

**2015**  
**Unit Strategic Fire Plan**  
*for*  
**Marin County**



**UNIT STRATEGIC FIRE PLAN AMENDMENTS**

<u>Date</u>	<u>Section Updated</u>	<u>Page Numbers Updated</u>	<u>Description of Update</u>	<u>Updated by</u>
7-10-2012	<i>All</i>	<i>All</i>	Format Revisions Repagination New Information	Kent Julin
6-1-2013	<i>All</i>	<i>All</i>	Revisions Repagination New Information	Scott D. Alber
6-1-2014	<i>All</i>	<i>All</i>	Revisions Repagination New Information	Scott D. Alber
5-1-2015	<i>All</i>	<i>All</i>	Format Revision New Information in all sections Pre-Fire Projects, Fire Stats, Forest and Rangeland Priority Landscapes discussion, ACC Reporting requirements	Christie Neill

# TABLE OF CONTENTS

COVER .....	1
UNIT STRATEGIC FIRE PLAN AMENDMENTS .....	2
TABLE OF CONTENTS .....	3
SIGNATURE PAGE .....	4
EXECUTIVE SUMMARY .....	5
SECTION I: UNIT OVERVIEW .....	7
A. UNIT DESCRIPTION .....	7
B. UNIT PREPAREDNESS AND FIREFIGHTING CAPABILITIES.....	10
SECTION II: COLLABORATION .....	12
A. COMMUNITY / AGENCIES/ FIRE SAFE COUNCIL.....	13
B. VEGETATION MANAGEMENT PUBLIC AND LAND MGT AGENCIES	
SECTION III: VALUES.....	13
A. VALUES .....	13
B. COMMUNITIES.....	14
SECTION IV: PRE FIRE MANAGEMENT STRATEGIES.....	15
A. FIRE PREVENTION.....	15
1. ENGINEERING & STRUCTURE IGNITABILITY.....	16
2. INFORMATION & EDUCATION .....	18
B. VEGETATION MANAGEMENT.....	19
SECTION V: PRE-FIRE MANAGEMENT TACTICS .....	21
A. DIVISION / BATTALION / PROGRAM PLANS.....	21
APPENDIX A: IDENTIFIED PRE-FIRE PROJECTS .....	24
APPENDIX B: UNIT GOALS AND OBJECTIVES.....	26
APPENDIX C: CONTRACT COUNTY REPORTING .....	28
APPENDIX D: IGNITION MANAGEMENT PLAN .....	29
EXHIBIT1: MARIN LAND USES MAP .....	30
EXHIBIT2: CONTRACT COUNTY MAP.....	31
EXHIBIT3: MARIN WILDLAND-URBAN INTERFACE MAP.....	32
SUPPLEMENT1: 2015.....	33

## SIGNATURE PAGE

### Strategic Fire Plan developed for Marin County

This Plan:

- Was collaboratively developed. Interested parties, Federal, State, City, and County agencies within the County have been consulted and are listed in the plan.
- Identifies and prioritizes pre-fire and post fire management strategies and tactics meant to reduce the loss of assets at risk within Marin County.
- Is intended for use as a planning and assessment tool only. It is the responsibility of those implementing the projects to ensure that all environmental compliance and permitting processes are met as necessary.

*/s/ Jason Weber*

---

**Jason Weber, Unit Chief**

*/s/ Christie Neill*

---

**Christie Neill, VMP Battalion Chief**

## **EXECUTIVE SUMMARY**

Marin County is similar to much of the state where urban and suburban development has pushed further into former wildlands and forests, creating the wildland-urban interface, where houses and businesses meet or intermingle with wildland vegetation. This is where wildfire poses the greatest risk to human life and property. The principal county stakeholders are those people with an interest in protecting their assets from wildfire coordinate their public education efforts and project management through FIREsafe Marin (Marin County's FIRE Safe Council).

The California Fire Plan provides a framework that is applied in Marin for defining fire hazards and ranking values at risk in order to identify and prioritize areas where fire threats can be mitigated. A countywide assessment of the wildland fire threat undertaken by CAL FIRE revealed that nearly 313,000 acres (approximately 82% of the total land area of the county) are ranked as having moderate to very high fire hazard severity zone ratings. Similarly, an analysis of the wildland-urban interface (WUI) by Marin County Fire Department (MCFD) in Marin revealed that there are 68,654 living units (14,551 in SRA) on 63,989 parcels (17,090 in SRA) parcels totaling approximately 60,000 acres in Marin County, with an assessed value of \$59.3 billion.

Marin County will reduce these hazards using an integrated approach that includes a combination of the following elements: (1) Compliance with California PRC 4291 Defensible Space, (2) ridge top fuel breaks, (3) fire-prone species thinning, limbing and clearing, (4) increase access to improvements, (5) wildfire awareness campaign, and (6) enforcement of the International Urban-Wildland Interface Code (with extensive Marin County amendments) (7) wide area defensible space projects (8) fuel reduction and neighborhood defensible space projects in partnership with land management agencies, homeowners groups, cities, towns and special districts, (9) Countywide strategic prioritization of vegetation management projects. Where opportunities and partnerships with land management agencies exist, efforts will support the combination of hazardous fuel reduction that prevents and or minimizes the spread of invasive species.

Where necessary, overgrown roadside vegetation will be trimmed and turnouts will be improved along primary access roads in interface communities. Our wildfire awareness campaign encourages individual and community responsibility for creating defensible space. The International Urban-Wildland Interface Code, applicable to all new and substantially remodeled structures located in the WUI, is being enforced; this code combines building standards, fire apparatus access, and fire-fighting water supply requirements with landscape planning to reduce potential losses caused by wildfire. Furthermore, where alterations and remodels are taking place in the WUI, those elements, modified, altered or replaced are required to comply with Chapter 7A of the California Building Code (Materials, and Construction Methods for Exterior Wildfire Exposure). Finally, this plan incorporates the major land-owner's (MMWD, NPS, MCOSSD) respective vegetation management plan's fuel reduction and defensible space projects.

Even though the Marin County Fire Department has been successful in controlling a large portion of all wildland fires within its jurisdiction, one only needs to examine our fire history to understand the risk our communities face. This fire plan will allow the Marin County Fire Department to create a more efficient fire-protection system focused on meaningful solutions to better protect the communities in Marin. Being able to identify areas where cost-effective, pre-fire management investments can be made will help minimize citizen losses and reduce costs from catastrophic wildfire incidents.

***Jason Weber, FIRE CHIEF***

## **SECTION I: UNIT OVERVIEW**

### **A: UNIT DESCRIPTION**

**1. Unit location:** The basic geographical boundaries of Marin County include National and State Park lands along the Pacific Ocean to the west and south, several suburban communities neighboring the Highway 101 corridor and San Francisco Bay lands to the east, and rural Sonoma County to the north.

**Size and Population:** Marin County covers nearly 520 square miles with a population estimated at 256,069. The Marin County Fire Department serves the largest geographic area in Marin County. Within our service area are six (6) fire stations and a total of 86 Fire Department personnel, which is enhanced by the retention of approximately 60 Seasonal Firefighters during fire season (generally June through October). The Fire Department is an “all-risk” response agency, dedicated to managing fire, US&R and EMS responses in diverse environments including wildland, urban, rural wilderness, freeway, and ocean/water.

**Roads and Streets:** Lengthy cul-de-sacs generally service new developments. Cul-de-sacs and dead-end roads serve most of the smaller canyons and valleys, and hillsides, as well. Some planned unit developments are served by private roads, which create access problems (i.e., narrow paved widths and limited on-street parking). Roadways with a width of less than 20 feet of unobstructed paved surface, with a dead-ends longer than 150 feet, with a cull-de-sac longer than 800 feet, or with a cul-de-sac diameter less than 68 feet are considered hazardous in terms of fire access and protection. A large number of roadways within Marin County fall into one or more of the above four categories.

**2. Vegetation:** Marin County has a Mediterranean climate with cool, wet winters and warm dry summers; this climate is substantially influenced by the proximity to the Pacific Ocean. In addition, ground level fog and a lower atmosphere marine layer are common in the summer months. The local climate, along with extensive topographic diversity, supports a variety of vegetation types. Temperature, precipitation, soil type, aspect, slope, and land use history all interact to determine the existing vegetation at any given location. Grasslands with a mixture of native and nonnative annual and perennial species occur most often in the northern and eastern parts of the county due to a combination of soil type, lower rainfall, and more intensive land use history. The southern and western facing slopes tend to have a higher percentage of grasslands. In the central and eastern parts of the county, north facing slopes are usually densely wooded from lower elevations to ridge with mixture of mostly hardwood species such as coast live oak, California bay, Pacific madrone, and other oak species. Closer to the coast where precipitation is higher and marine influence greater within the western portion of the fire district, most areas are densely forested with conifer species (Bishop pine, Douglas-fir and coast redwood) and associated hardwood species. Chaparral vegetation also occurs in parts of the county, especially on steeper south and west facing slopes. Expansion of the residential community into areas of heavier vegetation has resulted in homes existing in close proximity to dense natural foliage. Often such dwellings are completely surrounded by highly combustible or tall vegetation, increasing the potential that wildland fires could impact them.

Development has occurred as the communities along the Highway 101 corridor have extended west. In addition, development has further spread into the hills and the smaller valleys and canyons of the San Geronimo Valley, Nicasio and Point Reyes Station.

**3. Topography:** Marin County is a mosaic of rolling hills, valleys and ridges that trend from northwest to southeast. Flat lands are found in the central and northern portions of the County. Most of the existing urban and suburbanized areas are on relatively flat lands (0 – 5% slope). Future residential development is expected in the hill areas of the San Geronimo Valley, Lucas Valley/Nicasio and Point Reyes Station. In addition, as the value of parcels increase, more marginal lots along Throckmorton Ridge/Panoramic Highway are being developed. The majority of the hillsides and ridges in these areas have slopes ranging from 15 – 30%, and some are 30+%. Elevations are varied in the county with Mt. Tamalpais listed at 2,574 feet above sea level. Marin City and Point Reyes Station are approximately 20 feet above sea level, the San Geronimo Valley is 485 feet, and the Throckmorton Fire Station is at 1,160 feet above sea level. Correspondingly, there is considerable diversity in slope percentages. San Geronimo Valley slopes run from level (in the valley, itself) to near 70%. Mt. Barnabe has slopes that run from 20 to 70%. Throckmorton ridge has slopes from 40 – 80%.

**4. Fire History:** The predominant summer weather pattern includes a strong coastal influence with coastal low clouds and fog in the evening and morning hours, clearing to sunshine and mild temperatures in the afternoon. During the late summer and early fall season, winds are usually light to moderate from the northwest. However when Diablo, (foehn) wind events occur in the late summer early fall, there is high potential for large, wind driven fires should there be an ignition. Under these conditions, fire operations are limited by high fire intensities and extreme fire behavior conditions, combined with extensive ember production with long-range spotting and high rates of spread fire fighting resources will likely quickly overwhelm with direct attack. Indirect attack utilizing strategically located fuel breaks, roads and ridge tops is likely the more effective containment strategy under these conditions. Historically the largest and most destructive fires have occurred during these Diablo wind events. The Angel Island Fire (in October of 2008) consumed over 300 acres and threatened numerous historic structures and facilities. The most recent Marin County fire with significant structure loss was the Vision Fire of 1995, which destroyed 48 structures in the community of Inverness. The base of Mt Tamalpais, specifically the community of Mill Valley, experienced a significant fire loss in 1929. That fire's footprint is now developed with more than 2,000 homes which have significantly altered the natural vegetation thru urban and suburban development. Refer to Fire Prevention section for fire statistics.

**5. California Forest and Rangeland Priority Landscapes:** The 2010 California's Forest and Rangelands assessment identifies the Bay/Delta in several priority landscape analyses:

1.1 Population Growth and Development Impacts – Bay/ Delta had the highest proportion of at risk acres on annual grassland, coastal oak woodland, montane hardwood and redwood.

1.2 Sustainable working forest and rangelands – Risk reduction on Rangelands – Bay/Delta was identified as having priority landscapes where range productivity is threatened by wildfire.

2.3 Forest Pest and other threats to Ecosystem Health and Community Safety – Marin County has the 4<sup>th</sup> highest number of impacted acres by county. 98% of the high priority acres in (Bay/Delta and So Coast) are in the zone of infestation for sudden oak death.

3.3 Planning for and Reducing Wildfire Risks to Communities – Bay/Delta area has 67 communities with CWPPs or have been certified as a Firewise community and suggest the presence of community planning resources and experience.

3.6 Green Infrastructure for Connecting People to the Natural Environment – managing green infrastructure. The Bay/Delta area has large acreages of medium priority landscapes, which are typically high value areas at medium threat or medium values at a high threat.

3.7 Climate Change Threats and Opportunities – threats to forest carbon loss due to wildfire, insects and disease. Year 2020 projections show all bioregions high priority landscapes thru 2050. Threats to forest carbon from development show the greatest threat to loss of terrestrial carbon (forest and range) from development in the Bay Area.

**Forests and Rangeland Resource Strategies:**

1. Conserve Working Forest and Range Landscape

1.1.1 Reduce urban sprawl, strengthen planning at the local level, and improve access to tools and data sources.

2. Protect Forests and Rangelands from Harm

2.1.2 Protect life and property from wildfire through efficient and effective fire protection planning and suppression, financial management and firefighter/public safety strategies.

3. Enhance Public Benefits from Trees, Forests and Rangelands

3.3.1 Promote formation of local Fire Safe Councils for priority communities

3.3.2 Promote National Firewise/USA program

**6. 2015 Unit Priorities:** At the statewide level, wildland fire planning is more than just a focus on treating hazardous fuels – it is about the whole system of wildland fire planning and thinking about where and how people live and coexist within wildfire prone environments. The Strategic Fire Plan looks at wildland fire planning from an integrated approach by focusing on stakeholders, assets at risk, governmental services and jurisdiction, and as well as both the fire prevention and suppression efforts. The integrated concepts framing the goals of the Strategic Fire Plan are: 1) improve the availability and use of information on hazard and risk assessment, 2) engage in land use planning, 3) develop shared vision and planning at the local/community level, 4) improve fire resistance and survivability for the “assets at risk” – such as homes and neighborhoods, 5) develop shared vision with all levels of fire protection jurisdictions and landowners, in terms of fuels management activities and practices, 6) determine the appropriate level of fire suppression service and related services, and 7) provide for post fire recovery. Each

goal is intend to build upon the previous one, yet can be implemented simultaneously or independently.

To integrate both local and statewide level planning key department personnel with land management agency personnel, property owners and fire safe councils work collaboratively to coordinate efforts and projects that best serve the needs of the public for wildland fire protection. Specific priorities:

- Update and prioritize countywide community wildfire protection planning efforts through coordination and collaboration with community leaders, county fire chiefs, county resource and watershed managers, federal, state and local partners and FIRESafe Marin.
  - Refresh fire hazard data,
  - Collaborate on a project prioritization process
  - Consolidate and organize countywide fire and vegetation data
- Increase follow up and education for priority community PRC 4291 defensible space inspections thru hiring seasonal inspectors.
- Formalize department environmental compliance processes.
- Document and formalize maintenance plan for priority fire roads countywide.
- Implement new Computer Aided Dispatch (CAD) system to improve response coordination with fire agencies and neighboring units.
- Implement a new Emergency Reporting System.
- Augment wildland fire staffing for increased/early season initial attack capability in response to long term drought conditions.

## **B: UNIT PREPAREDNESS AND FIREFIGHTING CAPABILITIES**

The Marin County Fire Department is an all risk agency that provides a full range of emergency response services including Emergency Medical Services (EMS), Urban Search and Rescue (US&R) and water rescue teams, structural and wildland fire protection, fire prevention, public education, and hazardous material discharge response. As one of six contract counties with the State of California, the department is responsible for the protection of 200,312 acres of State Responsibility Area (SRA) within the county. Furthermore, MCFD offers similar protection services to the 101,297 acres of the National Park Service's Golden Gate National Recreation Area, Muir Woods National Monument, and Point Reyes National Seashore. The Marin County Fire Department staffs an Emergency Command Center (ECC) that dispatches for Marin County Fire Department and local volunteer fire departments, coordinates wildland incidents within the SRA or FRA (Federal Responsibility Area), and acts as the County of Marin's Office of Emergency Services (OES) coordination center for fire dispatching.

**1. Facilities and Resources:** During peak wildland fire season preparedness, MCFD resources include:

### MCFD Resources

145 Personnel  
6 Fire Stations  
12 Engines

### City/District Resources

300 Personnel  
34 Fire Stations  
57 Engines

1 Transport/bulldozer	
3 Water Tenders	2 Water Tenders
1 14 person Tam Fire Crew	10 Ambulance/Medic Units
2 Ambulances/Medic Units	
4 Fire Detection Cameras	
2 Lookout Towers	

In addition to the above resources, the Tomales Volunteer Fire Company provides an additional 12 firefighters to MCFD's Tomales response zone, and there are twenty volunteer fire lookouts staffing MCFD's two fire lookouts as well as four fire detection system cameras. Marin County has personnel and equipment available to fill a variety of overhead for T1 and T2 IMTs, Crews, Type 3 Engine Strike Team and Task Force configurations for federal, state and OES requests. Finally, the Marin County Fire Department also participates in local and state mutual aid and auto aide agreements, and various contracts for service:

## **2. Memorandums of Understanding/Automatic Aid Agreements**

The Marin County Fire Department is one of six counties who contract with CAL FIRE that provides wildfire prevention and suppression services to state responsibility areas. In addition to this contract there is a well-organized local mutual aid system in Marin County based on the principles of resource sharing and cooperation, the goal of which is to provide the public with the highest level of service that no one agency is equipped to provide. These agreements include resources from all fire agencies, law enforcement, volunteer fire departments, Office of Emergency Services (OES), the National Parks Service (NPS), CALFIRE, and local landowners. When MCFD resources are drawn down to a minimum standard while providing assistance to other agencies through the mutual aid system or assistance by hire process, off-duty personnel and reserve equipment are used to maintain standard operational readiness in all of MCFD's responsibility zones.

The following is a list of the mutual aid agreements/plans in which MCFD participates:

- Mount Tamalpais Mutual Threat Zone Plan
- Marin Sonoma County Mutual Threat Zone Plan
- Marin County Mutual Aid Agreement
- County of Marin Urban Search and Rescue
- County of Marin Office of Emergency Services
- State of California Master Mutual Aid
- North Bay Incident Management Team

In addition, MCFD provides resources to local stakeholders through various agreements that do not include an annual revenue resource, but in some cases funds are recovered through an assistance-for-hire agreement.

- Marin Municipal Water District
- Skywalker Ranch Fire Brigade
- National Park Service
  - Point Reyes National Seashore

- Golden Gate National Recreation Area
- Muir Woods National Monument

The Marin County Fire Department has maintained an independent dispatch center since the 1930s. The Emergency Command Center (ECC) functions to receive, disseminate, and transmit information to field units. The ECC has the additional responsibility to act in a supervisory role for incidents prior to the arrival of field units. The ECC also acts as the central ordering point for all state resources that are committed to SRA incidents in Marin County. In addition to the state responsibility areas, the ECC acts as a central ordering point for Region II OES requests and OES coordination of local government resources entering or leaving the County of Marin operational area.

The ECC is staffed by one 24-hour dispatcher year round. Beginning in the spring each year, a dispatch clerk is hired to work 10 hour shifts, 7 days a week through the end of fire season (generally May 1 through October 31), supplementing the dispatcher. During complex emergencies the ECC utilizes a call back system to assist in up-staffing for large scale emergencies and has the ability to set up an expanded dispatch center when necessary. The ECC processes approximately 3,000 calls annually, and is also responsible for handling all business calls received by the department. In 2015, the ECC upgraded to a new Computer Aided Dispatch (CAD) system to improve response coordination with all units.

**SECTION II: COLLABORATION**

**A: COMMUNITY / AGENCIES / FIRE SAFE COUNCIL**

Organizations involved in the development of the Unit Strategic Fire Plan are included in the following table. Their organization and title are indicated below:

**Plan Development Contacts:**

<b>Organization</b>	<b>Title</b>
Marin County Board of Supervisors	Katie Rice, President, Board of Supervisors
Marin County Fire Department	Christie Neill, Vegetation Management Program
FIRESafe Marin	Michael Swezy, President
Marin County Fire Chiefs' Association	Jason Weber, President
National Park Service	Jordan Reeser, Fire Management Officer
Marin Municipal Water District	Michael Swezy, Watershed Resource Manager
Marin County Parks & Open Space District	Mischon Martin, Chief Natural Resources & Science
California State Parks	Danita Rodriquez, Park Superintendent

## **B: VEGETATION MANAGEMENT PLANS FOR PUBLIC LAND MANAGEMENT AGENCIES**

Marin County land management agencies are taking concrete steps to reducing fire hazard as directed by their management and planning documents. Their planning is driven by goals to protect natural habitat and special species status. Although the strategies to manage invasive species in fuel break/reduction areas are sometimes controversial, the limitations of the respective strategies being discussed tend to challenge achieving both habitat protection and fire hazard reduction goals if all the available tools to managing vegetation are not available. Emphasis during fuel treatment planning will need to consider how to minimize the introduction, spread and removal of invasive species.

**Marin Municipal Water District** – currently operates under the Mt. Tamalpais Area Vegetation Management Plan / EIR 1995 (this EIR includes Marin County Open Space lands in Southern Marin). Their Wildfire Protection and Habitat Improvement Plan Draft EIR is in preparation.

**Marin County Parks** - is drafting a Vegetation and Biodiversity Management Plan (VBMP) to direct resource management efforts on the County's 34 preserves for the purposes of maintaining and increasing biodiversity, while reducing the risk of wildfire. Marin County Parks has more than 3000 parcels adjacent to its preserves, and this in turn leads to a great deal of effort working with neighbors to resolve disputes over responsibility for fuel reduction and defensible space.

**CA State Parks** - State Parks reviews all proposed fuel breaks/vegetation modification zones for environmental impacts. The impacts of greatest concern are the spread and proliferation of invasive species and the cost of invasive management in the fuel reduction zones, fragmentation of suitable habitat for native species, impacts to listed and special status species, and sediment issues associated with an increase in bare soil. In lieu of installing fuel breaks the State Parks work with MCFD on vegetation modification zones, to reduce the fire hazard. Vegetation modification areas have been completed to State Parks specifications to meet the goals of fuel reduction while minimizing environmental impacts. Due to the minimal increase in invasive plant infestations in the locations where vegetation modification has been employed State Parks treats many fuel modification zones for invasive species.

**National Park Service** – National Park Service works under the guidance of their Fire Management Plan (FMP) which has gone thru the federal environmental compliance process. The FMP's priority is to increase the reduction of hazardous fuels in high priority areas using prescribed fire and mechanical treatments (e.g. along road corridors, around structures and in strategic areas to create fuel breaks).

**FIREsafe Marin (FSM)**– While not a public land management agency, works closely to collaborate with all agencies. FSM receives significant investments thru a CAL FIRE SRA Grants, PG&E Grants and other State and Federal entities.

## **SECTION III: VALUES**

### **A: Values**

Values at risk are important resources that can be damaged or destroyed by wildland fire. In addition to providing a framework for protecting citizens and providing for firefighter safety, the California Fire Plan identifies the following assets warranting consideration in pre-fire planning: watersheds and water, wildlife, habitat, special status plants and animals, scenic- cultural and historic areas, recreation, rangeland, structures, infrastructure and air quality.

The Marin Municipal Water District is the oldest private water purveyor in the State of California. The Mt. Tamalpais watershed, feeding a system of five reservoirs, supplies central and southern Marin County with 75% of their fresh water. Given the area's seasonal rainfall, any major wildfire impacting the heavily forested watershed will result in major silting and subsequent degradation of water quality in the watershed.

This watershed—as well as lands managed by Marin County Parks , State Parks, and the National Park Service—are largely contiguous. They harbor several endangered, threatened, and special-status species. Two prominent species are coho salmon and northern spotted owl. The area is also part of a major migrating bird flyway and nesting area.

Marin County is also a major tourist destination. Major parks within Marin County include California State Parks (Mt. Tamalpais, Samuel P. Taylor and China Camp) and the National Park Service's Golden Gate National Recreation Area (GGRNA), Muir Woods National Monument, and Point Reyes National Seashore. The Point Reyes National Seashore and Muir woods National Monument together attract 3.5 million visitors annually. The large majority of GGNRA resides within Marin County, the and the GGNRA attracts an additional 14.5 million visitors per year. A major wildfire affecting any of these state and national parks could have negative impacts on the local economy for years after the event.

Marin County's agricultural land base includes nearly 137,000 acres of privately owned agriculturally zoned land and 32,000 acres of federally-owned land that is leased to agricultural operators. Types of agricultural operations include cow/calf, dairy, sheep, row crops, grapes, hay/silage, tree crops, poultry/eggs, aquaculture, cut flowers, and nursery crops. The gross value of all agricultural production was \$80.4 million in 2012.

Finally, there are 106,235 living units in the County with an assessed value of over \$59.3 billion. A major wildland fire results in the loss of many homes, it could have a short-term negative impact on Marin County's property tax base

## **B: Communities**

To help protect people and property from potential catastrophic wildfire, the National Fire Plan allocated funding for projects designed to reduce the fire risks to communities. A fundamental step in achieving this goal was the identification of communities that are at high risk of damage from wildfire. With California's extensive Wildland-Urban Interface situation, the list of communities extends beyond just those adjacent to Federal lands. There are 1,287 communities currently on the California Communities at Risk List. Marin County has 23 communities at risk that are tabulated below.

<b>Community</b>	<b>California At-Risk</b>	<b>Federal Threat</b>	<b>Federally Regulated</b>
Bolinas	√	√	√
Corte Madera	√		
Fairfax	√		
Inverness	√	√	√
Inverness Park	√	√	
Kentfield	√		√
Lagunitas-Forest Knolls	√	√	√
Larkspur	√	√	
Lucas Valley-Marinwood	√		
Marin City	√	√	√
Mill Valley	√	√	√
Novato	√		
Olema	√	√	√
Ross	√		
San Anselmo	√		
San Rafael	√		
Santa Venetia	√		
Sausalito	√	√	√
Stinson Beach	√	√	√
Strawberry	√		√
Tamalpais-Homestead Valley	√	√	√
Tiburon	√		
Woodacre	√		

#### **SECTION IV: PRE-FIRE MANAGEMENT STRATEGIES**

##### **A: Fire Prevention**

An analysis of MCFD's ignitions for the past years (2003-2014) indicates that MCFD experiences on average approximately 25 structure fires per year.

The last 10 years of wildfire fire statistics (2005-2014) shows MCFD responds to an average of approximately 80 vegetation fires per year. Of the vegetation fires, prevalent identifiable causes include tree branches contacting power lines (or some other power line

associated failure) and fires caused by mechanical equipment (hot work, cutting, and agricultural equipment). A majority of these fires have been classified as undetermined/unknown due to the absence of identifiable ignition mechanisms.

**Average Wildfire Statistics by Cause: 2005-2014**

Wildfires	Acreage ac/year	Unk #/acres	Camp Fires #/acres	Debris #/acres	Equip Use #/acres	Vehicle #/acres	Electrical power #/acres	Misc #/acres
<b>80/year</b>	<b>114 ac</b>	<b>24/74</b>	<b>6/4</b>	<b>7 /1</b>	<b>4/11</b>	<b>8 /4</b>	<b>13/23</b>	<b>12/8</b>

The Fire Prevention Bureau is staffed with three and half full-time personnel, the Fire Marshal, VMP Battalion Chief, Tam Fire Crew Superintendent, one part time inspector and three seasonal defensible space inspectors. The Fire Marshal/Battalion Chief is responsible for managing all of MCFD’s business inspection programs, land development plan reviews and construction inspections, all fire alarm and suppression system plan reviews, fire investigations, inspections of Hazardous and Assembly occupancies, reviews Vegetation Management Plans (a requirement for all new construction and substantial remodels in the WUI), as well as code and standard development. t and reviews Vegetation Management Plans (a requirement for all new construction and substantial remodels in the WUI).

The VMP Battalion Chief is responsible for Unit Fire Plan, CWPP coordination, MCFD’s engine company residential defensible space inspections and seasonal inspectors. In addition to determining where and how to implement vegetation and hazardous fuels management projects, working with resource specialists on compliance, coordinating MCFD resources involvement on cooperative projects.

Projects are developed per the Community Wildfire Protection Plan (CWPP). MCFD uses a variety of methods to mitigate the accumulation of vegetation due to decades of fire suppression, including construction of fuel breaks and wide area fuel breaks (that involve thinning vegetation by cutting, chipping, clearing, pruning, and limbing the understory vegetation), improving fire roads and evacuation routes and developing fuel treatment and fire prescriptions.

In addition to the Bureau’s full-time personnel, the Bureau has retained the services of one to three Fire Inspector five days per week for the fire season. The Fire Inspector’s primary duties are to respond to homeowner defensible space inspection requests, follow up inspections and complaints.

As part of their effort to identify values-at-risk during the development of the CWPP, MCFD has identified their Wildland-Urban Interface Zone (WUI). In essence, this zone identifies communities adjacent to, and/or where wildland areas intermingle with structures and homes. Based on this analysis, MCFD determined there are 68,654 living units on 63,989 WUI parcels totaling 59,122 acres.

Since 2006, MCFD has approached the mitigation of this threat in two ways. One approach utilizes public education (mailers, movie theater “trailers”, newspaper opinion pieces,

public events and workshops), engine company defensible space inspections, as well as complaint driven Company Officer and Fire Marshal/Fire Inspector inspections. The purpose of these activities is two-fold; to raise the level of public awareness of the wildland fire threat, and to increase and improve the defensible space around structures.

The other approach is hazardous fuel modification. These include wide area defensible space projects, ridge top fuel breaks, many of which constructed by the Marin County Fire Department's Tamalpais Fire Crew as well as other local resources. The location and extent of the breaks are determined thru coordination with the local land management agency and or landowner and by conformance with MCFD's CWPP, and the availability of grant and other types of funding. The budget for the Tamalpais Fire Crew is funded (from the Marin County General Fund) by the County Board of Supervisors. Funding is also provided by our stakeholders and partners through project cost sharing.

## **1. Engineering & Structure Ignitability**

Findings from the National Institute of Standards and Technology (NIST) website that are relevant to MCFD's approach to mitigating structure ignitability includes findings that defensive actions by homeowners significantly affected fire behavior and structure survivability, and effective fire prevention practices are essential in reducing losses.

The California Building Code (CBC), Chapter 7A specifically, addresses the wildland fire threat to structures by essentially requiring the fire hardening of structures located in state or locally designated WUI areas. However, the requirements promulgated by the state only apply to new construction, and do not address existing structures or remodels and additions to existing structures.

Since most of the towns and cities in Marin are "built-out", MCFD has applied these standards to address home ignitability in both new and existing construction. Specifically, MCFD has extensively amended the 2003 International Urban-Wildland Interface Code. As part of these amendments, MCFD applies more stringent building standards, vegetation management (requiring the preparation of a Vegetation Management Plan, per MCFD's VMP Standard), fire apparatus access and water supply requirements to new structures and structures substantially remodeled, located in the WUI.

Included in the aforementioned amendments, MCFD requires structures in the WUI that are being remodeled or altered to comply with a standard specifically developed to require those specific building elements affected by the alterations to be "WUI" compliant. For example, if a window is replaced, the new window is required to be dual-paned with one pane tempered.

Furthermore, MCFD has amended the 2013 CFC Chapter 49 requirements for defensible space around existing homes (whose un-amended requirements are identical to the Public Resource Code and Government Code requirements). The MCFD amended version modifies the language of PRC 4291 such that the property line no longer limits the amount of defensible space required around structures. If the 100 foot defensible space/fuel modification zone intersects from private to

public lands, fuel modification/clearance may be permitted after evaluation and obtaining a permit from the public land management agency.

- ✓ **Defensible Space Mailer-** MCFD sends its mailer with a PRC 4291 checklist to approximately 8300 residents within MCFD's SRA. The checklist consists of defensible space requirements to be completed by the property owner by the start of fire season. The mailer also includes MCFD's modified CAL FIRE Defensible Space flyer, and offers the homeowner a free-of-charge consultation by fire personnel from their local fire station.
- ✓ **4291 Blitz** – For the 2015 Fire Season and in conjunction with MCFD's Defensible Space/4291 flyer mentioned above, MCFD is assigning its seasonal firefighters, in conjunction with MCFD's on-duty/full-time personnel to go door-to-door in each station's response zone's target hazard areas. While at each residence, the firefighters would make contact with the occupant/homeowner, conduct a vegetation management/defensible space inspection, and offer tips and suggestions on how to comply with the regulations. If the homeowner is not present or unavailable/unwilling to participate in the inspection, a door-hanger is left at the residence explaining the compliance regulation process and the areas where the residence falls short of the requirements. The inspections are also being followed up with subsequent re-inspections by fire inspector or permanent fire personnel. With this effort, MCFD can inspect over 1,600 residences in one weekend.
- ✓ **Defensible Space Inspectors** – MCFD hires 3 seasonal firefighters to perform follow up and new defensible space inspections from MCFD 4291 Blitz. They will focus on priority communities from June thru late September.

## **2. Information & Education**

The information and education programs administered by MCFD are coordinated efforts supported by our command staff, the Fire Prevention Bureau, each of our fire stations' personnel, and our cooperators. These cooperators include the Marin County Sheriff's Office, Marin County OES, FIRESafe Marin, the Marin County Fire Chiefs' Association, the National Park Service, Marin Municipal Water District and Marin County Parks.

### **Information**

During emergency events, the public information function is covered 24 hours per day by Incident Command System (ICS) qualified Public Information Officers (PIO's) and by MCFD's Emergency Command Center personnel. The overall goal of this function is to keep our constituents, the people of Marin County, informed by providing timely and accurate information to the varied media market in the northern Bay Area. In addition, MCFD is in constant contact with CAL FIRE's Duty Chief regarding fire condition updates and ensures all local dignitaries are regularly briefed with changes or updates.

MCFD's command staff regularly provides press releases, and interviews to media outlets on request. In addition, the County of Marin has retained a County Public Information Officer who is regularly utilized to support MCFD's public information outreach efforts. As an adjunct to these activities, the Fire Marshal and EMS

Battalion Chief serve as MCFD's representatives on the county Public Information Team (PIT). This group meets once per month and provides a forum for each department to get their respective messages out to other departments and the public. The PIT enables the county government to have uniformity in the various departments' messages, training, and opportunities to craft department specific informational programs to include social media such as Facebook, Twitter and Next Door.

## **Education**

Annually, thousands of Marin County residents attend community events, such as MCFD's Fire Station pancake breakfasts, community fairs where MCFD and/or FIRESafe Marin sponsor exhibits, CPR, CERT, "Ready, Set, Go!", and "Get-Ready" classes, and school programs. Presentations include disaster and wildfire event preparedness, home safety, fire safety, defensible space, and vegetation management.

MCFD, along with many of our cooperators and corporate sponsors produced a defensible space and wildland fire preparedness video. The video, "Marin on Fire" has several 5-minute chapters, covering access, defensible space, making your home ignition resistant, and tips on what to do if a wildfire is approaching your house. MCFD has also released a 5-minute video whose subject is the few simple things a homeowner can do to increase their home's chances of survival during a wildfire event. MCFD's web site also has extensive public education links to CALFIRE wildfire preparedness literature, as well as the Marin County Fire Chief's Association "Ready-Set-Go" site.

Department Fire Chiefs are frequent contributors to the local newspaper, as well. They have both written editorial columns on various aspects of fire safety and disaster preparedness, including such topics as winter/holiday home fire safety, and wildfire preparedness.

MCFD strives to make their wildfire and defensible space safety messages consistent with those promulgated by CAL FIRE. As part of this effort, MCFD posts CAL FIRE's defensible space flyers and handouts on their website, and has these brochures available at each of our fire stations' lobbies. MCFD also annually (prior to fire-season) sends out a mailer to every property owner in Marin County's SRA. The mailer contains a check-list of MCFD's defensible space and maintenance requirements (per PRC 4291), to be completed by the property owner by the start of fire season. The mailer also includes MCFD's modified CAL FIRE Defensible Space flyer, and offers the homeowner a free-of-charge consultation by fire personnel from their local fires station.

## **B: Vegetation Management**

Marin County land management agencies are talking concrete steps to reducing fire hazard as directed by their management and planning documents. Their planning is driven by goals to protect natural habitats and special species status. Although the strategies to manage invasive species in fuel reduction areas are sometimes controversial, the

limitations tend to challenge achieving both habitat protection and fire hazard reduction goals if all the available tools to managing vegetation are not available. Emphasis during fuel treatment planning will need to consider how to minimize the introduction, spread and removal of invasive species.

While policy is aggressive initial and extended attack of all vegetation fires it is recognized that continuing to suppress all vegetation fires is progressively contributing to more dense vegetation and the potential for future extreme fire events that threaten the firefighter and public safety. The mitigation to reduce fuel accumulations should be on going although difficult on a large scale and usually a priority to be applied near structures. Prescribed burning is used to reduce fuel loads in less populated areas, although many constraints including air quality keep acres treated annually fairly low.

Marin County Resource Management Staff administers the following programs that support the Strategic Fire Plan.

- ✓ **Vegetation Management Program (VMP)** – The Vegetation Management Program (VMP) is a cost-share program that applies prescribed fire and mechanical treatments to reduce wildland fire fuel hazards and address other resource management issues within State Responsibility Area (SRA) lands. Use of prescribed fire mimics ' fire's impacts as a natural process, restores fire to its historic role in wildland ecosystems, and provides significant fire-hazard-reduction benefits that improve public and firefighter safety.
- ✓ **Grant-Funded Fuel Treatments** – These projects include a variety of fuel modification techniques that are intended to, reduce the intensity of fire spread, allowing for safe ingress, egress, defensible space and fire containment. Removal of stands of nonnative trees such as eucalyptus and pines that can burn intensely and a high potential for ember production/fire spotting are also used to mitigate fire hazards in strategic areas identified thru Unit Fire Plan and Marin County CWPP.
- ✓ **Tamalpais Fire Crew** – The Marin County Board of Supervisors base funds and cost shares through grants and stakeholder contributions to support a 14-person fire crew that implements fire hazard reduction projects and fire suppression activities during and after a wildfire incident.
- ✓ **Green Waste Days** – MCFD in partnership with County Board of Supervisors, West Marin Compost and FIRESafe Marin sponsor free green waste days to support disposal of vegetation created from homeowners' defensible space. The County pays the West Marin Compost and seasonal workers to track and receive compost two weekends in June and July.
- ✓ **Community Wildfire Protection Plan (CWPP)** - In collaboration with FIRESafe Marin will revise and update Countywide CWPP thru an CAL FIRE SRA Grant. The need for a comprehensive planning document to serve as an integrated approach to wildland fire mitigation planning has been identified and the updated CWPP will serve this need. The updated CWPP will provide a framework for identifying and prioritizing areas needing treatment.

## **SECTION V: PRE FIRE MANAGEMENT TACTICS**

### **A. Battalion / Program Plans**

#### **Training**

The department training mission is to support emergency incidents with a competent, safe and effective workforce. The MCFD training program is designed to train department personnel in "All Risk" emergency operations. Department trainees are typically sent to CAL FIRE Northern Region Training and the California Fire Academy in Lone for their course work. In addition, MCFD provides numerous personnel to the Federal and CALFIRE Training Cadres, Fed and State IMT's, and new program development. MCFD is a CICC member agency and adheres to CICC standards and provides representation on the CICC 400 level peer review committee. The department administers a seasonal fire program that mirrors the training standards of CAL FIRE.

MCFD is the lead training agency in the county while providing much of the wildland and All Risk training. Marin County Fire Department runs the Woodacre ECC. Woodacre is the single ordering point for all major incidents and is the OES Operational area coordinator.

Marin County Fire Department is the sponsoring agency of the county's multi agency US&R task force and provides the critical training elements for the team.

#### **Wildland-Urban Interface Situation**

Marin County includes densely populated urban cities and towns along the eastern Highway 101 corridor from the Golden Gate Bridge northward to Novato. Geographically, Marin is a large, southeast-trending peninsula, with the Pacific Ocean to the west, San Pablo Bay and San Francisco Bay to the east, and across the Golden Gate, the city of San Francisco to the south. Marin County borders Sonoma County to the north. Elevation ranges from sea level to the peak of Mount Tamalpais at 2,574 feet. Unincorporated rural areas within the County include coastal communities (Muir Beach, Stinson Beach, and Bolinas), communities near Tomales Bay (Olema, Point Reyes Station, Inverness, Inverness Park, Marshall, Tomales, and Dillon Beach), and rural area in the interior valleys (Nicasio, Lagunitas, Forest Knolls, San Geronimo, and Woodacre).

The communities are primarily situated within or adjacent to the Wildland-Urban Interface, with dense to moderate concentrations of structures. Marin County has 200,000 acres of watershed with significant WUI concerns. Response times present significant challenges to keeping fires from directly impacting communities and sub-divisions. Emergency fire access to most Marin communities (especially those within SRA) is limited by narrow, winding roads lined with dense vegetation. Evacuation maps have been developed by the Marin County Sheriff's Office of Emergency Services, the Marin County Fire Department and local police and fire agencies.

#### **Fuels and Weather**

Plant communities in Marin County are generally defined by the northwest-trending ridges that pass through the County, where non-native annual dominated grasslands and chaparral are common on south-facing aspects and mixed evergreen or mixed evergreen deciduous forest dominates the north-facing slopes and valleys mixed with urban

development. Grassland types include coastal prairie and valley grassland; shrub land types include chamise chaparral, manzanita chaparral, mixed chaparral, coyote brush scrub, and coastal sage-coyote bush shrub; forestland types include coast live oak-California bay-madrone forest, tan oak-madrone-coast live oak-Douglas fir forest, Douglas-fir Forest, coast redwood forest, Bishop pine forest, eucalyptus forest, Monterey pine forest and oak woodland/savannah.

Livestock grazing in western Marin generally keeps grasslands short. After centuries of native fire use and rangeland grazing that converted extensive areas of forests, woodlands, and chaparral to grasslands, the removal of these repeated disturbances and practices has led to an increase in woody species in some areas, especially those under some type of conservation protection. In addition, there are many areas in Marin County that now have a relatively higher fire hazard and associated fire control problem owing to vegetation and fuels accumulation due to decades of successful fire suppression.

Since the arrival of Sudden Oak Death to the county in 1995, there has been significant mortality of susceptible species that has contributed to the dead and down fuel accumulation. Additionally, fuel hazards are the highest in areas with mixed urban development combined with eucalyptus, bishop pine and large areas of continuous chaparral on and adjacent to public lands.

Worse case fire weather is typically associated with dry north/northeast winds in the late summer and fall months when live and dead fuel moistures are at critically low levels. The summer weather pattern is typically dominated by the marine influence; fog is common in the early mornings moves inland with high pressure systems. While the weather conditions do influence fires in Marin County most fires are fuel driven with the areas of continuous chaparral brush and large pockets of dead and down oak mortality and the occurrence of fire prone stands of eucalyptus.

### **Battalion/County Priorities**

MCFD has only one Battalion for the County. Priority program of work includes:

- Unit will provide early season staffing for two T3 wildland engines, dozer and swamper to increase initial response capability thru drought augmentation funding.
- Continue hosting community evacuation drills in the Fall and Winter encompassing many MCFD's West Marin communities. The drills emphasize programs such as "READY SET GO", Community Emergency Response Team (CERT) and Get Ready Marin.
- Continued implementation of a strategic countywide fuel reduction program focused on protection of communities and high value infrastructure in cooperation with Marin County land managers.
- Seasonal defensible space inspectors will be hired to work in priority communities.
- MCFD provides Green Waste Days and Chipper Day grants funded to assist communities with defensible space waste disposal and site specific community vegetation management planning assistance thru FIRESafe Marin.
- MCFD is identifying priority fire roads for future ongoing maintenance with private landowners, the water district and county parks.

- Continued interagency approach to outreach and training on Firewise and Fire Adapted Communities in cooperation with FIRESafe Marin and local fire jurisdictions.
- MCFD is implementing the 2015 Marin County Coastal Response Plan. This plan emphasizes coordinated response, resource ordering and communication protocols for initial and extended water rescue operations with cooperators and responders.
- Implement and train county wide Emergency Reporting System.
- MCFD is leading the countywide implementation of Intergraph CAD and mapping system in fall 2015.
- MCFD leads the coordinated mutual aid response and training with 13 other fire jurisdictions.
- Continued leadership in Marin County Interagency Rope Rescue Group with local fire, NPS, State Parks and Marin Municipal Water District. County leads and coordinates 12 sessions on trail, high and low angle rescue training.

## APPENDIX A: IDENTIFIED PRE-FIRE PROJECTS

Agency & Project Name	SRA Threat LRA	Project Type	Status	Year Complete	Net Acres
TAM Community Service District	MRN	D Space	P	2015	2
MMWD BILL WILLIAMS FB	MRN	Fuel Break	M	2015	4
MMWD DEER PARK RD	MRN	Road Maint	M	2015	9
MMWD KNOB I	MRN	Fuel Break	M	2015	48
MMWD KNOB II	MRN	Fuel Break	M	2015	28
MMWD LAGUNITAS ROCK SPRING BREAK	MRN	Fuel Break	M	2015	12
MMWD LOWER RAILROAD GRADE	MRN	Fuel Break	P	2015	18
MMWD NATALIE COFFIN GREENE DIBBLEE	MRN	Fuel Break	M	2015	8
MMWD PETERS DAM AND DSPACE	MRN	D space	M	2015	10
MMWD PHOENIX DAM	MRN	Fuel Break	M	2015	2
PHOENIX LAKE ROAD FB	MRN	Fuel Break	M	2015	3
MMWD PINE MOUNTAIN FB	MRN	Fuel Break	M	2015	13
MMWD PINE MOUNTAIN SOUTH GATE	MRN	VMP Burn	p	2015	30
MMWD PORTEOUS FB	MRN	Fuel Break	P	2015	19
MMWD ROCK SPRING	MRN	VMP Burn	M	2015	37
MMWD ROSS RESERVOIR BREAK	MRN	Fuel Break	M	2015	17
MMWD SHAVER GRADE BREAK	MRN	Road Maint	M	2015	8
MMWD SKY OAKS HEADQUARTERS	MRN	D Space	M	2015	10
MMWD SKY OAKS MEADOW	MRN	VMP Burn	M	2015	47
MMWD WORN SPRING MIDDLE	MRN	Fuel Break	M	2015	16
MMWD WORN SPRING NORTH	MRN	Fuel Break	M	2015	11
MMWD Middle Peak Dspace	MRN	D space	P	2016	1
MCP CITY SAN RAF Scettrini 1&2	THRT	Fuel Break	O	2016	5
MCOSD Terra Linda/Sleepy Hollow Preserve	MRN	Defensible Space	A	2016	49
MCOSD King Mountain Phases 1 & 2	MRN	FB maintenance	0	2016	20
MCOSD Camino Alto Phase 1-5	MRN	Fuel Break	M	2018	70
MCOSD Hillside Fuel Break	MRN	Fuelbreak	C	2015	5
MCSOD Middle Summit Fire Road	MRN	FB Maint	M	2015	4
MCOSD Terra Linda Ridge	MRN	fb/ecu removal	P	2015	40
MCOSD Baltimore Cyn/Ridgecrest/Crown	MRN	FB maint	P	2015	31
MCOSD/MMWD/KNTFD-BWGulch/Indian FR	MRN	FB/Fire Road	P	2016	TBD
MCOSD Cascade Canyon Fuel Break	MRN	Fuel Break	P	2017	41
MCOSD/MCFD King Mountain Phase 2	MRN	Fuel Break	C	2015	14
MCOSD/MVFD Mill Valley Fuel Break	MRN	Fuel Break	A	2016	61

MCOSD Gary Giacomini Preserve	MRN	Defensible Space	P	2017	10
MCOSD Blithedale Ridge FB Area 1,2,3	MRN	FB maintenance	M	2015	15
MCOSD Corte Madera Ridge Fuel Break	MRN	FB maintenance	M	2015	6
MVFD/MCOSD Corte Madera Ridge Fuel Break	MRN	Fuel Break	A	2017	32
NVFD/MCOFD Sleepy Hollow Community Defense	MRN	Evac Route Plan	P	2015	TBD
NPS Smith Road Euc Thin	MRN	Thinning	P	2015	11
NPS Marin Drive Euc Thin	MRN	Thinning	P	2015	32
NPS Tam Valley WUI Fuel Reduction	MRN	Fuel Reduction	P	2015	27
NPS Inverness Ridge Mechanical FR	MRN	Mech fuel red	P	2015-2018	81
NPS Bolinas Ridge Thinning	MRN	Fuel Break	P	2015-2018	81
NPS Forest Wy WUI Fuel Reduction	MRN	Fuel Reduction	P	2016	5
NPS Lamintour Rx	MRN	Prescribed Fire	P	2016	128
NPS Mc Curdy Rx	MRN	Prescribed Fire	P	2016	127
NPS Strain Hill Rx	MRN	Prescribed Fire	P	2015	74
NPS Dogtown Rx	MRN	Prescribed Fire	P	2015	44
MCFD Shroyer Mtn FB	MRN	Fuel Break	O	2016	TBD
MCFD Triple C Ranch/Sleepy Hollow FB	MRN	Fuel Break	O	2016	TBD
MCFD Iron Spring Road Fuel Break	MRN	Fuel Break	A	2018	22
MCFD Throckmorton Fire Road	MRN	Fuel Break	M	2015	1
MCFD/NVFD Rancho Santa Margarita	MRN	Fire Rd/Dspace	P	2015	0
MCFD 4291 Inspections Inverness	MRN	D Space	P	2015	1
MCFD Priority Fire Road Maintenance	MRN	Fire Rd Maint.	P	2015	TBD
MCFD 4291 Inspections Woodacres/Lagunitas/Forest Kn	MRN	D space	P	2015	0
MCFD/Novato Burnt Ridge FB, Novato	MRN	Fuel Break	O	2015-2020	75
MCFD Skywalker Ranch	MRN	D Space	O		
MCFD Dickson Lookout	MRN	Pile Burn	C	2015	0.1
MCFD Green Waste Days – Nicasio	MRN	Disposal	P	2015	0
MCFD Countwide CWPP	MRN	Plan	P	2015-2016	0
MCFD Tam Lookout Dspace	MRN	D space	P	2016	TBD
KNTFD 4291 Inspections – Kent Woodland Estates	MRN	D Space	P	2015	0

<i>Status Guide:</i>					
<i>A= active</i>					
<i>P=planning</i>					
<i>C=complete</i>					
<i>O=ongoing</i>					
<i>m= maintenance</i>					

## APPENDIX B – UNIT GOALS AND OBJECTIVES

Following are the Marin County Fire Department six goals and objectives concerning implementation of the Strategic Fire Plan:

Goal 1: Improve wildland fire planning - Identify and evaluate wildland fire hazards and recognize life, property and natural resource assets at risk, including watershed, habitat, social and other values of functioning ecosystems.

Objective: Collect, analyze, and maintain hazard and resource data, leveraging MCFD’s GIS capabilities, as well as data resources maintained and collected by Marin Municipal Water District, National Park Service, and the Marin County Parks.

Goal 2: Articulate and promote the concept of land use planning as it relates to fire risk and individual landowner objectives and responsibilities.

Objective: Identify the minimum key elements necessary to achieve fire wise communities, and incorporate these elements into community outreach and education.

Goal 3: Support and participate in the collaborative development and implementation of wildland fire protection plans and other local, county and regional plans that address fire protection and landowner objectives.

Objectives: Develop a robust county fire plan by bringing together community-based groups, such as fire safe councils and affected fire and land management agencies. Create and support venues in which individual community members can be actively involved in FIRE safe councils, community emergency response teams, FIREWISE and other community-based efforts to develop readiness plans and educate landowners to mitigate the risks and effects of wildland fire. Work with our land-owner cooperators/partners, fire agencies, and community partners to begin development of an updated and revamped Community Wildfire Protection Plan (CWPP) near to the 20<sup>th</sup> anniversary of the Vision Fire.

Goal 4: Increase awareness, knowledge and actions implemented by individuals and communities to reduce human loss and property damage from wildland fires, such as defensible space and other fuels reduction activities, fire prevention and fire safe building standards.

Objective: Educate landowners, residents and business owners about the risks and their incumbent responsibilities of living in the wildland, including applicable regulations, prevention measures and preplanning activities, emphasizing personal responsibility.

Goal 5: Integrate fire and fuels management practices with landowner priorities and multiple jurisdictional efforts within local, state and federal responsibility areas.

Objective: Work to remove regulatory barriers that limit hazardous fuels reduction activities, while being respectful and consistent with MCFD's land manager partner's priorities and challenges.

Goal 6: Determine the level of fire suppression resources necessary to protect the values and assets at risk.

Objective: Initiate and maintain cooperative fire protection agreements with local, state and federal partners that value the importance of an integrated, cooperative, regional fire protection system and deliver efficient and cost effective emergency response capabilities beneficial to all stakeholders.

## APPENDIX C - CONTRACT COUNTY REPORTING REQUIREMENTS

<b>Date Required</b>	<b>Report</b>	<b>Responsibility</b>	<b>Comments</b>
Monthly 10th of each month	Fire Prevention & LE Inspections, violations, citations, education	Station Capts Roll Up Fire Marshal & VMP BC	Station data rolled into reporting table - <i>*AOP says 13<sup>th</sup> of each month</i> mail to Patricia.Nakasone@fire.ca.gov
Monthly	JAC Report	Training Officer	Target Solutions export to CPF
Monthly 15 <sup>th</sup> of each month	NFIRS Report	OPS BC – Bill Roberts	NFIRS Export
Bi-Monthly	VMP projects update	VMP BC	Projects also in CalMAPPER
January /Annual DPA review	SRA edits	Fire Chief	Protection area changes due to city annexation To Regional Pre Fire Coordinator
February 15 <sup>th</sup>	Fire perimeter & ignition data for Annual Fire Report from previous year	VMP BC	To FRAP
March 1	Northern Region Training Needs Assessment	Training Officer	To Northern Region TO
April 1	FRAP - Community Planning Data Maintenance	VMP BC	Requires collaboration with local Fire Depts, FIRESafe Marin and CWPP, HOAs.
April 20	CalMAPPER project data input	VMP BC	
May 1	Unit Fire Plan to Region	VMP BC	
May 15 <sup>th</sup>	Unit AOP Review	Fire Chief	AOP Appendices IA Resources Lost Recovery Rates Grey Book Stations Communication Resource Inv Capital Outlay
June 19	Unit Fire Plans to Sacramento HQ	VMP BC	
Quarterly Sept/Dec/Mar/June	Base Contract Billing Grey book	P Thomas	
120 days post incident control date	Billing invoices /ABH	P Thomas	
<b>Rev CN 4/14/15</b>			

## APPENDIX D: IGNITION MANAGEMENT PLAN

### State Responsibility Area Description

Marin County is a mosaic of urban and rural residential areas, agricultural lands, municipal watersheds, and public lands. Each of these areas presents a variety of ignition sources that threaten State Responsibility Areas

Our records management system (RMS) indicated that MCFD responded to 653 vegetation fires and 568 structure fires over the past 10 years. However, our records are incomplete when it comes to determining the cause of these fires. One of MCFD's goals for the coming year is to update its RMS to capture this data, and to determine the cause of a higher proportion of fire incidents.

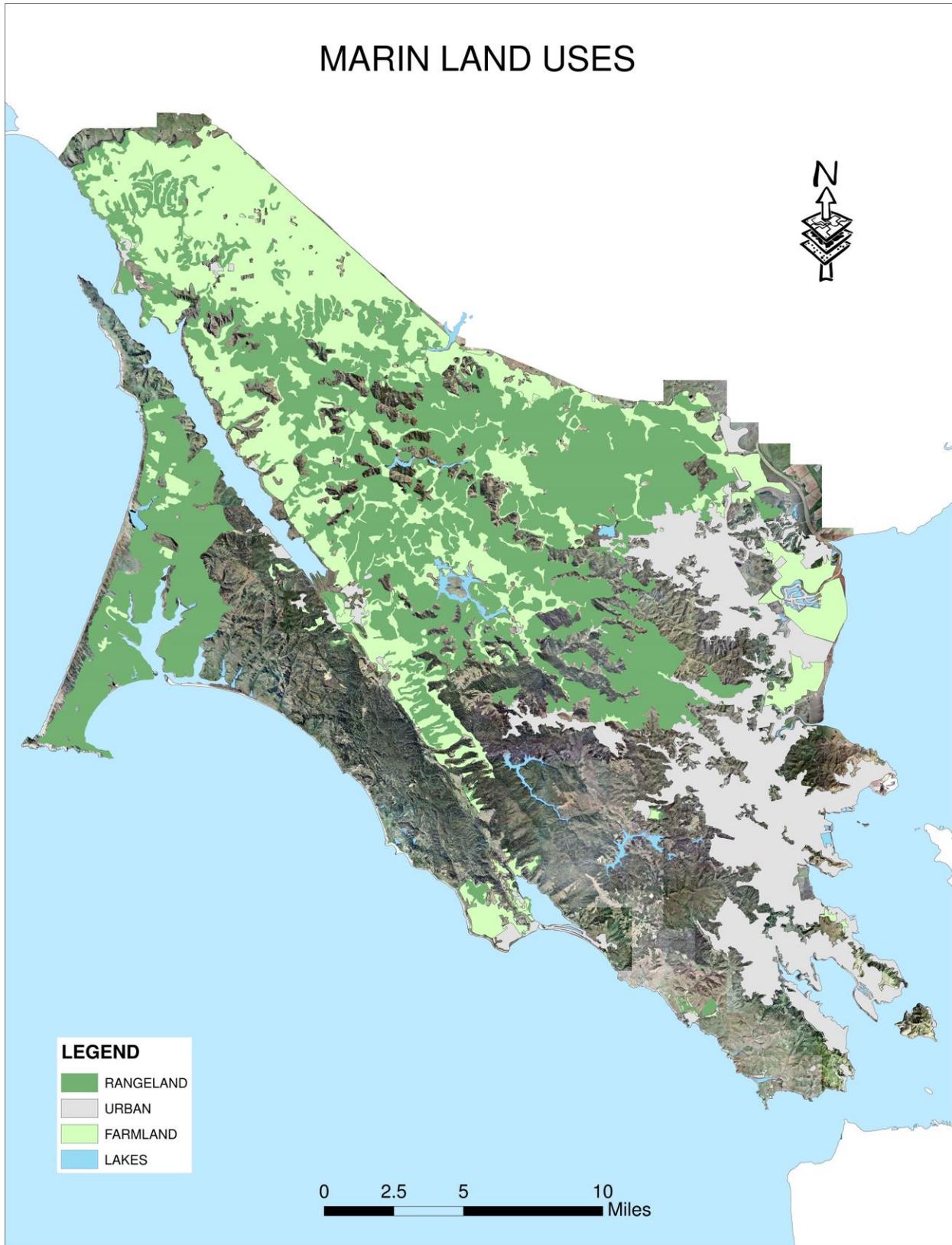
The California Legislature directed the Board of Forestry, the California Department of Forestry and Fire Protection, and contract counties including Marin to deliver a fire-protection system that provides an equal level of protection for lands of similar type (Public Resources Code §4130). To evaluate this standard, MCFD used an analysis process that defines a level of service rating that is applied to the wildland areas. The rating is expressed as the percentage of fires that are successfully extinguished with initial-attack resources.

The level of service rating provides a powerful tool for setting program priorities and defining program benefits. The level of service rating also provides a way to evaluate the contribution of various program components (fire prevention, fuels management, engineering and suppression) toward the goal of keeping damage and cost within acceptable limits.

During the past 5 years, (1/1/2009-12/31/2014) a total of 251 wildland fires occurred within the jurisdiction of the MCFD. Of these fires an identifiable cause was identified for 93 fires (37%). Equipment (18 fires, 7%), Power line (22 fires, 9%), and "misuse" of fire (11 fires, 4%) were the most common known/determined causes of fires. Fires ranged in size from small roadside spots to 159 acres, averaging less than 1.0 acre. Extended attack was required in all cases where fires burned more than 10 acres (9 fires); additional support in the form of a hand crew was also needed where fires burned in heavy fuels. Level of Service is calculated as follows:

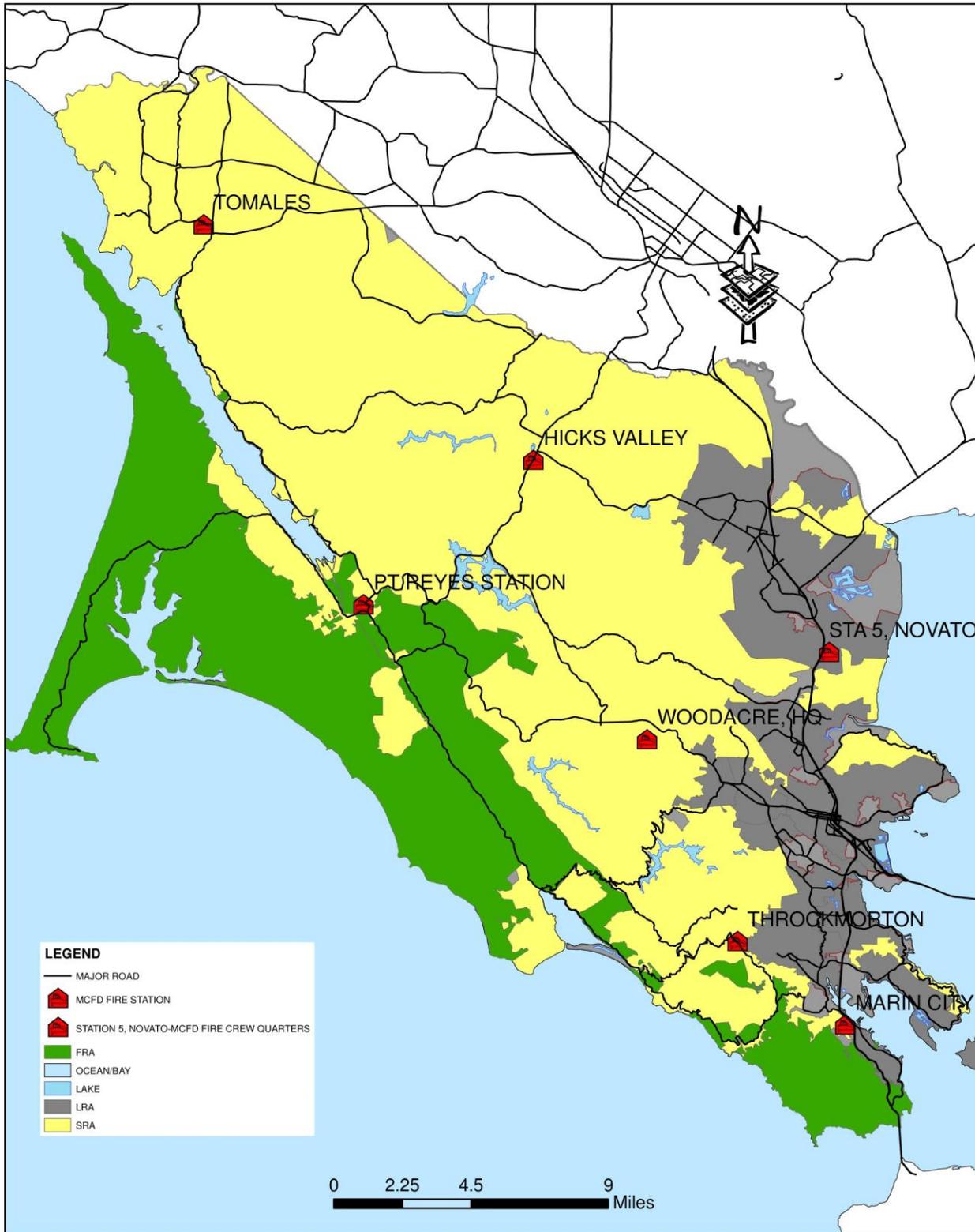
Fires Extinguished by Initial Attack	242
Total State Responsibility Area Fires	251
<b>Level of Service</b> = ----- x 100 =	<b>96%</b>

**EXHIBIT 1: MARIN LAND USES MAP**



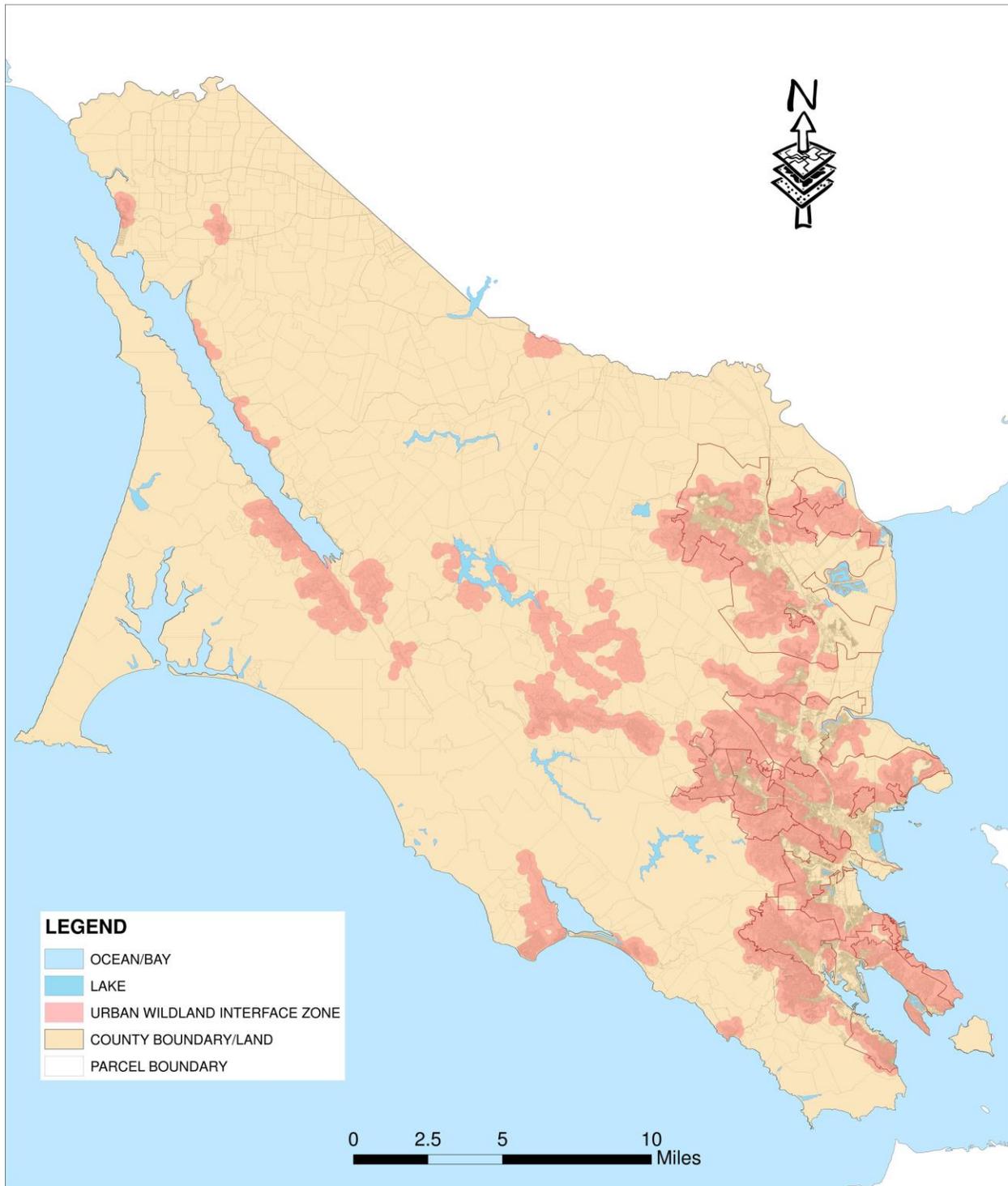
**EXHIBIT 2: CONTRACT COUNTY MAP**

**RESPONSIBILITY AREAS**



**EXHIBIT 3: WILDLAND URBAN INTERFACE MAP**

**WILDLAND URBAN INTERFACE**



## **SUPPLEMENT 1: 2015**

### **Annual Report of Unit Accomplishments**

The Marin County Fire Department accomplished the following in 2014-2015 in support of our Strategic Fire Plan:

1. Conducted 1,726 inspections during our 2014 §4291 Blitz and subsequent inspections in some of our highest hazard neighborhoods where 726 first-notice violations were issued. Incorporated checklist of building standards (roof type, window type, siding, etc.), as well as access description to more fully evaluate wildland fire safety.
2. Mailed over 7,000 Green Card Notifications (§4291 requirements) to residents (with return correspondence required) concerning implementation of defensible space requirements.
3. An evacuation exercise was completed in the Throckmorton service area.
4. MCFD accepted green waste two weekends (4 days) in Nicasio servicing all of West Marin
5. Held a wildland fire forum for the San Geronimo Community.
6. Assisted with and participated in a community evacuation exercises in Point Reyes.
7. Marin County Fire Chiefs and Fire Staff provided significant input into the development of MCOSSD's Vegetation Management and Biodiversity Plan.
8. Installed 4 fire detection cameras thru PG&E grant

### **Fuel Reduction Accomplishments - Tamalpias Fire Crew**

- King Mountain Open Space Preserve – Larkspur; 18 days of cutting and piling, 466 brush piles burned in 6 days.
- Burnt Ridge Fire Road - Novato – SRA; 9 days of cutting and piling, 196 brush piles burned in 3 days.
- Skywalker Ranch - Nicasio –SRA; 8 days of cutting and chipping, 40 brush piles burned.
- Limantour Road Shaded Fuel Break-Point Reyes National Seashore; 14 days of falling and chipping trees.

### **Ignition Summary**

An analysis of MCFD's ignitions for the past years (2003-2014) indicates that MCFD experiences on average approximately 25 structure fires per year. The last 10 years of wildfire fire statistics (2005-2014) shows MCFD responds to an average of approximately 80 vegetation fires per year. Of the vegetation fires, prevalent identifiable causes include tree branches contacting power lines (or some other power line associated failure) and fires caused by mechanical equipment (hot work, cutting, and agricultural equipment). A

majority of these fires have been classified as undetermined/unknown due to the absence of identifiable ignition mechanisms.

**Average Wildfire Statistics by Cause: 2005-2014**

Wildfires	Acreage ac/year	Unk #/acres	Camp Fires #/acres	Debris #/acres	Equip Use #/acres	Vehicle #/acres	Electrical power #/acres	Misc #/acres
<b>80/year</b>	<b>114 ac</b>	<b>24/74</b>	<b>6/4</b>	<b>7 /1</b>	<b>4/11</b>	<b>8 /4</b>	<b>13/23</b>	<b>12/8</b>