforts are especially important in wildfire-adapted ecosystems such as Southern California's oak woodlands, coniferous forests, and chaparral-covered foothills. Treatments may involve prescribed fire, mechanical thinning, or ecological restoration, depending on vegetation type, slope, access, and land management goals.

Because wildfires frequently burn across jurisdictional boundaries, large-scale mitigation projects require careful coordination at the landscape level. To be effective, these efforts must align across federal, state, and local agencies, as well as private landowners and conservancies. This type of coordination is already occurring in and around the Escondido area, including:

- CAL FIRE's San Diego Unit has prioritized strategic fuels management along ridgelines and near wildland corridors through the San Diego Unit Strategic Fire Plan and the SRA Fire Prevention Fund projects.
- The Escondido Creek Conservancy and its partners have implemented habitat restoration and fuel reduction efforts in the Elfin Forest–Harmony Grove and Lake Wohlford areas to reduce fire risk while protecting sensitive habitat.

- San Dieguito River Park Joint Powers Authority and County of San Diego Department of Parks and Recreation are actively managing lands in the Coastal and Inland Backcountry Preserves, thinning along access roads and installing shaded fuel breaks that also improve firefighter ingress and egress. (JPA 2025)
- The Cleveland National Forest (USFS) continues to implement the Forest Health and Fuels Management Program, coordinating prescribed burns and large-scale thinning projects to reduce fire severity and promote ecosystem restoration across the region's high-risk zones.
- The San Diego Regional Fire Foundation, and Fire Safe Councils also contribute to the regional network of fire-adapted community planning and project implementation.

These types of coordinated efforts reflect a growing recognition that wildfire mitigation must be approached holistically, with shared objectives, complementary treatments, and sustained partnerships. Continued investment in cross-jurisdictional planning, data sharing, and funding alignment, such as through CAL FIRE's Fire Prevention Grants, will remain essential as climate-driven fire seasons grow longer and more severe.

FUEL TREATMENT METHODS

Since specifics of the treatments are not provided in detail in Table G.1, 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 G.1). 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

Table G.1. 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.

Treatment	Comments
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.
Grazing (goats)	Can be cost effective. Ecologically beneficial. Can be applied on steep slopes and shrubby and flashy fuels. Requires close management. Cannot be used on Conserved lands

It is imperative that long-term monitoring and maintenance of all treatments is implemented. Post-treatment rehabilitation such as restoration with native plants and erosion control may be necessary. In addition, post-treatment fuel cleanup is a must as neglected piles of vegetation may result in increased fire risk.

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, and whole tree felling. These methods are typically used where rapid treatment is needed or where prescribed fire is not feasible. Compared to manual labor, mechanized treatments can offer greater precision, efficiency, and cost-effectiveness, especially in moderate-to-accessible terrain.

- Mowing, using ATV- or tractor-mounted mower decks, is commonly used to manage grass fuels along roadsides, fence lines, and the edges of structures.
- Mastication involves using drum or blade heads to grind shrubs, small trees, and slash into mulch. This method is especially useful in brush-dominated fuel types or areas with a mixture of fine and medium-sized fuels. While mastication does not reduce the total fuel load, it rearranges the material into a more compact, less volatile configuration that slows flame spread and reduces spotting potential.
- Whole tree removal with feller bunchers or shears is used in areas with overstory trees or dense stands of invasive species. These trees are typically cut, hauled off-site, or processed in place using mastication, chipping, or pile burning.

In existing fuel break areas, routine maintenance is essential, especially in places where shrubs or invasive trees are beginning to encroach on previously cleared zones. In higher-risk areas, more intensive thinning may be needed to maintain effectiveness. Shrubs should be removed entirely, and overstory trees should be pruned from the ground up to 4 to 8 feet, depending on surface fuel height. Tree spacing should generally be two to three times the height of the trees to prevent crown fire development.

Innovative Techniques for Sensitive or Inaccessible Areas

In San Diego County, new techniques are being deployed to manage invasive species in rugged, sensitive, or otherwise inaccessible terrain where traditional mechanized treatments are not viable due to steep slopes, biological constraints, or permitting limitations.

One such innovation is the use of helicopter-based vegetation removal to target and extract invasive palm trees and eucalyptus from canyon bottoms, riparian corridors, and other restricted access areas. This method is particularly effective where:

- Use of ground-based equipment would cause excessive soil disturbance or violate permit conditions under CEQA, the Clean Water Act, or sensitive species protections;
- Manual removal would be cost-prohibitive or physically unsafe for crews;
- Invasive species pose a high wildfire risk due to their flammability, height, and ember-producing characteristics.

In these operations, helicopter crews fell or sever trees using aerial saws or ground-based crews, and then airlift the material out of the canyon for off-site processing. This minimizes on-site disturbance while removing ladder fuels and volatile biomass that contribute to high-intensity fire behavior in riparian or steep terrain.

These aerial vegetation management efforts are typically coordinated with local fire agencies, environmental regulators, and land managers, and are often funded through grant programs such as CAL FIRE's Fire Prevention Grants or regional hazard mitigation partnerships.

Targeted Grazing

Reducing both horizontal and vertical fuel continuity is a critical objective of wildfire prevention and vegetation management. Fuel modifications should focus on treating surface fuels and creating low-density, vertically disconnected stands to slow fire spread and reduce flame lengths. These goals can be achieved through various manual, mechanical, or biological methods, depending on site conditions and environmental constraints.

One method gaining popularity in fire-prone landscapes is goat grazing, which provides an effective, nontoxic, nonpolluting, and nearly carbon-neutral alternative to mechanized treatments. A typical goat grazing system involves a high density of goats enclosed by portable electrified fencing and supervised by trained herders. Goats feed on a wide range of herbaceous vegetation and woody plants, and have been shown to reduce fuel loads across large areas (Lovreglio et al. 2014). Grazing can be particularly useful in grasslands, oak savannas, and chaparral habitats where native biodiversity is already low or heavily impacted by invasive species.

However, goat grazing is not appropriate in riparian areas or other sensitive habitats due to a range of ecological risks:

Limitations of Goat Grazing in Sensitive Habitats and Riparian Areas

Indiscriminate Feeding
Goats are generalist feeders and consume a wide variety of plant species, including native shrubs, seedlings, and groundcovers that are critical for stabilizing streambanks and supporting habitat diversity. Unlike selective mechanical or manual treatment methods, grazing can inadvertently reduce biodiversity and compromise native plant regeneration.

Impacts on Sensitive Species
Riparian areas often support threatened or endangered plants and wildlife. Goats can trample nesting and breeding sites, disturb amphibian habitats, and consume keystone species such as willows, mule fat, and cottonwoods that support riparian-dependent species.

Vegetation Type Conversion
Excessive grazing pressure can cause native vegetation loss, leading to type conversion where disturbed areas are colonized by invasive grasses or forbs. These invaders often carry higher fire risk than the native species they replace, undermining the treatment's original goal.

Erosion and Soil Disturbance
Goat hooves break down root structures and compact soil, especially in loose, erosion-prone riparian soils. This disturbance can increase runoff and sedimentation into creeks and wetlands, degrading aquatic ecosystems.

Water Quality Degradation
Goat waste can introduce nutrients, bacteria, and pathogens into adjacent waterways, especially in areas without proper setback or containment. This threatens sensitive aquatic species and violates water quality protection standards.

Lack of Precision in Fuel Targeting
Goats do not selectively remove ladder fuels such as dead branches, leaf litter, or overhanging limbs. While they are efficient at clearing ground-level vegetation, they may leave behind the woody debris that contributes most to crown fire potential in riparian systems.

Fencing and Habitat Fragmentation
Effective containment of goats requires extensive fencing, which can obstruct wildlife corridors, limit animal movement, and fragment habitat. Intensive management is also required to prevent overgrazing and minimize impacts on high-value plant communities.

Best Use of Grazing Treatments

Goat grazing can be a strategic tool when applied in the right vegetation types in areas such as:

- Coastal sage scrub
- Annual grasslands and weedy fields
- Lightly stocked oak woodlands
- Roadside rights-of-way and fuel break maintenance zones

In these settings, grazing may offer a cost-effective way to reduce fine fuels and suppress invasive species regrowth when used under a well-managed, rotational system.

Ultimately, grazing should only be implemented after thorough ecological review and consultation with land managers and regulatory agencies. It must be tailored to site-specific vegetation, slope, and habitat sensitivity, with clear goals and measurable outcomes.

Agricultural Pile Burning in Escondido

Agricultural landowners in Escondido are allowed to burn clean vegetative waste under specific conditions. A valid burn permit is required, typically issued by CAL FIRE's San Diego Unit through their online portal. Burning is only permitted on designated permissive burn days, which are determined daily by the San Diego Air Pollution Control District (SDAPCD) to ensure favorable smoke dispersion conditions. Even on a permissive day, local fire agencies may restrict burning due to high fire danger or red flag warnings.

Only agricultural vegetative material such as prunings, brush, or orchard trimmings may be burned. Burning of trash, construction debris, or non-organic material is prohibited. Burn piles must follow size and clearance requirements, typically not exceeding 4 feet by 4 feet unless specifically approved. All burns must maintain a minimum 10-foot clearance from flammable vegetation, and the landowner must keep water and hand tools on-site to control the fire until it is completely extinguished.

Before igniting any pile, landowners must notify and receive approval from their local fire agency or the regional CAL FIRE office. SDAPCD may suspend or deny burn activity if smoke impacts are reported, particularly in areas with sensitive receptors. Burning is not allowed on No-Burn Days or during fire weather alerts, even with a valid permit (Table G.2)

Table G.2. Approval Matrix

Requirement	Details
Permit Required	CAL FIRE General Burn Permit (LE-5)
Allowed Materials	Clean agricultural vegetative waste only
Burn Days	Only on SDAPCD-designated permissive burn days
Fire Department Approval	Must notify and get clearance from local fire authority
Pile Size	Typically limited to 4 × 4 feet unless otherwise approved
Clearance Requirements	Minimum 10 feet from combustible vegetation
Tools and Safety	Water and hand tools required on-site until fire is out
Prohibited	No trash, plastic, lumber, or non-vegetative material burning

Management of Invasive Nonnative Plants

Effective fuel management in Escondido must include strategies to control and reduce invasive plant species that contribute to fire hazard and habitat degradation. Invasive species often colonize disturbed areas, outcompete native vegetation, and create continuous, highly flammable fuel beds that increase the likelihood of ignition and rapid fire spread.

Managing High-Risk Trees: Fan Palms and Eucalyptus

Two of the most problematic invasive trees in Escondido are fan palms (*Washingtonia* spp.) and eucalyptus (*Eucalyptus* spp.). Both are widely present in urban and WUI settings and have been involved in several destructive fires throughout San Diego County.

- Fan palms require active management to remove dead fronds that accumulate along the trunk. These fronds act as ladder fuels and can easily ignite, sending embers into surrounding vegetation or rooftops. Dead skirt removal, tree thinning, or full removal may be necessary near homes or evacuation routes.
- Eucalyptus management should focus on selective thinning, removal of peeling bark and downed limbs, and gradual replacement with native or fire-resistant species. These trees produce volatile oils and shed debris that increases surface fuel loads and spotting distance. In areas where eucalyptus dominate the canopy, long-term planning may include phased removal and native restoration.

In steep or environmentally sensitive terrain, helicopter-assisted removal of large palms and eucalyptus has been used successfully in San Diego County to reduce fire risk while minimizing soil disturbance and avoiding impacts to sensitive species or waterways.

Controlling Widespread Invasives

Other invasive species common in the Escondido area include:

- Giant reed (*Arundo donax*)
- Fennel (*Foeniculum vulgare*)

- Castor bean (*Ricinus communis*)
- Nonnative grasses such as brome and fescue

These species are often found along roadsides, canyons, riparian corridors, and fuel breaks. Management strategies should include:

- Manual or mechanical removal prior to seed set
- Targeted herbicide application where appropriate and permitted
- Follow-up treatments to prevent regrowth
- Restoration with native species to stabilize soils and reduce reinfestation

Project areas should be monitored regularly after treatment, especially during the first two to three growing seasons when reinvasion is most likely.

Resources for Invasive Species Management

- Cal-IPC Plant Profiles and Management Tools
  https://www.cal-ipc.org/plants/profiles/
- CDFA Noxious Weed List
  https://www.cdfa.ca.gov/plant/ipc/encycloweedia/pdf/CaliforniaNoxiousWeeds.pdf

Land managers and property owners are encouraged to coordinate with the City of Escondido, San Diego County Parks and Fire Authority, and Fire Safe Councils to ensure invasive species control is integrated into broader fuel treatment and wildfire resilience strategies.

Grant Funding and Planning Support

Fuel reduction projects that incorporate invasive species control can often qualify for grant funding. Agencies such as CAL FIRE, the Wildlife Conservation Board, and regional conservation organizations provide financial assistance for vegetation management, habitat restoration, and fire risk reduction. Grant applications are more competitive when they include ecological goals alongside fire safety objectives.

PERMITTING AND ENVIRONMENTAL REVIEW REQUIREMENTS

Before beginning any fuel treatment or invasive species removal project in the City of Escondido, it is essential to evaluate permitting needs, environmental constraints, and applicable regulatory pathways. Vegetation management activities, particularly those in or near sensitive habitats, often require review under local, state, and federal regulations.

Common Triggers for Environmental Review

Environmental permits or CEQA documentation may be required if a project involves:

- Work in or adjacent to riparian corridors, streams, wetlands, or other jurisdictional waters

- Ground disturbance or removal of native vegetation in areas supporting sensitive species or cultural resources
- Use of herbicides, mechanized equipment, or helicopters in natural or open space areas
- Activities on public land, within conservation easements, or on land with deed restrictions
- Grading or fuel work on steep or erosion-prone slopes
- Fuel modification or defensible space work within Very High Fire Hazard Severity Zones (VHFHSZ)

Even limited activities such as hand removal of palms or eucalyptus may require biological surveys or permits if conducted in mapped sensitive habitat areas, including coastal sage scrub, oak woodland, or riparian forest.

Regulatory Agencies and Typical Permits

- To minimize disturbance and protect natural resources.
- Consider preparing a Mitigated Negative Declaration (MND) or other CEQA documentation if the project is led by a public agency or uses public funds.

Partnering with experienced consultants or regional agencies can help streamline compliance and ensure projects are implemented legally and responsibly. The following agencies may require permits, notifications, or consultation depending on project scope and location:

- **California Department of Fish and Wildlife (CDFW)**
  - Lake and Streambed Alteration Agreement (LSAA)
  - Incidental Take Permits for state-listed species
- **Regional Water Quality Control Board (RWQCB)**
  - 401 Water Quality Certification for impacts to jurisdictional waters
  - Waste Discharge Requirements for soil disturbance or herbicide use
- **U.S. Army Corps of Engineers (USACE)**
  - Section 404 Permits under the Clean Water Act for impacts to Waters of the U.S.
- **U.S. Fish and Wildlife Service (USFWS)**
  - Section 7 or Section 10 consultations under the Endangered Species Act
- **City of Escondido, County of San Diego, or other local jurisdictions**
  - Grading permits, Habitat Loss Permits, and compliance with brush management ordinances
- **California Coastal Commission** (for projects near the Coastal Zone, if applicable)
  - Use of the California Vegetation Treatment Program (CalVTP)

The California Vegetation Treatment Program (CalVTP), administered by CAL FIRE, provides a streamlined CEQA review process for qualifying fuel reduction and vegetation treatment projects. The program is based on a certified Programmatic Environmental Impact Report (PEIR) and supports projects that aim to reduce wildfire risk through prescribed fire, mechanical thinning, manual treatment, herbicide use, and grazing.

CalVTP can be used in Escondido if the project:

- Is located within or adjacent to State Responsibility Area or qualifying Local Responsibility Area
- Aligns with CalVTP treatment types and objectives
- Is implemented by a public agency willing to serve as the CEQA lead
- Completes a Project Specific Analysis (PSA) tiered from the CalVTP PEIR

Benefits of using the CalVTP include a reduced CEQA timeline, pre-established mitigation measures, and a framework that supports landscape-scale fuel reduction and restoration goals. CalVTP must now thoroughly assess potential type conversion impacts on chaparral and sage scrub and explain how increased flammability will be mitigated or avoided.

It is important to note that the CalVTP streamlines CEQA review but does not replace the need for agency permits. Separate approvals from CDFW, RWQCB, USACE, and other agencies may still be required.

Early Planning and Coordination

To ensure regulatory compliance and avoid project delays:

- Coordinate with permitting agencies and local planners early in the process
- Conduct baseline biological and cultural resource assessments to identify constraints
- Review applicable Habitat Conservation Plans, MSCP subarea plans, or NCCPs
- Apply best management practices (BMPs) to minimize erosion, protect sensitive species, and avoid sedimentation of waterways
- Determine CEQA applicability early and pursue a CalVTP PSA or other appropriate pathway if the project uses public funding or requires discretionary approval
- Consider working with experienced environmental consultants and fire planning specialists to support efficient project delivery and permitting success

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APPENDIX H: POST-FIRE RESPONSE AND RESTORATION

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POST-FIRE HAZARDS AND RESPONSE

Effective fire response and restoration are essential for protecting life, property, and natural resources during and after a wildfire. This section outlines key considerations for both the immediate response phase and the longer-term recovery process, with a focus on actions that stabilize burned landscapes, restore ecological function, and reduce future fire risk.

Large and high-severity wildfires can strip Southern California's Mediterranean landscapes of vegetation, exposing soils to accelerated erosion, increasing runoff, and amplifying the risk of post-fire debris flows and flooding. (CDWR 2025) In Escondido and surrounding areas of San Diego County, these cascading hazards often occur during the first winter following a major wildfire, especially when intense rainfall from atmospheric rivers or tropical storm remnants arrives before the burned landscape has had time to stabilize.

Topics covered include interagency coordination, emergency stabilization measures, erosion control strategies, and habitat recovery techniques. By planning and implementing these efforts strategically, communities can improve their resilience, support ecosystem recovery, and reduce the likelihood of long-term damage following wildfire events.

Post-Fire Debris Flows and Flooding Hazards

The steep terrain surrounding Escondido, including areas near San Pasqual Valley, Daley Ranch, Lake Wohlford, and the hills to the north and east, contains a mix of decomposed granite and poorly consolidated soils that are highly susceptible to erosion after wildfire. When combined with high-intensity rainfall events, these post-fire conditions can lead to debris flows capable of damaging homes, roads, and critical infrastructure.

Wildfires increase the risk of flash floods and landslides because burned soil becomes hydrophobic and loses its ability to absorb rainfall. Contributing factors include steep slopes, heavy rainfall, loose or weathered soils, lack of canopy and ground cover, and poor construction or grading practices. Even light rainfall can trigger debris flows that carry sediment, damage property, and block access routes.

San Diego County has experienced these impacts before. After the 2003 Cedar Fire and 2007 Witch Creek Fire, multiple communities reported slope failures, sediment-laden runoff, and localized flooding that caused property damage and transportation disruptions. The 2018 Holy Fire in Riverside County resulted in deadly debris flows following a flash flood. As the region continues to experience warmer storms and more variable rainfall due to climate change, the frequency and severity of these events are likely to increase.

Residents should be alert for flash flood warnings and emergency updates. Stay away from storm channels, arroyos, and other waterways during and after rainfall. Develop an evacuation plan with your family and prepare a household inventory with copies of critical documents. Be aware of your local risk, pay attention to weather forecasts, and follow guidance from local emergency officials and weather authorities (California Department of Conservation 2019; California Department of Water Resources 2021).

Community Response

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. (CAL FIRE 2019)

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

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 2025h; 2025l).

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 2025f):

- 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.

Mobilizing Your Community

Major wildfires that affect Escondido and surrounding areas require a coordinated, community-scale response during recovery. While the City's Emergency Manager and Fire Department work with state and

federal partners to address urgent needs, local mobilization is essential for long-term recovery and hazard mitigation.

Unlike wildfire suppression, post-fire recovery is not managed under a single command structure. Each agency or level of government responds under its own authority. This creates a need for strong local coordination, consistent communication, and clearly defined leadership roles. The City of Escondido's emergency management staff and local planning officials can help guide recovery efforts by establishing communication channels, task assignments, and points of contact for residents and partner agencies.

Local Leadership and Volunteer Coordination

Residents are encouraged to participate in or form Fire Safe Councils to support wildfire preparedness and recovery. These grassroots organizations engage communities in defensible space projects, educational outreach, and grant-funded fire mitigation work. Escondido is served by the Greater San Diego County Fire Safe Council, which provides training, technical assistance, and access to CAL FIRE resources.

To support effective recovery from future fire events, communities should establish a Post-Fire Coordination Group. This group can include city and county officials, environmental consultants, utility providers, local Fire Safe Councils, and neighborhood leaders. The Post-Fire Coordination Group's core functions include coordinating agency response actions, sharing geospatial and hazard data, facilitating public communications, identifying funding sources, and supporting at-risk communities.

Appointing a Post-Fire Recovery Coordinator can further streamline efforts. This role should be filled by someone with a strong understanding of Escondido's neighborhoods, infrastructure, and environmental assets. The coordinator should have project management experience, strong communication skills, and familiarity with social media, local networks, and disaster assistance programs.

Communication

Clear and timely communication is essential for effective wildfire recovery. Once your Post-Fire Coordination Group is established and initial response actions are underway, a comprehensive communication strategy should be implemented to keep the community informed, engaged, and supported throughout all phases of recovery.

A successful communications approach includes both short-term outreach to address urgent needs and long-term strategies to maintain public awareness, share resources, and support emotional recovery.

Tools and Tactics

Communities should implement a variety of outreach methods to reach different audiences. Consider the following actions:

- Distribute printed materials such as flyers, mailers, or door hangers in affected neighborhoods.
- Use local radio, news media, and Escondido's community cable channels to broadcast updates.
- Create or update a dedicated webpage or recovery portal on the City of Escondido website with status reports, resource directories, permit information, and meeting schedules.

- Set up an email or text message alert system to share urgent updates with property owners and residents. Encourage people to sign up through 211 San Diego or AlertSanDiego.
- Establish a voicemail box or recovery hotline to allow residents to leave questions and receive call-backs from recovery staff or volunteers.
- Use social media platforms like Facebook, Instagram, and X (formerly Twitter) to share real-time updates, public meeting notices, and links to assistance programs.
- Post updates at community centers, libraries, places of worship, and local businesses to reach residents without internet access.
- Coordinate with partner organizations, neighborhood groups, and Fire Safe Councils to amplify messages through existing networks.

Best Practices for Wildfire Recovery Communication

Applying the following principles can help ensure consistent, transparent communication throughout the recovery period:

- Communicate post-fire hazards early and clearly. Share information about debris flow risks, unstable slopes, contaminated water, or road closures using plain language and visuals when possible.
- Develop and maintain an emergency notification system. Ensure that residents are signed up for emergency alerts through platforms like AlertSanDiego and Nixle.
- Host regular community meetings. Virtual or in-person meetings allow residents to hear updates, ask questions, and connect with agency representatives and nonprofit partners.
- Designate spokespersons. Identify trusted officials or community leaders to serve as the public voice of the recovery effort.
- Use multiple communication channels. Relying on one method will not reach everyone. Combine digital, print, verbal, and visual strategies to ensure broad coverage.
- Update regularly, even when information is limited. Frequent communication builds trust. Let the community know what is being done, what is not yet known, and what actions are coming next.
- Engage bilingual and culturally competent outreach teams. In Escondido, Spanish-language materials and interpreters should be readily available to ensure all residents have access to critical information.

Effective communication reduces confusion, strengthens public trust, and ensures equitable access to recovery resources. By planning for communications early and adapting tools to local needs, the Escondido community can foster a more resilient and informed post-fire recovery process.

Community Support Services

Recovery from wildfire extends beyond physical rebuilding. It also involves helping displaced residents, restoring community health, supporting mental wellness, and reconnecting individuals with food, housing, and employment resources. Escondido and the broader North County region offer a range of public and nonprofit services that can assist during post-fire recovery.

City of Escondido – Community Services and Housing Division
Manages emergency housing, tenant resources, and affordable housing programs. Coordinates with FEMA and other agencies for damage assessment and temporary housing support.
https://www.escondido.org

San Diego County Office of Emergency Services (OES)
Leads regional disaster response. Operates Local Assistance Centers following fires and provides access to permits, funding, documentation replacement, and recovery case management.
https://www.readysandiego.org

Interfaith Community Services (Escondido)
Provides emergency shelter, meals, case management, employment services, and mental health counseling for low-income and displaced individuals.
https://www.interfaithservices.org

211 San Diego
Connects residents with live support for shelter, food, medical care, counseling, and recovery aid. Available 24/7 by phone or online.
https://www.211sandiego.org

Community Resource Center (CRC)
Serves North County communities with food distribution, domestic violence services, temporary housing, and post-disaster assistance.
https://crcncc.org

Escondido Education COMPACT
Supports at-risk youth through housing access, counseling, education, and workforce readiness programs. Can assist youth and families displaced by wildfire.
https://www.escondidocompact.org

North County Lifeline
Offers behavioral health services, trauma support, housing stabilization, and case management for youth and families across the region.
https://www.nclifeline.org

The Salvation Army – Escondido Corps
Provides shelter, food, hygiene supplies, and case management during and after fire events. Also coordinates donations and temporary shelter operations.
https://sandiego.salvationarmy.org

Mental Health and Crisis Support

- **San Diego Access and Crisis Line**: 1-888-724-7240 for 24/7 mental health and trauma support
- **North Inland Live Well Center**: Offers access to social services, public benefits, and crisis response teams
- **Jewish Family Service of San Diego**: Offers trauma-informed counseling, legal support, and case management
  https://www.jfssd.org

Faith-Based and Volunteer Organizations
Local churches, mosques, synagogues, and volunteer networks in Escondido often activate quickly in response to wildfires. Groups such as North Coast Church and Catholic Charities provide food, shelter, transportation, and recovery volunteers.

Assistance for Pets and Livestock

American Society for the Prevention of Cruelty to Animals (ASPCA)
Deploys nationally to assist with animal rescue, sheltering, and reunification during major disasters.

California Department of Food and Agriculture (CDFA)
Coordinates large animal evacuation and feed assistance through the California Animal Response Emergency System (CARES).

San Diego Humane Society – Emergency Response Team
Provides animal evacuation, emergency sheltering, field rescue, and reunification services. Offers round-the-clock support during regional disasters.
https://www.sdhumane.org

County of San Diego Department of Animal Services (DAS)
Assists with pet evacuation and sheltering in unincorporated areas. Partners with emergency managers to designate temporary shelters and distribute pet supplies.
https://www.sddac.com

County Large Animal Response Team (LART)
Volunteer group trained to evacuate and care for livestock during emergencies. Activated by the County during wildfires.

Local Equine and Agricultural Networks
Groups such as Valley Center Vaqueros and Del Mar Fairgrounds may provide temporary shelter for horses and livestock during regional fire incidents.

Additional Recovery Partners and Programs

Housing Assistance

- FEMA
- California Department of Housing and Community Development
- Federal Housing Administration
- The Salvation Army

Debris and Hazard Removal

- CalRecycle
- U.S. Army Corps of Engineers (USACE)
- U.S. Geological Survey (USGS)
- California Department of Toxic Substances Control (DTSC)

Food and Nutrition Support

- USDA Supplemental Nutrition Assistance Program (SNAP)
- Disaster CalFresh

Social Services and Employment Assistance

- 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

Agricultural and Landowner Support

- USDA Farm Service Agency
- USDA Rural Development Disaster Assistance
- NRCS Environmental Quality Incentives Program (EQIP)
- NRCS Emergency Watershed Protection Program (EWP)

General Disaster Assistance

- American Red Cross
- California Governor's Office of Emergency Services (Cal OES)
- CAL FIRE
- USFS
- National Park Service

For larger wildfire incidents, an Incident Command System (ICS) may be activated. ICS teams provide structured, scalable coordination and include planning, operations, and communications personnel. More information can be found at: https://www.nps.gov/articles/wildland-fire-incident-command-system-levels.htm

POST-FIRE STABILIZATION, RECOVERY, AND REHABILITATION

Post-wildfire recovery involves multiple phases of emergency response, stabilization, and long-term restoration. While many federal programs and protocols are designed for public lands, similar principles apply to recovery efforts across local jurisdictions and private properties in Escondido and the surrounding areas of San Diego County.

In Southern California's fire-prone ecosystems, wildfire often leads to rapid vegetation loss, leaving hillsides vulnerable to erosion, slope failure, sediment transport, and increased runoff. These impacts can result in downstream flooding, property damage, and habitat degradation, particularly in areas like Escondido Creek, Lake Wohlford, and San Pasqual Valley. Stabilizing these landscapes quickly is critical to preventing further harm to public safety, infrastructure, and sensitive natural resources.

Three Phases of Post-Fire Recovery

Post-fire recovery generally occurs in three key phases:

- **Fire Suppression Damage Repair**
  These are immediate actions to repair damage caused by fire suppression activities such as dozer lines, hand lines, staging areas, drop zones, and access roads. This work typically begins before the wildfire is fully contained and continues through demobilization of the Incident Management Team. Repairs help reduce erosion, reestablish drainage flow, and prevent long-term damage to soil and habitat.
- **Emergency Stabilization**
  On federally managed lands, the USFS implements this phase through the BAER program, while the U.S. Department of the Interior runs a similar Emergency Stabilization program. These programs assess immediate post-fire risks to life, property, and critical resources, and implement treatments to mitigate those hazards. In California, BAER assessments may also inform adjacent state, or private landowners of downstream risks and potential collaboration opportunities. BAER teams are interdisciplinary, often including soil scientists, engineers, hydrologists, biologists, botanists, and archaeologists.
- **Long-Term Recovery and Rehabilitation**
  This phase focuses on restoring ecosystem function and reducing future fire risk on lands unlikely to recover naturally. Activities may span several years and include native plant restoration, invasive species control, road repair, habitat restoration, and streambank stabilization. Funding for this work is often secured through the Burned Area Rehabilitation program or state-level grants.

Regional Challenges and Recovery Priorities

Post-fire rehabilitation in Escondido must account for the city's WUI, vulnerable slopes, and urban drainage systems that can rapidly transport runoff into developed areas. Recovery priorities should include:

- Protecting life, safety, and property through rapid assessment and stabilization of burned slopes, removal of hazard trees, and implementation of erosion control measures.
- Restoring ecosystem function by using native vegetation and mulch materials to stabilize soils and encourage regrowth in critical areas.
- Reducing sediment transport into Escondido Creek, Lake Wohlford, Dixon Lake, and other sensitive water bodies.
- Supporting communities that may lack access to recovery resources, including rural residents and lower-income neighborhoods.
- Coordinating among local, regional, state, and federal agencies to ensure an effective and unified response.

Best Practices for Post-Fire Recovery

Successful post-fire recovery includes both immediate stabilization actions and longer-term landscape restoration. Recommended practices include:

- Rapid assessments conducted by Burned Area Emergency Response (BAER) teams or equivalent local experts to evaluate soil burn severity, slope stability, and hydrologic impacts.
- Installation of temporary best management practices such as straw wattles, hydromulch, and silt fences to reduce erosion during the first rainy season.
- Retention of downed wood, where appropriate, to slow runoff and enhance habitat structure.
- Replanting with fire-adapted native species to promote soil stability and reduce future fire risk.
- Monitoring and managing invasive species like mustard (Brassica spp.), fountain grass (*Pennisetum setaceum*), and castor bean (*Ricinus communis*), which often colonize burn scars. Removal of invasive species may require environmental permits and is eligible for funding through CAL FIRE's Forest Health Program, California Wildlife Conservation Board's Fire Resilience grants, and other state or federal programs.

Potential Post-Fire Treatments

A range of treatments can be implemented during the stabilization and rehabilitation phases to reduce erosion, protect infrastructure, and support ecosystem recovery. These treatments are selected based on burn severity, slope position, proximity to structures or waterways, and the likelihood of natural regeneration. Common strategies include slope stabilization, hazard tree removal, mulching, seeding, sediment control, and streambank protection. The following sections provide detailed guidance on the design and application of these treatment types.

Emergency Stabilization-Specific Treatments

Post-fire stabilization treatments are essential in Escondido's varied terrain, where steep slopes, chaparral-covered hillsides, and WUI areas are vulnerable to erosion, flooding, and invasive species following wildfire. Implementing the right treatment early can prevent further damage to homes, infrastructure, and natural resources, particularly in high-risk areas such as the San Pasqual Valley, Daley Ranch, and around Lake Wohlford.

Emergency stabilization efforts focus on immediate, temporary actions to protect life, property, and the environment before long-term restoration begins.

Hillslope Stabilization Treatments

Cover Applications
These treatments reduce soil detachment and slow overland flow:

- **Dry mulch:** Straw or wood mulch is broadcast across burned areas to immediately cover bare soil and reduce erosion. This is particularly useful near trailheads and community interface areas in Escondido's open space preserves.

- **Hydromulch (wet mulch):** A slurry of fiber, tackifier, water, and seed is sprayed on steep or inaccessible slopes. This treatment is ideal for canyon walls or slopes above residential neighborhoods.
- **Slash spreading:** Burned or dead woody material is redistributed on-site to reduce soil exposure and slow runoff. This method can be cost-effective in areas like Daley Ranch or Elfin Forest.
- **Seeding:** Native grass and forb seed mixes are applied to promote vegetation growth and suppress invasive species. Seeding is most effective when combined with mulch and proper soil preparation (e.g., raking to break up the hydrophobic crust).

Erosion Barrier Applications
Physical barriers interrupt surface flow and trap sediment:

- **Erosion control mats:** Biodegradable mats are laid over soil and staked to support seed establishment and reduce sheet flow.
- **Log erosion barriers:** Burned logs or tree trunks are placed perpendicular to slope contours to act as low barriers and slow runoff.
- **Fiber rolls (wattles):** Straw wattles are installed along contours to reduce rill formation and trap sediment.
- **Silt fencing:** Geotextile fabric fences are used in flatter areas to trap sediment before it enters sensitive drainage features or roads.

Channel and Drainage Treatments

These techniques reduce the transport of sediment and debris downstream into Escondido Creek, flood control basins, or urban drainage systems:

- **Check dams:** Rock, log, or straw bale structures are built across small channels to slow water and trap sediment.
- **In-channel tree felling:** Burned trees are placed in a staggered pattern to reduce water velocity and trap debris.
- **Grade stabilizers:** Structures such as rock weirs are built in ephemeral drainages to reduce headcutting and control flow energy.
- **Streambank armoring:** Boulders, root wads, or coir logs are placed along eroding banks to minimize cutting during storm events.
- **Channel deflectors:** Redirect high flows away from unstable areas or toward reinforced drainage points.
- **Debris basins:** Excavated or enhanced catchments are used to temporarily store debris and sediment before they reach infrastructure.

Road and Trail Treatments

Escondido's network of public roads, utility easements, and recreation trails often require targeted stabilization following wildfire:

- **Outsloping and rolling dips (water bars):** Modify road profiles to direct surface water off the road and into safe dispersion areas.
- **Overflow structures:** Armor or redirect stormwater from roads and driveways to reduce washouts.
- **Low water crossings:** Replace culverts with natural fords where appropriate to prevent streambank incision and culvert blockage.
- **Culvert modification:** Increase culvert diameter or add debris bypass structures to reduce flooding risk.
- **Debris racks and deflectors:** Install at upstream culvert entrances to intercept branches and sediment.
- **Riser pipes:** Allow surface water to enter catchment basins while filtering out debris.
- **Catchment basin cleanouts:** Heavy equipment may be used to remove accumulated debris from detention basins near urban areas.
- **Trail stabilization:** Use rock steps, water bars, and side drains to protect trails from washouts and erosion in burned parks and preserves.

Guidance on treatment design and installation can be found in the *Wildfire Restoration Handbook*: https://www.rmfi.org/sites/default/files/hero-content-files/Fire-Restoration-HandbookDraft_2015_2.compressed_0.pdf

Timber Salvage Considerations

On private and open space lands in Escondido, landowners may consider removing fire-killed trees to reduce hazard, fuel load, or to recover some economic value. However, tree removal should be carefully planned to avoid compaction, erosion, and habitat loss.

Professionals should conduct hazard tree assessments and supervise salvage operations. Dead standing trees may provide critical habitat for birds, insects, and small mammals and may help stabilize slopes when left in place.

Assistance programs include:

- NRCS Environmental Quality Incentives Program (EQIP)
- Farm Services Agency 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

Invasive species such as mustard (*Brassica spp.*), fountain grass (*Pennisetum setaceum*), and stinknet (*Oncosiphon piluliferum*) often colonize Escondido's burned landscapes rapidly. Post-fire conditions give these species a competitive advantage, so early detection and treatment are essential.

Recommended actions:

- **Early weed control:** Use mechanical or chemical removal where appropriate, especially in high-risk areas near homes or trails.
- **Seed with native species:** Choose regionally appropriate, fire-adapted species such as purple needlegrass (*Nassella pulchra*) or California sagebrush (*Artemisia californica*).
- **Prepare the seedbed:** Loosen hydrophobic soil layers and rake topsoil before broadcasting seed.
- **Time planting properly:** Fall is the ideal season for seeding in Southern California to maximize germination with winter rains.
- **Avoid spreading invasives:** Clean equipment and vehicles before entering burned areas.

The San Diego Chapter of CNPS and Mission Resource Conservation District offer guidance on native seeding and post-fire restoration.

Environmental Review and Permitting

Restoration activities following wildfire in and around Escondido may require environmental review and regulatory permitting, depending on the location, land ownership, and scope of the work. Projects involving earth disturbance, vegetation removal, water crossings, or work within sensitive habitats are subject to multiple local, state, and federal requirements.

Typical permits and compliance pathways include:

- **California Environmental Quality Act (CEQA):**
  Any project conducted by a public agency or receiving public funding is subject to CEQA review. In Escondido, the lead agency is typically the **City of Escondido**, **San Diego County**, or a state agency like CAL FIRE or CAL OES. Projects may require preparation of an Initial Study, Mitigated Negative Declaration (MND), or Environmental Impact Report (EIR) depending on potential impacts.
- **CDFW Streambed Alteration Agreement (SAA) – Fish and Game Code Section 1602:**
  Required for work in or adjacent to riparian habitats, drainages, or creeks (such as Escondido Creek or tributaries in San Pasqual Valley). Activities like culvert upgrades, bank stabilization, or debris basin construction may trigger this requirement. Early consultation with the **California Department of Fish and Wildlife (South Coast Region)** is recommended.
- **Clean Water Act Section 404 (USACE):**
  Projects involving fill or alteration of "waters of the U.S.", such as streams, wetlands, or ephemeral drainages, require a permit from the **U.S. Army Corps of Engineers (Los Angeles District)**. Most post-fire stabilization work falls under Nationwide Permits, but pre-construction notification and coordination are often required.

- **Clean Water Act Section 401 Water Quality Certification:**
  Any Section 404 permit must be accompanied by a Section 401 certification from the **San Diego Regional Water Quality Control Board (Region 9)**. This verifies that the proposed work will not violate state water quality standards. Projects near Lake Wohlford, Dixon Lake, or San Pasqual Valley may require water quality mitigation measures.
- **National Pollutant Discharge Elimination System (NPDES) Construction General Permit:**
  Required for soil disturbance of 1 acre or more. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and filed through the **State Water Resources Control Board SMARTS system**. Post-fire grading, trail repair, or utility easement stabilization may trigger this threshold.
- **Local Grading, Drainage, and Encroachment Permits:**
  Work on private or city-managed land in Escondido may require review by the **City of Escondido Engineering Division** or **San Diego County Department of Public Works**. These permits address grading, sediment control, driveway repairs, culvert installations, and work in rights-of-way or stormwater systems.
- **Biological Survey Requirements and Avoidance Measures:**
  Projects that may affect listed species (e.g., Least Bell's Vireo, Arroyo Toad, or California Gnatcatcher) must comply with **federal Endangered Species Act (ESA)** and **California Endangered Species Act (CESA)** requirements. Pre-construction surveys and avoidance buffers may be required by **CDFW**, **USFWS**, or the City under MSCP guidelines.

Regional Considerations for Escondido

Escondido's landscape is made up of riparian corridors, agricultural valleys, steep chaparral slopes, and protected open spaces, each of which responds differently to wildfire. Local planning efforts should tailor post-fire recovery strategies to the specific needs and vulnerabilities of these varied landscapes.

Key considerations include:

- **San Pasqual Valley Agricultural Preserve:**
  This working agricultural region is highly sensitive to erosion and sedimentation. Recovery planning should prioritize the protection of soil stability and water quality to support ongoing agricultural operations and prevent sediment buildup in local waterways.
- **Daley Ranch and Lake Wohlford Open Space:**
  These open space preserves serve as important habitat areas and recreational resources. Post-fire efforts here should focus on repairing damaged trails, restoring native vegetation, and controlling invasive species that may take advantage of disturbed conditions.
- **Urban Drainage Infrastructure:**
  Burned slopes adjacent to developed areas can lead to increased runoff, which may overwhelm storm drains, culverts, and roadside ditches. Temporary sediment control measures and long-term drainage improvements should be evaluated and implemented in fire-affected neighborhoods.

Post-Fire Community Recovery

Recovery on lands in Escondido falls primarily to the City, County, and private landowners. Challenges include rebuilding homes in high-severity burn areas, stabilizing fire-damaged slopes, debris removal, and restoring critical infrastructure. Public safety, access to funding, and community cohesion all play major roles in long-term recovery.

Key considerations:

- Homes located on unstable slopes may face delayed rebuild approvals or require additional geotechnical assessment.
- Local businesses affected by evacuation, loss of power, or property damage may need targeted economic support.
- Invasive species management and habitat restoration often extend beyond the immediate recovery period and may require multiyear planning.

A coordinated, well-funded recovery plan should include phased implementation, multi-stakeholder collaboration, and regular progress monitoring.

For additional recovery tools, visit the After the Flames resource hub:
https://aftertheflames.com/resources

Escondido Recovery Plan

The Escondido Recovery Plan is a comprehensive, all-hazards framework designed to guide the City of Escondido's recovery from natural, technological, and human-caused disasters. Developed in alignment with the Standardized Emergency Management System and the National Incident Management System, the plan adopts a Whole Community approach, actively engaging government, private sector, nonprofit organizations, and residents in coordinated recovery efforts. The plan's structure establishes a clear Recovery Coordination Organizational Structure modeled after the Incident Command System, with defined roles such as a Recovery Coordination Officer and dedicated sections for operations, planning, logistics, and finance. It emphasizes the importance of leadership direction, robust documentation, and centralized information sharing to maintain situational awareness and informed decision making throughout the recovery process.

Operationally, the plan delineates recovery into short-term, intermediate, and long-term phases, addressing everything from immediate damage assessment and restoration of essential services to long-term mitigation and community resilience. Key Recovery Support Functions (RSFs) are outlined in dedicated annexes, covering economic recovery, health and social services, housing, infrastructure, and natural and cultural resources. For example, the Economic RSF details strategies for business continuity, workforce support, and regulatory review, while the Health and Social Services RSF focuses on restoring healthcare facilities and behavioral health services.

The plan's flexible, phased approach ensures that Escondido can efficiently coordinate resources, track progress, and adapt to evolving needs, ultimately supporting a resilient and equitable recovery for the entire community.

Debris Removal

The volume of debris generated by a wildfire can rapidly exceed the City's capacity to manage it, necessitating support from regional, state, and federal partners. In such events, debris from damaged infrastructure may injure or trap individuals, obstruct critical transportation routes, delay emergency response efforts, hinder timely damage assessments, and pose significant risks to both public and environmental health. Further, wildfire debris on private property can significantly slow community recovery efforts.

Efficient, safe, and cost-effective removal of large quantities of wildfire debris is essential for the City's recovery. Therefore, it is crucial that the City proactively plans and prepares for debris collection, removal, processing, and disposal well in advance of any disaster.

NRCS Emergency Watershed Protection (EWP) Program

The NRCS administers the EWP Program to assist public agencies and landowners in addressing post-fire threats to life and property on non-federal lands. EWP assistance may include technical and financial support for erosion control, slope stabilization, and channel repairs.

Eligible sponsors, such as the City of Escondido or San Diego County, can apply for EWP support to implement priority projects. The program covers up to 75% of project costs, with the remainder covered by local match or in-kind contributions such as volunteer labor.

More information: https://www.nrcs.usda.gov/programs-initiatives/ewp-emergency-watershed-protection

Long-Term Planning and Monitoring

Large-scale post-fire recovery projects benefit from structured, science-based planning approaches. The U.S. Forest Service (USFS) offers a five-step restoration planning framework that can be adapted for use in local and regional recovery projects across California:

1. Assess burn severity and site conditions
2. Identify restoration goals and objectives
3. Select appropriate treatments
4. Design implementation and monitoring plans
5. Develop a restoration portfolio to guide long-term recovery actions

This framework supports the design of effective, resilient, and adaptive restoration strategies and can be applied by local governments, public agencies, and landowners.

For additional technical guidance:

- **USFS Planning Framework (GTR-270):**
  https://www.fs.usda.gov/psw/publications/documents/psw_gtr270/psw_gtr270.pdf
- **Treatment Selection Tool:**
  A helpful summary of treatment options based on slope, drainage, and road condition is available at: https://www.afterwildfirenm.org/post-fire-treatments/which-treatment-do-i-use

Post Fire Resilience and Climate Planning

Post-fire recovery presents an opportunity to improve community resilience and adapt to future climate conditions. Recommended actions include:

- Integrating climate projections into fire and flood risk models to inform long-term planning.
- Updating local building codes and land use policies to promote fire-safe development in high-risk areas.
- Establishing contingency housing plans to support displaced residents during and after future wildfire events.
- Creating defensible space and vegetation management standards that support both fire safety and ecological health.
- Reviewing and updating Local Hazard Mitigation Plans every five years to reflect current risk and vulnerability.

Additional Post-Fire Recovery Resources

Several regional, state, and federal agencies offer guidance, funding, and technical assistance to support long-term recovery after wildfire. The following programs are particularly relevant for communities in San Diego County, including the City of Escondido:

- **National Interagency Fire Center – Post-Fire Recovery**
  Website: https://www.nifc.gov/programs/post-fire-recovery
  The National Interagency Fire Center (NIFC) coordinates wildland fire response and recovery efforts across multiple federal agencies, including the U.S. Forest Service, Bureau of Land Management, and National Park Service. Their post-fire recovery portal provides access to guidance documents, federal recovery frameworks, and information on programs such as Burned Area Emergency Response (BAER) and Burned Area Rehabilitation (BAR). This site is a valuable resource for understanding federal protocols, treatment options, and multi-agency coordination efforts.
- **California Governor's Office of Emergency Services (Cal OES) – Recovery Support**
  Website: https://www.caloes.ca.gov/Recovery
  Cal OES oversees disaster recovery throughout California and serves as the primary coordination agency for state-level assistance. The Recovery Support Division helps local governments and eligible private nonprofits access disaster recovery funding, including Public Assistance (PA), Hazard Mitigation Grant Program (HMGP), and Fire Management Assistance Grants (FMAG). For post-fire recovery in Escondido, Cal OES can assist with documentation requirements, grant subapplications, and coordination with FEMA and other state partners.
- **San Diego County Watershed Protection Program**
  Website: https://www.sandiegocounty.gov/content/sdc/dpw/watersheds.html
  This program, managed by the County Department of Public Works, focuses on protecting water quality and reducing pollution throughout San Diego County's watersheds. After wildfire, the program plays an important role in managing sediment transport, assessing impacts to creeks and stormwater infrastructure, and coordinating Best Management Practices (BMPs) on both public and private lands. Local agencies and landowners in Escondido can partner with the program for technical guidance, educational outreach, and coordination on post-fire watershed stabilization projects.