

# Montecito Fire Department



## Comprehensive Wildfire Mitigation Strategy

October 20, 2024

### Purpose

The purpose of the Comprehensive Wildfire Mitigation Strategy is to consolidate the information and recommendations provided within the Montecito Community Wildfire Protection Plan (2016), Thomas Fire Retrospective Study (2018), and the Community Wildfire Protection Plan Amendment (2019). This strategy will identify the wildfire mitigation projects undertaken by the Department and provide guidance on project prioritization.

The goal of the Montecito Wildfire Mitigation Program is to protect life safety and prevent community losses during a wildfire through increased efficiency of firefighting resources.

This goal is achieved by:

1. Coordinating with architects, developers, and homeowners to ensure current building codes are met and the most current fire protection standards are incorporated into remodels and new development.
2. Enhancing wildfire safety education for the community through public outreach, defensible space surveys, and Fire Code enforcement.
3. Developing relationships and partnerships within the community and neighboring jurisdictions to address wildfire risk at the landscape scale.
4. Reducing hazardous fuels along roadsides and on private property through collaborative projects with District residents.
5. Mitigating fire risk in remote areas of the District.

### Chaparral Fire Ecology

To best manage wildland vegetation, it is important to understand its fire ecology. The vegetation that dominates the slopes above Montecito is known collectively as chaparral. Chaparral is common throughout California's steepest, rockiest slopes and provides ecosystem value through slope stabilization, watershed cover, wildlife habitat, and nutrient cycling. Its continuous blanket of vegetation cover provide a fuel bed that is highly conducive to wildfire spread, especially during the annual period of drought that characterize the local Mediterranean climate's summer and fall months.

The local fire history maps (Figure 3 and 4) show significant fires always impact the northern portion of the District. These damaging fires are caused when an ignition becomes established in the wildland vegetation to the north of the community and spreads downhill under a "sundowner" wind event through the continuous chaparral shrublands. These weather events are most likely to occur in the spring and fall months but are most problematic during fall, when moisture in the vegetation is at critically dry levels.

Chaparral has evolved with a long fire return interval, meaning the time between consecutive fires burning the same area. Historically, in southern California chaparral, the fire return interval ranges from 30-100 years. Due to the relatively long periods between fires, when the vegetation does burn, there is a high dead component. This high volume of dead vegetation causes an intense, canopy-replacing wildfire that is challenging to suppress.

Once burned, chaparral dominated landscapes are initially populated by annual wildflowers and short-lived perennials. These "fire followers" provide ground cover and nutrients to the blackened slopes. Within several years, the chaparral shrubs will once again dominate the hillsides. However, it will take over a decade for the landscape to accumulate the dead fuels necessary to spread another high intensity wildfire.

Project Prioritization

Assessing the vegetation and weather conditions which exist during the most catastrophic wildfires allows us to effectively plan and prioritize the Department’s use of “Wildfire Defense Zone” annual funds.

Science and experience have shown that home ignitions during a wildfire often occur through ember cast. Ember production exponentially increases in wildfires where structures are burning. By focusing wildfire mitigation actions and limiting structure ignitions in the northern reaches of Montecito, the area most vulnerable to a fire coming from the chaparral covered wildlands, wildfires have less opportunity to become established in more populated portions of the community. Additionally, due to the nature of chaparral, prioritization is given to the western portion of the District where the vegetation has matured an additional 13 years, relative to the eastern portion near the 2017 Thomas Fire.

The Wildfire Mitigation Prioritization Map (Figure 3) identifies five project areas and graphically displays how projects are geographically prioritized across the District based on their relative risk of impacts from future wildfires.

Annual Wildfire Mitigation Projects

The table below highlights the projects planned every year, the estimated annual area treated, the typical months the projects are implemented, the estimated number of days to complete the project, and the estimated cost for implementation.

<b>Project Name</b>	<b>Treated Area</b>	<b>Months Implemented</b>	<b>Days to Implement</b>	<b>Estimated Annual Cost for Implementation</b>
Neighborhood Chipping Program	1500 parcels within project 250 participants/yr 300 tons/yr removed	February - June	50	\$130,000
Fuel Treatment Network Maintenance	25 acres/yr	August – March	35	\$90,000
Prescribed Herbivory	50 acres	As Needed	50	\$65,000
Roadside Hazard Abatement	10 miles	March – July	35	\$55,000
Roadside Tag and Trim	3 miles	As Needed	15	\$40,000
Defensible Space	10 parcels	As Needed	10	\$25,000
Roadside Invasive Weed Removal	10 miles	February – June	15	\$22,000
Hazard Tree Removal	10 parcels	As Needed	20	\$50,000
Home Hardening Assistance Program	10-15 homes	As Needed	NA	\$50,000

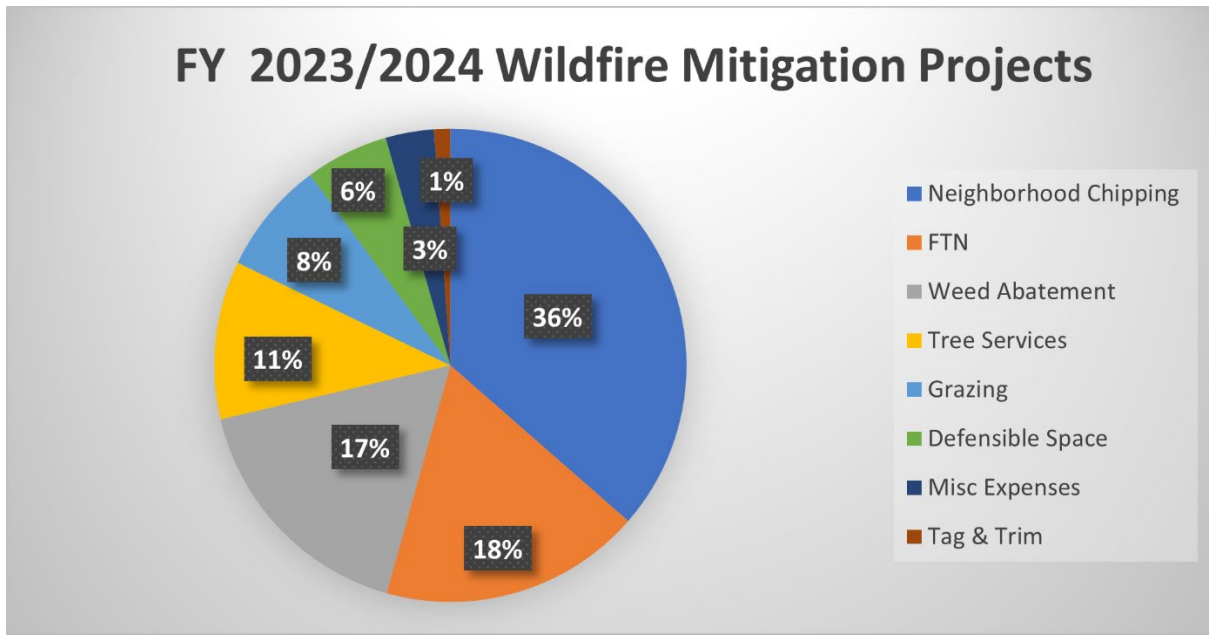


Figure 1: Chart showing portion each project makes up of the entire Wildfire Mitigation Program in FY 23.

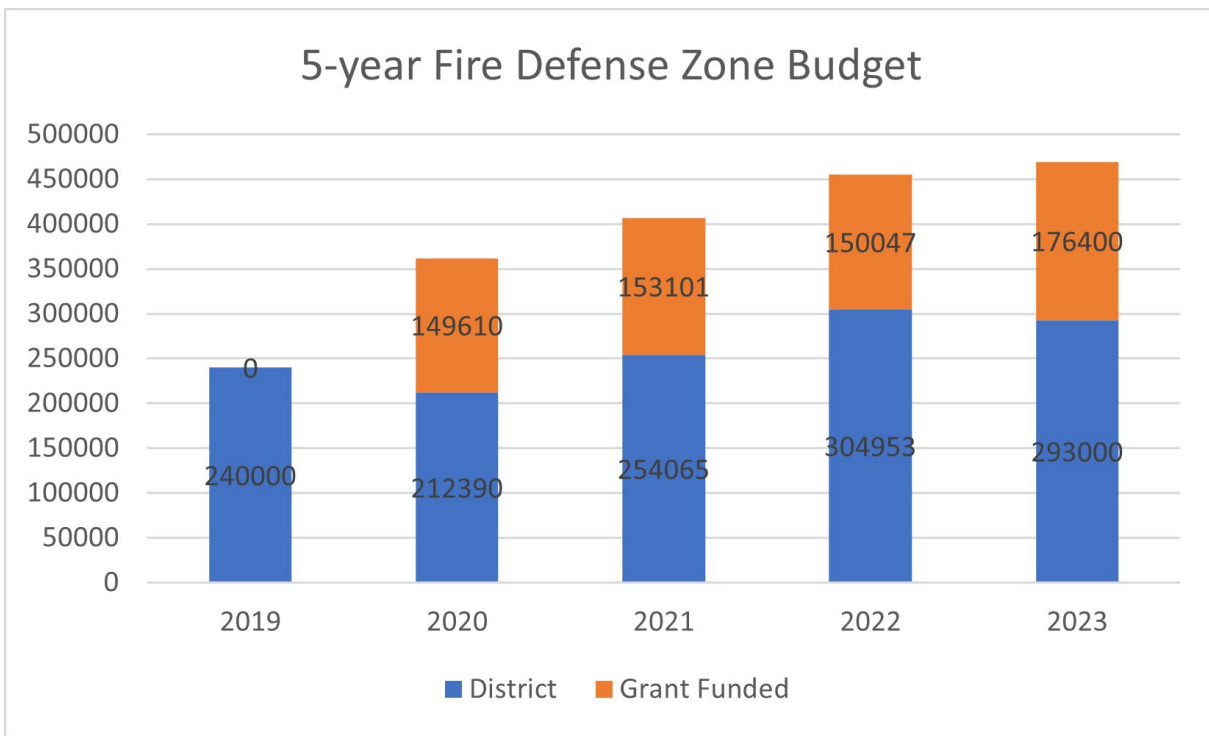


Figure 2: Graph showing the funds committed to wildfire mitigation through district and grant funds.

## Project Description

### *Neighborhood Chipping Program*

The Neighborhood Chipping Program has a relatively fixed annual cost. All other projects can expand and/or contract depending on the year's conditions and available funding.

The goal of the Neighborhood Chipping Program is to assist community members in increasing defensible space around values most at risk from wildfire. The project allows the Fire Department to highlight the importance of property owner preparation efforts and communicate the approaching high fire season. It also allows the Wildland Fire Specialists an opportunity to build relationships with many of the property owners residing in the Very High Fire Hazard Severity Zone.

### *Fuel Treatment Network Maintenance*

Reducing the continuity and density of vegetation in strategic locations increases the safety and efficiency of wildfire suppression actions. The Fuel Treatment Network consists of approximately 300 acres that connect the northern road systems of West Mountain Drive, East Mountain Drive, and Bella Vista Drive with fuel reduction treatments on private properties. The treatment includes removing lower branches of mature trees, removing dead woody material, decreasing the number of standing shrubs by approximately 50 percent, and reducing the height of the annual grasses.

### *Prescribed Herbivory*

The Thomas Fire burned off most of the wildlands along the northern part of the District, providing an opportunity to limit regrowth and continuity of the vegetation and expand on the existing Fuel Treatment Network towards the Los Padres N.F. boundary. Given the physical characteristics of this area, prescribed herbivory is an attractive option as it has proven to be an ecologically and economically sustainable management tool. The steep and rugged terrain combined with limited access make it the only realistic vegetation management option in this area. Figure 6 is a map showing prescribed herbivory and the mixed treatments that make up the Fuel Treatment Network.

### *Roadside Hazard Abatement*

In Santa Barbara County, statistics show 77 percent of all wildfire ignitions occur within 50 feet of a roadway and 22 percent of all determined ignitions are started from vehicles. The Roadside Hazard Abatement project reduces fire risk directly adjacent to the travel corridors by eliminating the annual grasses each year before they are fully cured and available to burn. The expanded clearance reduces the potential fire intensity along critical escape routes and evacuation corridors in the event of a wildfire.

### *Roadside Tag and Trim*

The Roadside Tag and Trim project remove low-hanging branches, those below the 13.5 feet required by Fire Code, improving emergency vehicle access, visibility, and enhancing the evacuation corridor by expanding the usable width of roadways on Montecito's narrow streets.

### *Defensible Space*

Due to the topographical and vegetation conditions, there are parcels throughout the very high fire hazard severity zone of the District where more than the required 100 feet of defensible space is recommended. Additionally, there are certain parcels where increased defensible space expands the existing fuel treatment network. When these strategic projects are identified, the department facilitates and contributes to the cost of completing the project.

*Roadside Invasive Weed Removal*

The Roadside Invasive Weed Removal project targets the most prominent non-native invasive plant species along Montecito’s roadways. A crew pulls the invasive plants out by hand and transports them to the waste disposal facility for proper disposal. The project occurs before the plants produce seeds each year and prior to the Roadside Hazard Abatement project to reduce the expansion of non-native plants within the community.

*Hazard Tree Removal*

Standing dead trees are a safety concern because weakened trees and large limbs can come down during periods of high winds damaging infrastructure and causing evacuation issues. Dead trees also increase fire spread during a wildfire as they cast embers downwind causing new spot fires, contributing to fire spread and hampering suppression efforts. The Hazard Tree Removal Program is conducted on a case-by-case basis and is initiated with a letter from the Fire Marshal. The notification letter is often the only step taken by the Department as most times the owner will mitigate the hazard upon receipt of the letter.

*Home Hardening Assistance Program*

The best chances for a home to survive a wildfire is to prepare the structure itself so it can “stand alone”, meaning a fire can move through the area causing minimal damage without action being taken. Creating a stand-alone structure means taking the necessary steps to limit the chances an ember can either enter the home and/or land on a receptive fuel bed directly adjacent to the house. Recent post fire assessments have concluded hardened structures had over three times the likelihood of surviving a wildfire compared to non-hardened structures. In 2021, the Department initiated a Home Hardening Assistance Program which allowed residents to apply to receive funding to retrofit their home’s vents with Brand Guard ember resistant vents. Given unforeseen challenges with implementing a structure retrofit program, the department is planning a transition to a reimbursement program in 2024. This program will reimburse home owners for approved wildfire mitigation projects that focus on structure hardening.

Important Projects Adjacent to Montecito

There are several projects which are adjacent to Montecito’s jurisdictional boundary, but whose maintenance are important for the overall wildfire resilience of the community and should be supported however possible by the Fire Department.

<b>Project</b>	<b>Jurisdiction</b>
East Camino Cielo Fuel Break Maintenance	Los Padres N.F.
Horseshoe Fuel Break Maintenance	Los Padres N.F.
Edison Road System Repair/Maintenance	Southern California Edison
West Mountain Drive Roadside Fuels Reduction	Santa Barbara City F.D.
Ladera Lane Roadside Fuels Reduction	Carpinteria/Summerland F.D.

Monitoring and Adaptive Management

Wildfire, especially as it relates to the Wildland Urban Interface (WUI), is both complex and dynamic. It is important for all mitigation projects to have clear objectives and to be monitored over time to ensure the projects are successful and any unintended consequences are evaluated.

All projects are tracked geospatially using ArcMap software where the following attributes are captured; property owner, size, date of completion, fuel type, treatment type, tons of fuel removed, contractor, and

cost. There are two permanent monitoring plots across the District where fuel loads are calculated and pictures are taken to track changes in vegetation over time. The department utilizes information gathered from the monitoring plots, published literature, professional conferences, and experience in wildfire suppression to adapt the projects to the evolving environmental conditions.

### Programmatic Environmental Impact Report

In 2019, California’s Board of Forestry and Fire Protection released a Final Program Environmental Impact Report (PEIR) that evaluates the environmental impacts of the California Vegetation Treatment Program (Cal VTP). This report fulfills the requirements of the California Environmental Quality Act (CEQA) and provides a programmatic environmental assessment of potential vegetation treatments which could occur within the identified treatable landscapes of California’s local and state responsibility areas.

In 2022, Montecito Fire Department hired the environmental consultant Dudek to provide a comprehensive environmental analysis, utilizing this CalVTP PEIR, for all projects which could be completed on the District over the next 10 years. This analysis provides an expedited process to meet state and local government’s goal of increasing vegetation treatments to reduce wildfire risk while conserving natural resources. Montecito’s Vegetation Management Program Project Specific Analysis is available on the California Board of Forestry and Fire Protection’s Environmental Documentation for Approved Projects [HERE](#).

### Education – Providing “What Right Looks Like”

There is often a false sense from property owners that the Fire Department will be able to extinguish all fires that start in and around their homes. Although local fire departments stand ready to quickly respond to contain any wildfire that may start, sometimes conditions make it impossible to place a fire engine at every home. Property owners often have the financial resources necessary to make the changes to improve fire safety on their property but need information of what actions should be taken. The Department views its wildfire mitigation projects as an example of “what right looks like” and as an opportunity to encourage property owners to conduct similar actions.

Montecito Fire Department has several programs to help residents understand their responsibilities and how they can best prepare their property for wildfire. The Department’s webpage offers a host of information, and the Public Information Officer communicates with the community through various local news outlets and the Department’s social media platforms.

Fire mitigation is incorporated into the building planning process for both new and remodel construction through the Fire Protection Certificate process. Additionally, the Department offers complimentary Defensible Space Surveys where a Wildland Fire Specialist walks the property with the homeowner and makes specific recommendations on wildfire mitigation actions. Homeowners are provided with a Defensible Space Report with recommended actions to harden their home against future wildfires.

### Weed Abatement Inspections

Each spring, the Montecito Fire Department reminds residents of their responsibilities to prepare for the approaching high fire season by ensuring their structure and property comply with the regulations set by the Montecito Fire Code. Depending on the weather patterns of the specific year and its impact on the onset of increased fire danger, the weed abatement mailer highlights the date in which the requirements identified in Development Standard #2 – Vegetation Management need to be met. After the set date, department personnel inspect all 4,226 properties within the District to ensure compliance. If non-compliant issues are found on the property, a corrective letter is sent to the property owner identifying the needed mitigated actions and a date for the subsequent inspection.

### The Importance of Collaboration

It is important for the Department to communicate and collaborate with not only other emergency service agencies, but with the various organizations that work on researching and improving local wildfire preparedness. Some examples of this collaboration are the Santa Barbara County Fire Safe Council, Cachuma Resource Conservation District, Southern California Edison, and University of California Santa Barbara. The Regional Wildfire Mitigation Program and the Regional Priority Plan both developed from these collaborative relationships and will have long-term, regional-scale impacts.

### Conclusion

The Montecito Fire Protection District is a progressive organization committed to the protection of the people, property, and the environment. This Comprehensive Wildfire Mitigation Strategy is a key component of the Department's success in meeting that mission.

The Retrospective Study completed after the 2017 Thomas Fire, highlighted the impacts the Department's Wildfire Mitigation Program had on the successful defense of Montecito and the overall suppression efforts of the wildfire. The Department recognizes that these impacts are a direct result of the relationships and partnerships developed between the District's property owners and the Department. Flexibility and discretion will always be incorporated into the program to allow for the continued implementation of projects that strengthen the partnership between property owners and the Department, collectively creating a more fire-resilient community.

For a visual tour of Montecito's Vegetation Management and Wildfire Prevention Program, visit the online story map available [HERE](#).



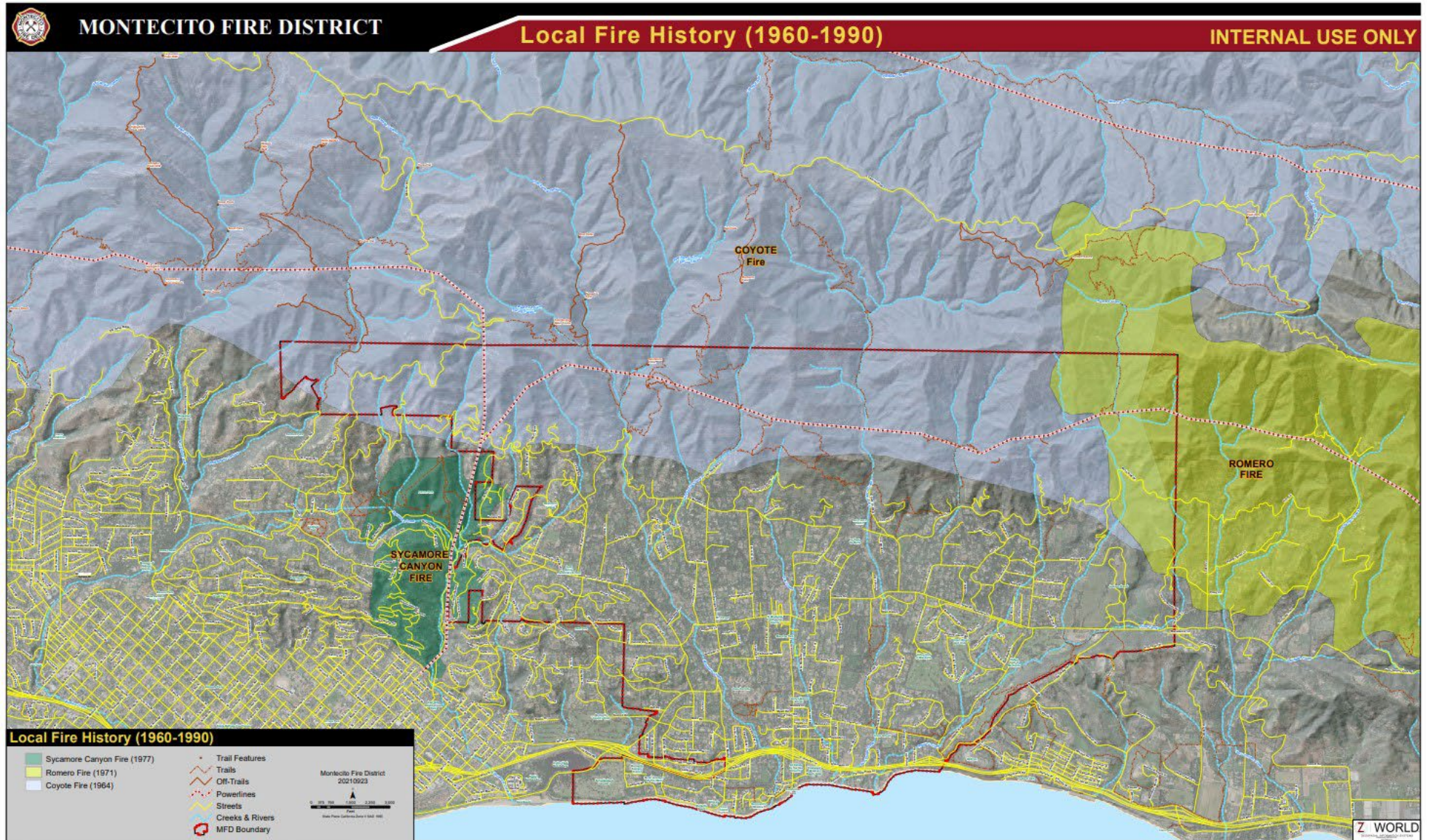


Figure 3: Local Fire History Map 1960-1990.

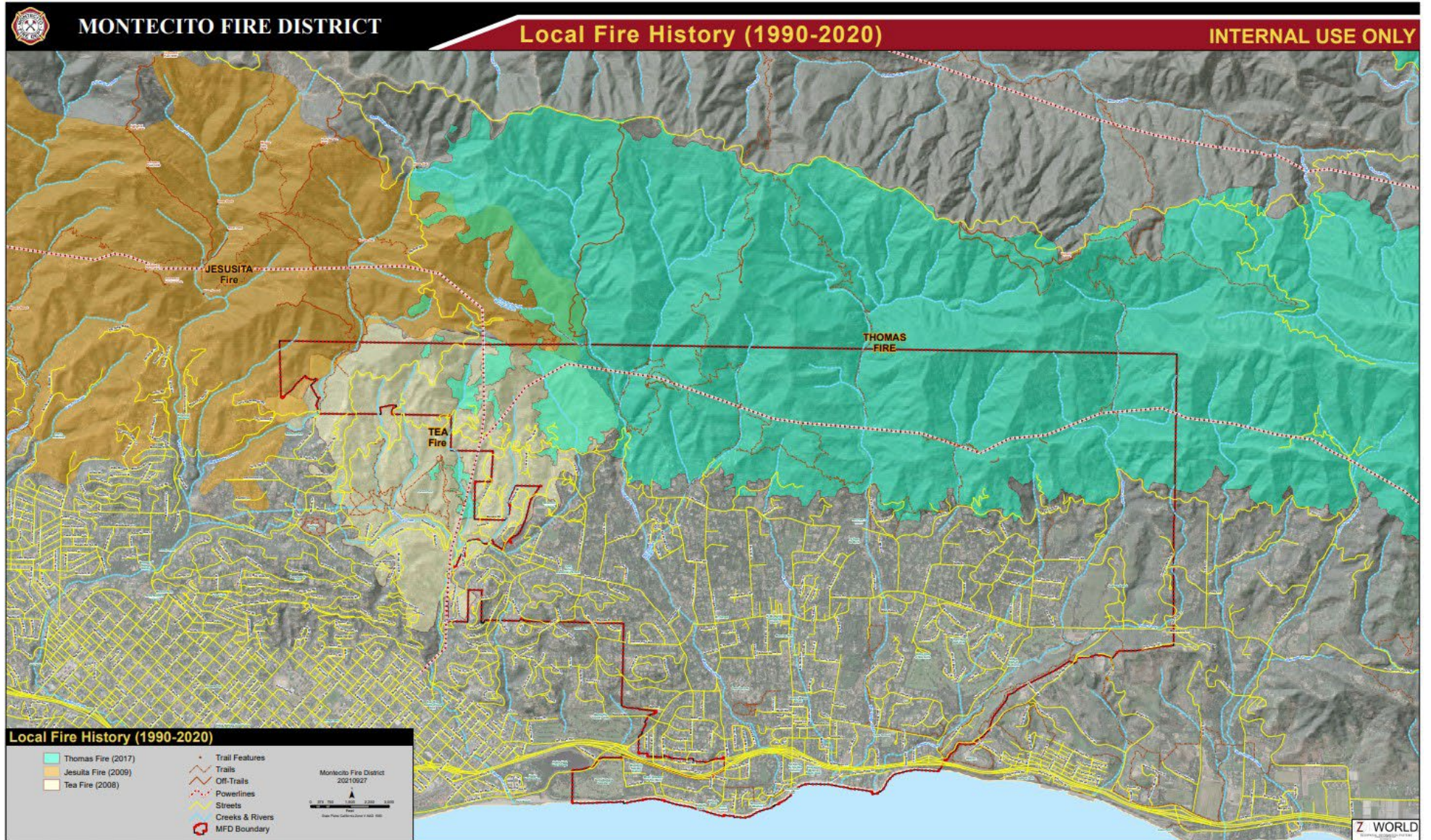


Figure 4: Local Fire History Map 1990-2020.

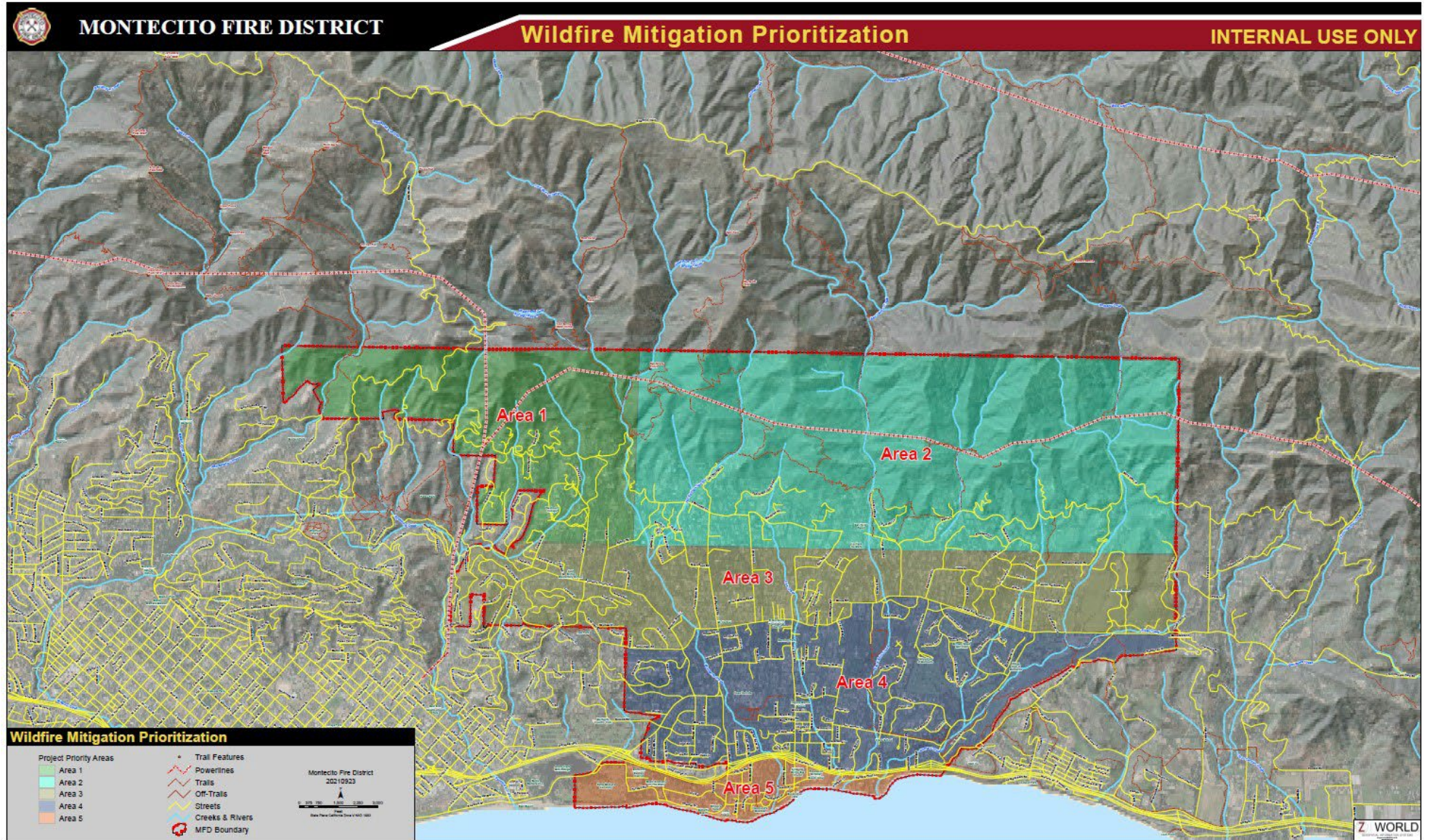


Figure 5: Wildfire Mitigation Project Prioritization Map showing which area get the highest priority (Area 1) and which area get the least (Area 5) based on risk of impact from future wildfires.

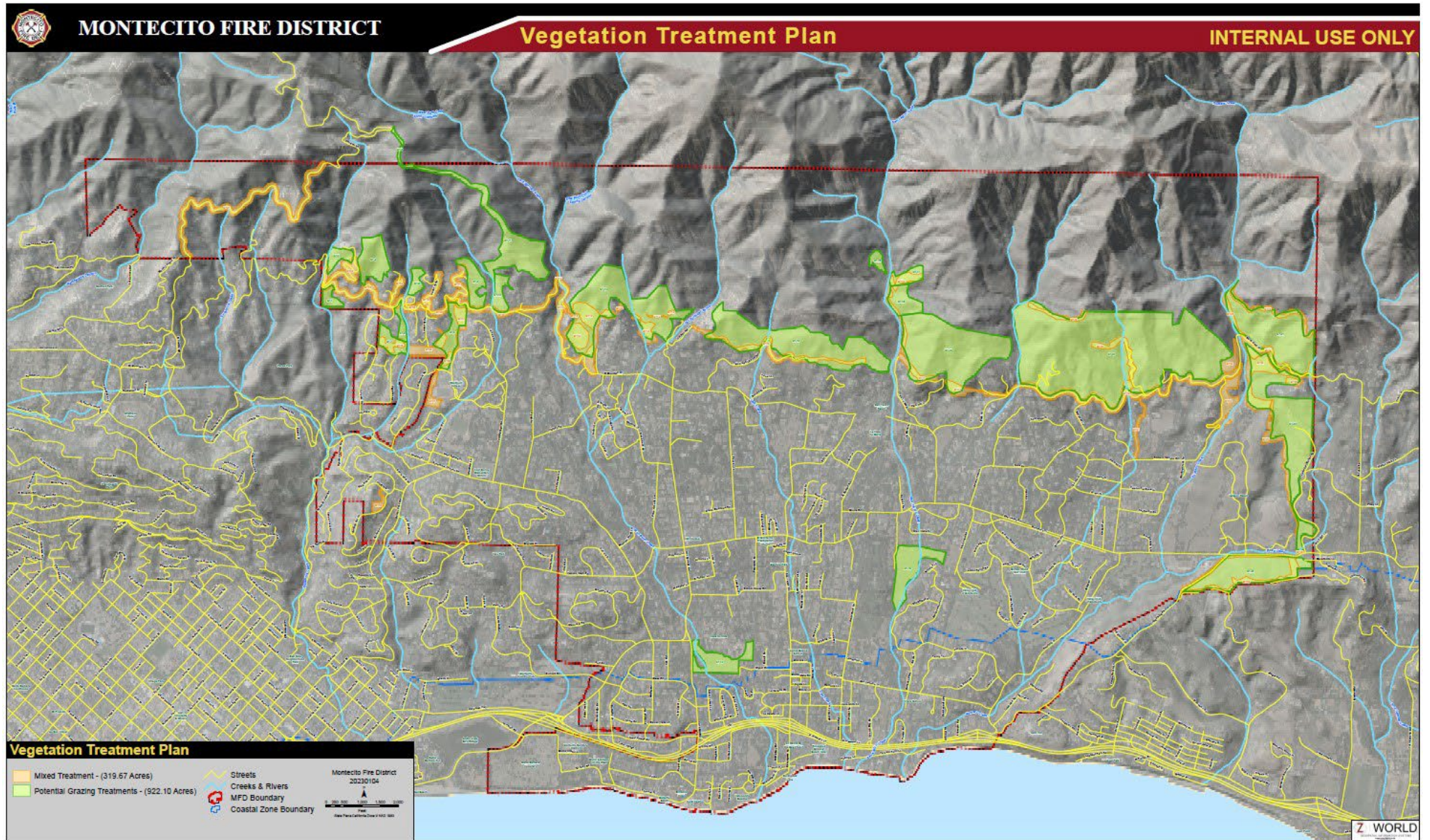


Figure 6: Map showing Montecito's Vegetation Treatment Plan that was analyzed in 2022 by Dudek Environmental Consultants. The analysis includes the projects that could potentially be implemented over the course of 10-years (319 acres – mixed treatments, 933 acres – grazing treatments).