

# Appendix G4

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## Community Wildfire Protection Plan



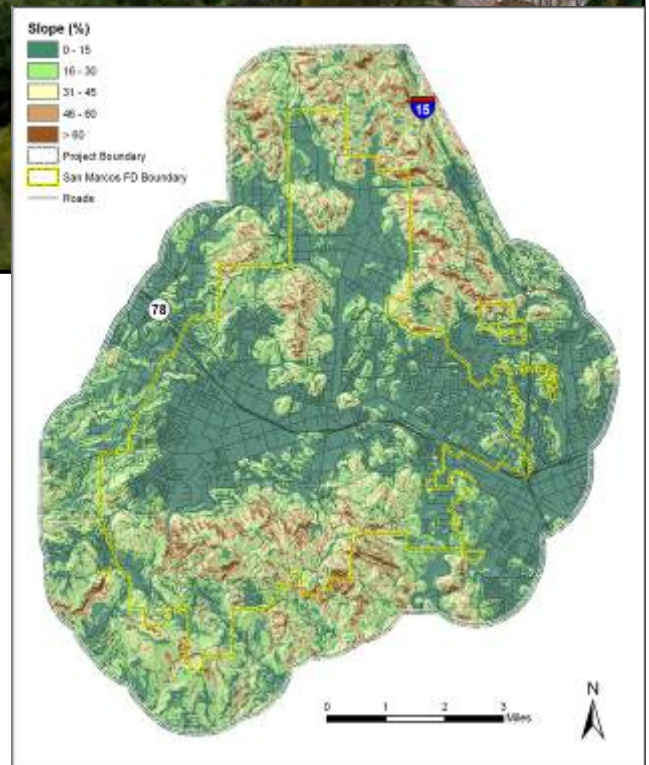
# San Marcos Fire Department

## *Wildland Urban Interface*

### *Community Wildfire Protection Plan*



December, 2007



## **Introduction**

This Community Wildfire Protection Plan (CWPP) was developed by the San Marcos Fire Department with guidance and support from the County of San Diego, California Department of Forestry and Fire Protection and the United States Forest Service. This CWPP supplements San Diego County, Department of Planning and Land Use documents referenced in Appendix A.

This document incorporates new and existing information relating to wildfire for citizens, policy makers, and public agencies in the City of San Marcos and the San Marcos Fire Department (SMFD) response area, San Marcos, CA.

The SMFD Community Wildfire Protection Plan (CWPP) is the result of a community-wide fire protection planning effort that included extensive field data gathering, compilation of existing fire suppression documents, and a scientific analysis of the fire behavior potential of the study area. This CWPP is the result of collaboration with various participants including homeowners, the San Marcos Fire Department (SMFD), and the California Department of Forestry (CDF). The plan was compiled in 2006 and 2007 to quantify, clarify and manage the wildland urban interface (WUI) responsibility.

This project meets the requirements of the federal Healthy Forests Restoration Act (HFRA) of 2003 for community fire planning by:

1. **Collaborating with stakeholders.**
2. **Identifying and prioritizing fuels reduction opportunities across the landscape.**
3. **Addressing structural ignitability.**

## SECTION I: COLLABORATION

### A: COMMUNITY / AGENCIES / FIRE SAFE COUNCILS

Representatives involved in the development of the San Marcos CWPP are included in the following table. Their organization, and roles and responsibilities are indicated below:

#### SAN MARCOS CWPP Development Team:

Name	Organization	Roles / Responsibilities
Todd Newman, Chief Matthew Ernau, Fire Marshal Scott Hansen, Battalion Chief	San Marcos Fire Department	Local information and expertise, including community risk and value assessment, development of community protection priorities, and establishment of fuels treatment project areas and methods.
Ralph Steinhoff, San Diego County Fire Service Coordinator	County of San Diego, Office of Emergency Services	Input and expertise on planning and hazard mitigation. Review of final document.
Robin Kinmont, Coordinator	FireSafe Council of San Diego County	Input and expertise on planning and hazard mitigation.
Lynnette Short, Forestry Assistant II	California Department of Forestry and Fire Protection (CDF) San Diego Ranger Unit	Input and expertise on forestry, fire and fuels, and FireWise concepts.
Chris White Project Manager	Anchor Point Group LLC Consultants	Development of HRA, decision-making, community risk and value assessment, development of community protection priorities, establishment of fuels treatment project areas and methods.

Phil Paige, Deputy Chief	Vista Fire Department	Local information and expertise, including community risk and value assessment.
Michael Scott, Urban Forester	Rancho Santa Fe Fire Department	Local information and expertise, including community risk and value assessment.
Frank Twohy, Chief	Elfin Forest / Harmony Grove Fire Department	Local information and expertise, including community risk and value assessment.
Various citizens representing San Marcos	San Marcos Residents	Local information and neighborhood concerns.

The true collaborative process was initiated with a meeting on March 27<sup>th</sup> and 28<sup>th</sup> 2006. The purpose of the initial meeting was to bring all past, current and future efforts and needs to the table. The group's primary focus was the identification and delineation of communities, areas of concern, and Values at Risk. Best practices and anticipated "roadblocks" were identified. The group was encouraged to use the fuels, slope, and aspect maps to help refine their areas of concern and recommendations for fuels reduction projects. This first meeting generated a rough area of interest map for future refinement. After this initial meeting, Anchor Point conducted its field surveys and data collection portion of the project. This process refined the fuel modeling and fire behavior analysis. Nineteen communities were delineated and analyzed for hazard and risk. Another meeting on March 27<sup>th</sup> and 28<sup>th</sup> was used to train fire district personnel on individual home assessments methodology. In addition to these meetings, a comprehensive survey was provided for fire department officers to better glean Values at Risk and recommendations for the analysis.

The San Marcos Fire Department completed 2,464 individual home assessments of homes located in neighborhoods rated very high, high and moderate at risk communities within their response area. Each homeowner was mailed a personalized home assessment for their property and invited to attend a public meeting to discuss the draft CWPP document. Public meetings were held on November 8 and 9, 2006 to provide citizens with individual home assessments and the draft CWPP project recommendations. Extensive advertising was employed to generate

public involvement. Comments and input resulting from these meetings were incorporated into the CWPP draft document released to the SMFD for review in December of 2006.

## B. Community Overview

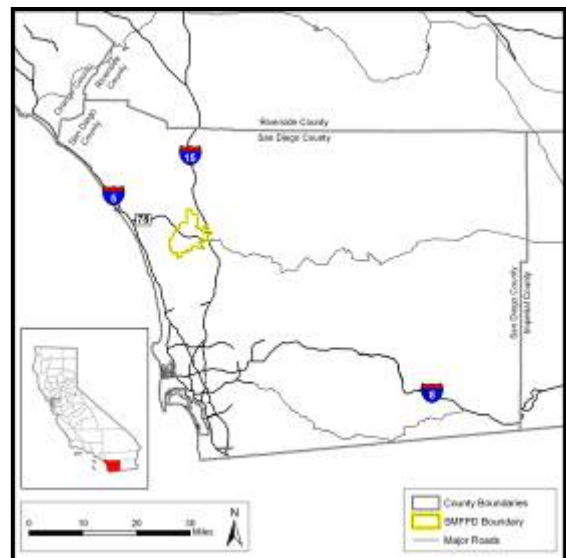
**Figure 1: Typical Landscape**



The San Marcos Fire Department response area is located in north San Diego County, approximately 45 miles north of San Diego, California. The San Marcos Fire Department serves both the City of San Marcos and the San Marcos Fire Protection District. The SMFD response area is bordered on the north by Vista Fire Protection District and Deer Springs Fire Protection District, on the east by the city of Escondido, on the south by unincorporated San Diego County, and on the west by the cities of Carlsbad and Vista. SMFD covers an area of 21,025 acres (33 square miles) and provides service to 81,554 residents.<sup>1</sup> Primary accesses to the district is via I-15 or I-5 and Highway 78.

**Figure 2: Location Map**

The majority of San Marcos is considered to be in the Inland Foothills Zone of San Diego County (elevation 72' to 1,745'). The dominant native vegetation is California chaparral, which is found as a mix of various shrub species. Among the significant species are manzanita, scrub oak, ceonothus, and chamise. There are also many non-native ornamentals and agricultural species throughout the area. Among these are avocado groves, citrus groves, and ornamental plantings too numerous to list. Riparian hardwood ecosystems with varying understory species exist in some drainages and low lying areas. Canopy coverage within the study area ranges from open grassland to dense canopies of chaparral. San Diego County supports more rare and endangered plant and animal species than any other county in the continental United States.<sup>2</sup>



As a part of this project the most populated WUI areas were divided into 19 communities. Each community represents certain dominant hazards from a wildfire perspective. **Figure 3** shows the communities that define the WUI study area and the associated Community Hazard Rating.

<sup>1</sup> Estimated population, 2005. <http://www.ci.san-marcos.ca.us/upload/images/EDC/Demographics/demographics.swf>

<sup>2</sup> Society for Conservation Biology –17th Annual Meeting (June - July 2003), Duluth, Minnesota, USA



As a reference for the rest of this document, please see **Figure 4** and **Figure 5**, which show the general topography of the area. These graphic representations of the landforms of the study area (elevation and slope) will be helpful in interpreting other map products in this report.

**Figure 3: San Marcos Communities**

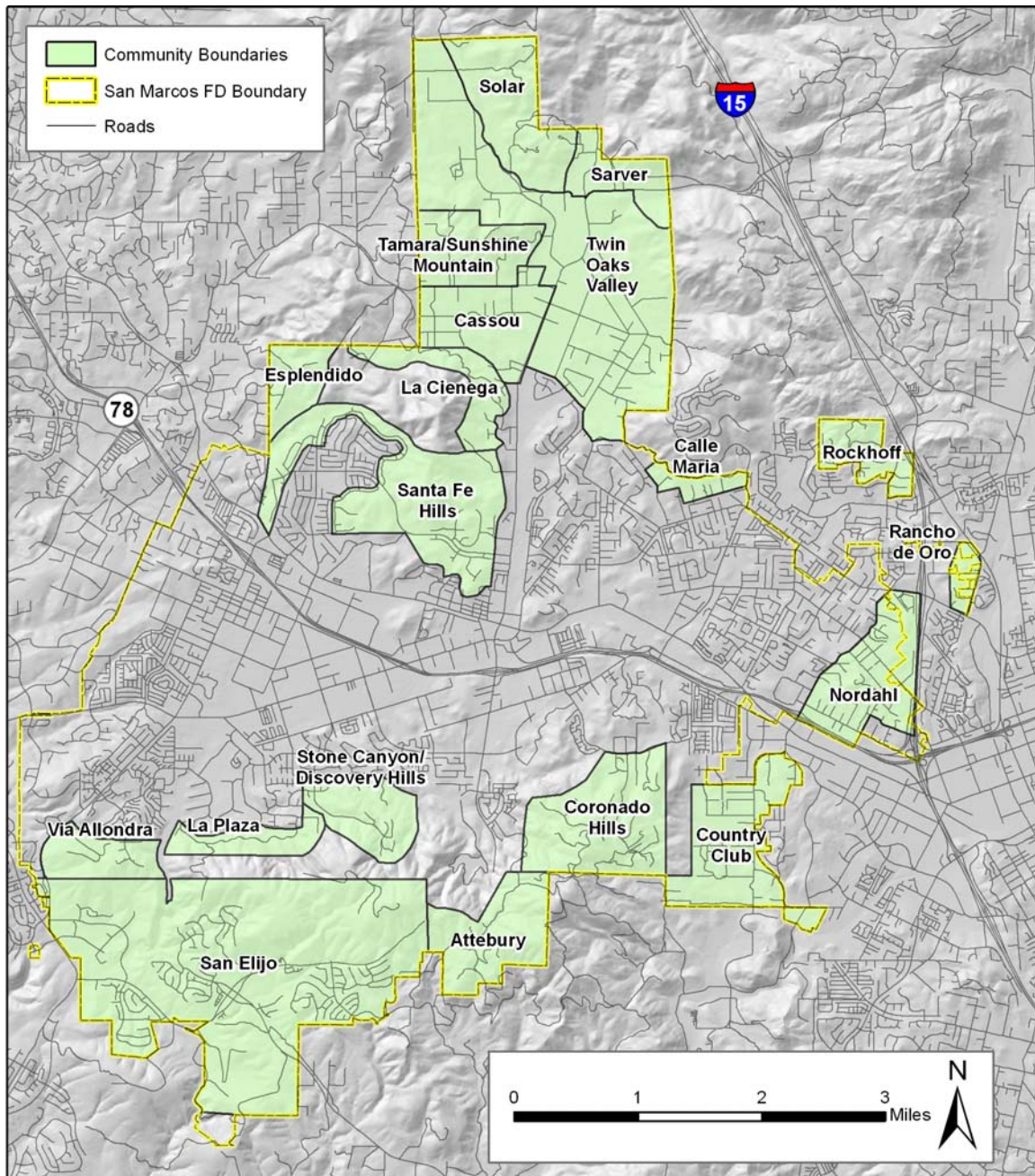




Figure 4: Percent Slope

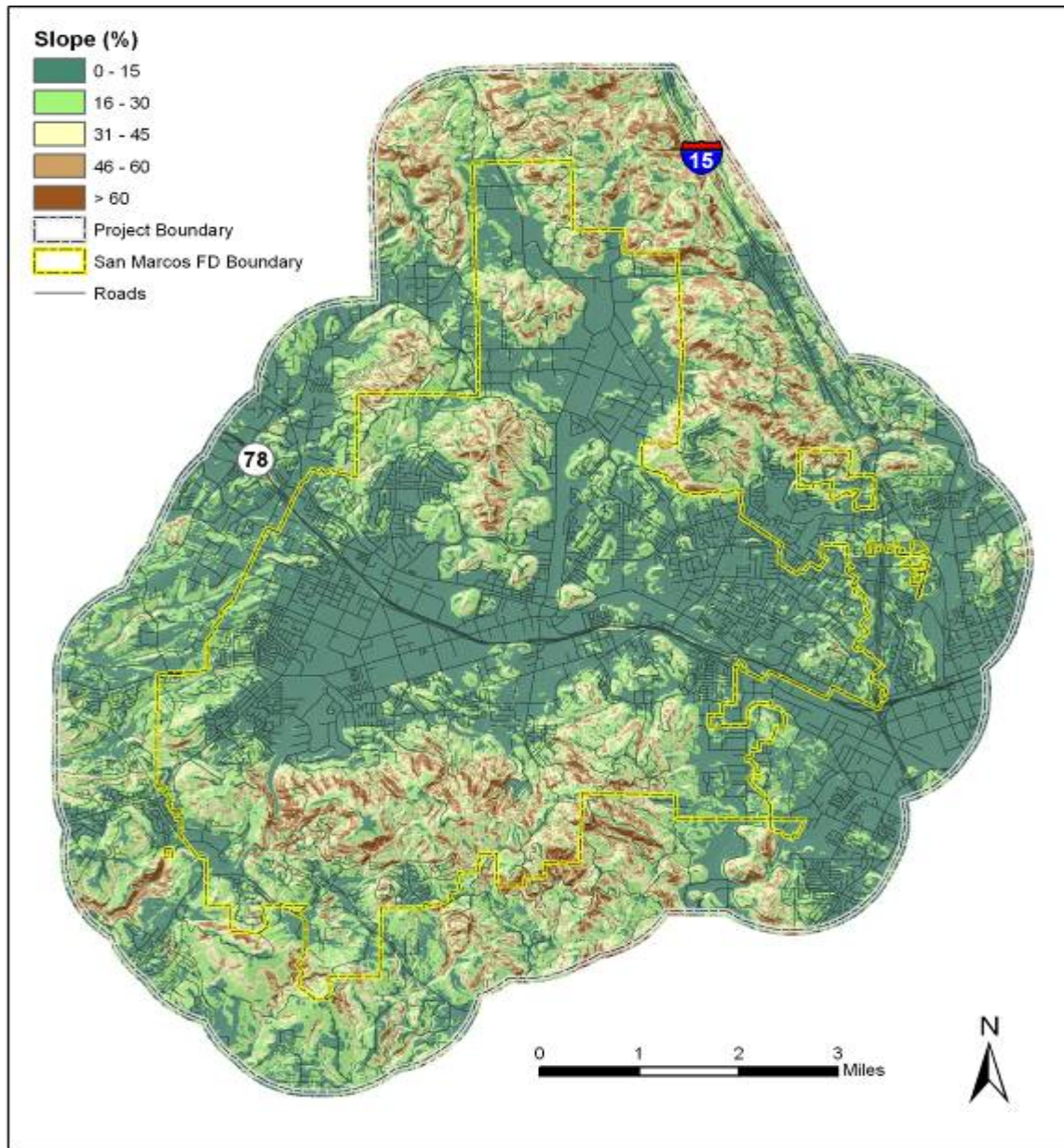
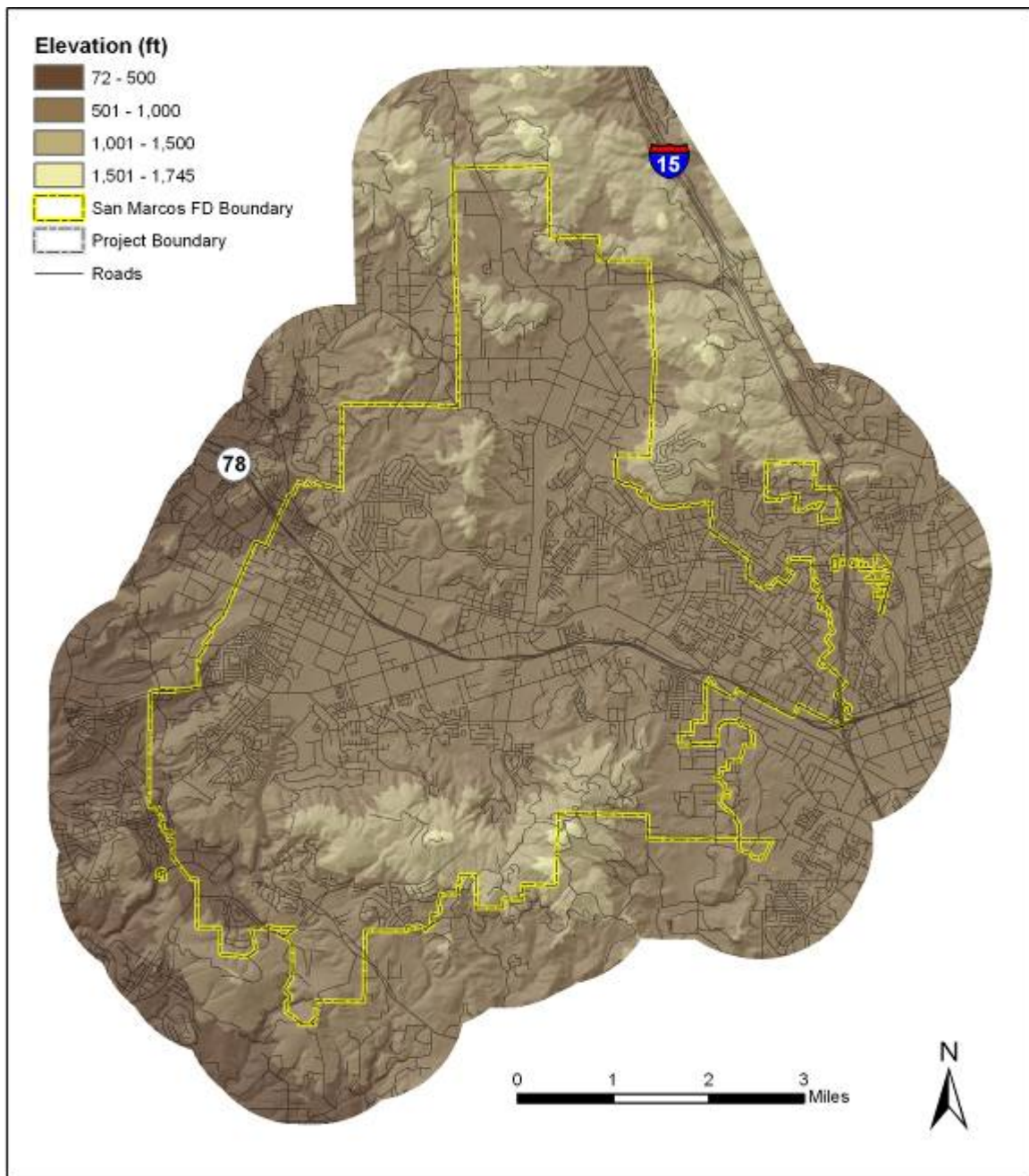
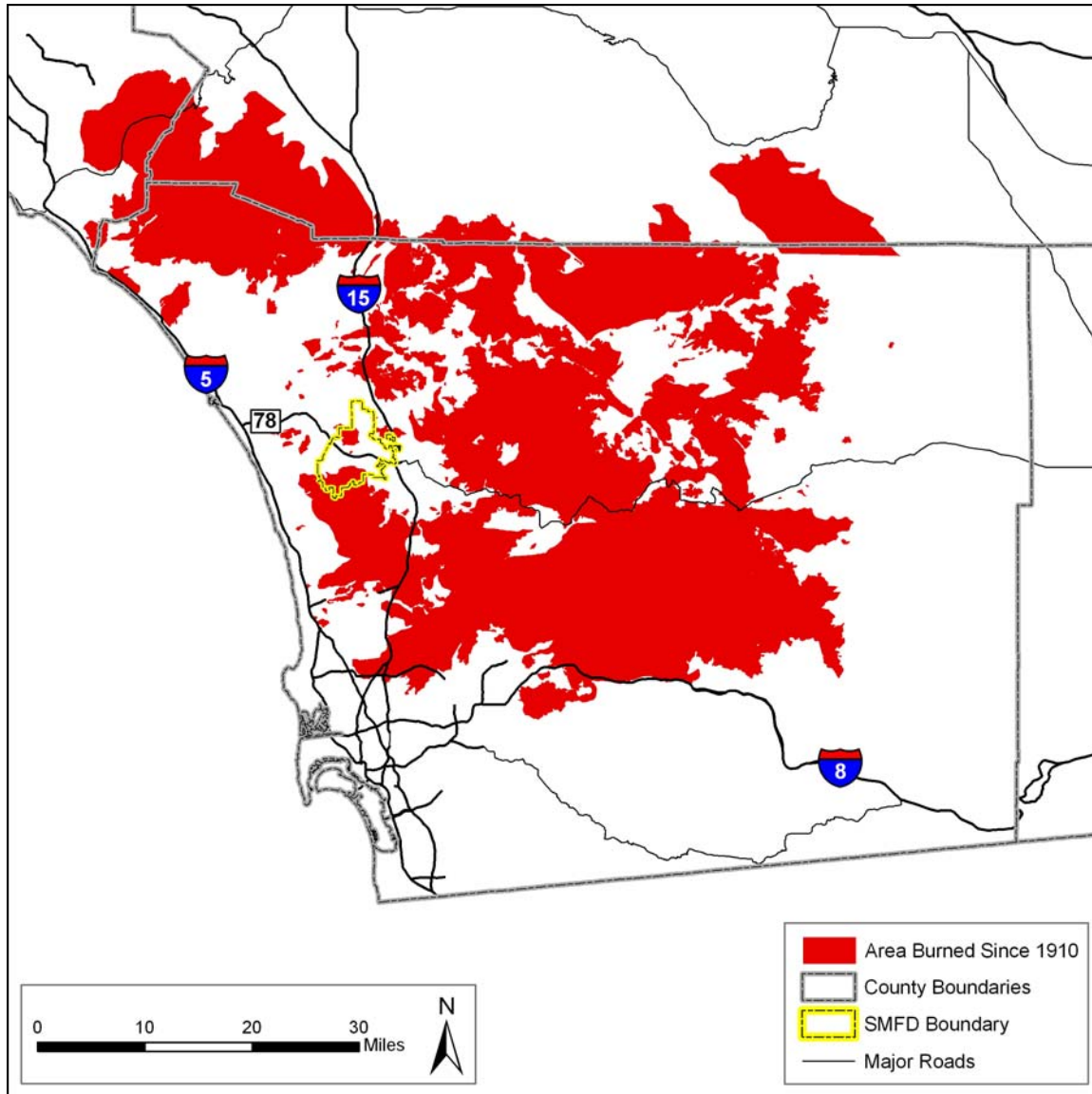


Figure 5: Elevation



The San Marcos Fire Department responded to approximately 142 confirmed vegetation fires in San Marcos from 2000 to 2005. This is an average of 24 wildland fire responses in San Marcos per year. **Figure 6** illustrates the large fire history in and around San Marcos since 1910.

**Figure 6: Data Extent for North San Diego County Fire History**



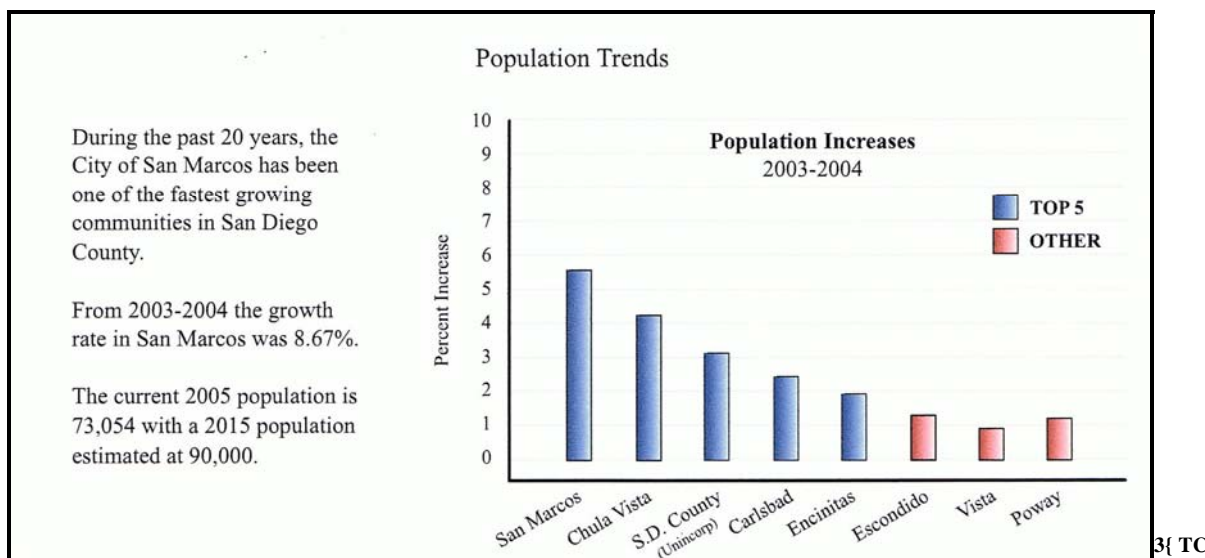
NOTE: Residential development in the WUI is increasing in the study area. As the density of structures and the number of residents in the interface increases, potential ignition sources will multiply. Unless efforts are made to mitigate the increased likelihood of human ignition spreading to the surrounding wildland fuels, the probability of a large wildfire occurrence will remain very high.



## C. Identification of Values at Risk

Historically, the people of the greater San Marcos area have united behind a tradition of community that is centered on family, an appreciation of cultural diversity, and a thriving marketplace. With a focus on the environment and wildlife habitat, ample permanent open space has been designated in south San Marcos, providing an appealing natural setting. With one of the most temperate climates in the United States, San Marcos has retained its pastoral beauty and has evolved into one of Southern California's most vibrant metropolitan areas. Today, the San Marcos area is a crossroads of culture, education, technology, and commerce, with the vision to meet the distinct needs of all its citizens—corporate, retail, and residential.

### Resident Demographics



"Resident Demographics" \f C \l "2" }

There are approximately 21,415 housing units and an estimated population of 81,554 in the study area (2005).<sup>4</sup> Please note that the population numbers in the graphic above are for the City of San Marcos only and not the entire study area.

<sup>3</sup> <http://www.ci.san-marcos.ca.us/upload/images/EDC/Demographics/demographics.swf>

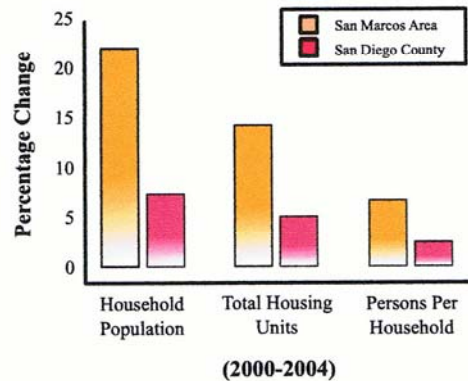
<sup>4</sup> Ibid

### Household Trends

Between 1990 and 2000, the San Marcos Market Area was increasing by about 370 households a year, on average.

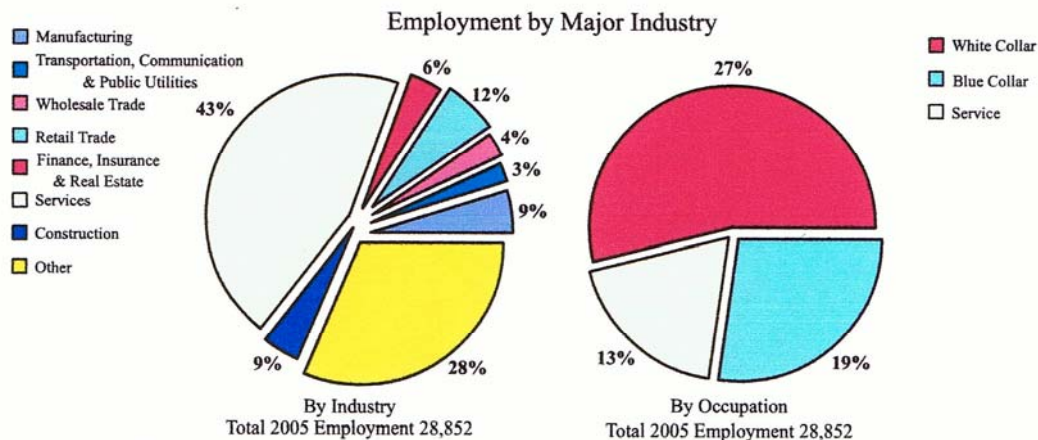
The number of housing units built in the city increased to approximately 1,000 units per year between 2002 and 2004.

Other household trends between 2000 and 2004 are indicated on the graph.



5

### Commerce { TC "Commerce" \f C \l "2" }



Employment in the service sector continues to grow while employment in San Marcos light manufacturing remains one of the highest concentrated areas in San Diego County.

6

<sup>5</sup> Ibid

<sup>6</sup> Ibid

## **Habitat Effectiveness**

Residents generally understand that the preservation of wildlife and the environment is important to the quality of life in this area. One of the primary means of measuring the health of wildlife and the natural environment is through habitat effectiveness. Habitat effectiveness is defined as the degree to which habitat is free of human disturbance and available for wildlife to use.

Effective habitat is mostly undisturbed land area, which is buffered (at least 300 feet in essentially all situations) from regular motorized and non-motorized use of roads and trails (11 or more people or vehicle trips per week). Habitat effectiveness should not fall below 50%. In fact, the best wildlife habitats have a much higher percentage.<sup>7</sup> Wildfire, especially catastrophic wildfire, would have significant adverse effects on habitat effectiveness, especially in such a densely populated area as San Marcos.

San Diego County is known nationwide for the tremendous diversity of its plants and animals, and the number of species that are considered rare or endangered. A study in the January 1997 issue of *Science* magazine listed San Diego County as one of two counties in the United States considered “hot spots” for containing unique and unusual species. San Diego County has also experienced tremendous population growth. The impact of the increased growth rate on the many sensitive species in the region led former Secretary of Interior Bruce Babbitt to describe the situation as a “train wreck.”

In California, landscape-scale conservation planning as well as endangered species conservation and permitting programs were initiated through the combination of the federal Habitat Conservation Plan (HCP) process and the state’s Natural Communities Conservation Planning (NCCP) program. This innovative conservation planning process was developed to allow landowners, local governments, and other stakeholders to prepare plans that streamline appropriate development while conserving large, intact areas of high biologic value. The Multiple Species Conservation Program (MSCP), established in 1997, was the first large-scale NCCP/HCP to be developed and included the South San Diego County Sub-Area Plan. The North San Diego County Sub-Area Plan is currently under development and has included substantial change to the conservation planning process, including unprecedented independent scientific input (a primary area of criticism in the South County Sub-Area Plan). The county sought input from a diverse group of recognized Independent Scientific Advisors (ISAs) that resulted in several improvements in the science-based approach to ecosystem management. These efforts speak to the importance residents of San Diego County place on the preservation of wildlife and the environment.

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<sup>7</sup> Peak to Peak Community Indicators Project 2003. Presented by Peak to Peak Healthy Communities Project  
©Copyright 2003 Peak to Peak Healthy Communities Project



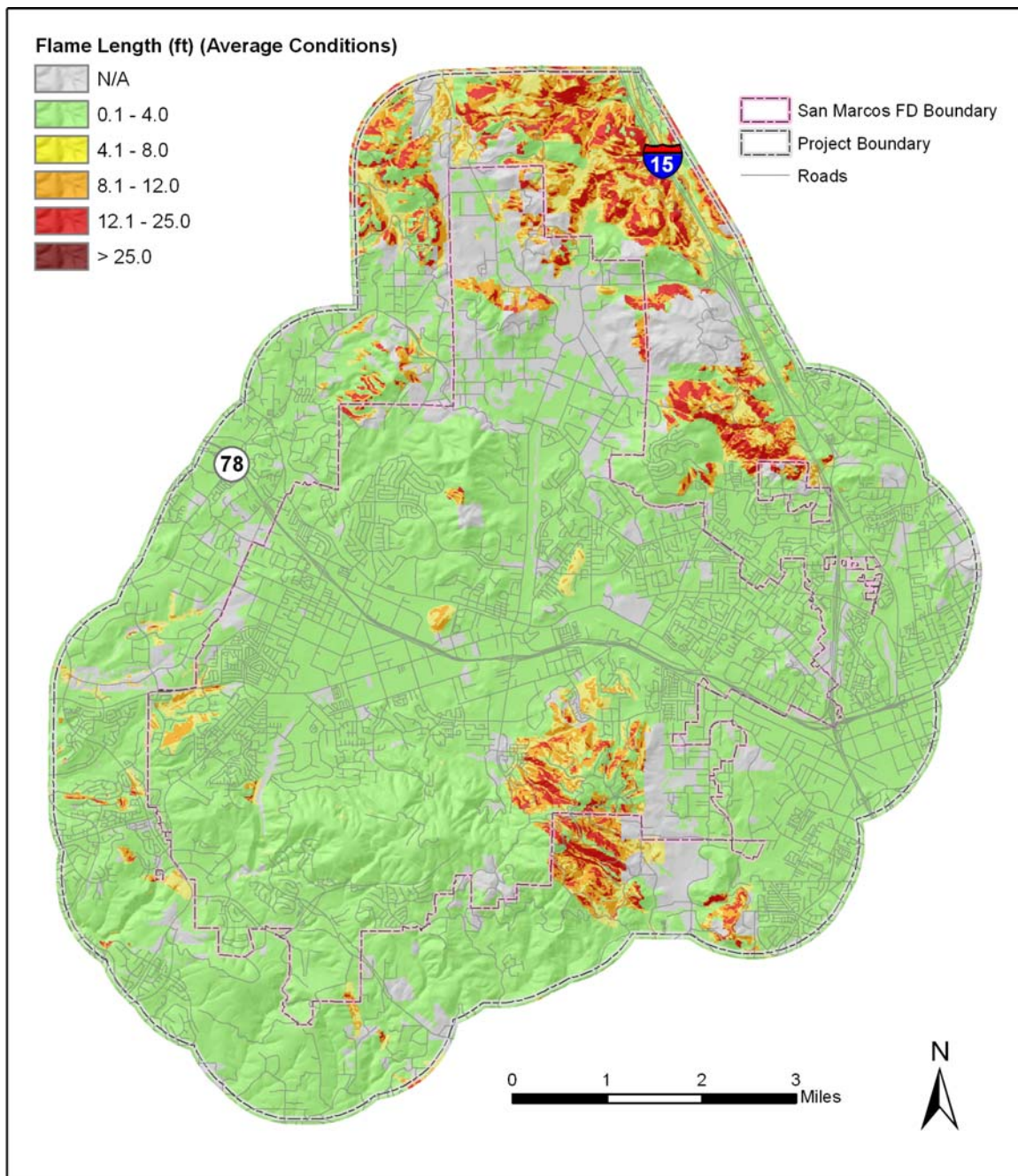
## **Fire Behavior Potential{ TC "Habitat Effectiveness" \f C \l "2" }**

Fire behavior potential maps (**Figures 7-9**) graphically display potential crown fire activity, flame length, and rate of spread, given average weather conditions throughout the year. These predictions were based on the FlamMap 2.0 fire behavior modeling software. Weather observations from the nearby Roblar Remote Automated Weather Station (RAWS) site were averaged for a 13-year period (1992-2005). The Fire Family Plus computer software package was used to derive relevant fuel variables (One-hour, 10-hour, and 100-hour fuel moisture, woody-fuel moisture, herbaceous-fuel moisture, and wind speed) for inclusion in FlamMap. This weather condition class most closely represents an average fire season day.

The “extreme conditions” maps (**Figures 10-12**) are also fire behavior prediction maps of the potential crown fire activity, flame length, and rate of spread that were calculated in FlamMap, using average fuel moisture values. The important distinction between average and extreme conditions for fire behavior potential results was the wind speed used in the calculations. Average fire behavior prediction maps used average wind speeds (13 mph) along with average fuel moisture characteristics whereas “extreme condition” maps used wind speeds typical of days dominated by Santa Ana wind conditions (29 mph). Even these calculations may be conservative compared to observed fire behavior.

Weather conditions are extremely variable and not all combinations are accounted for. These outputs are best used for pre-planning and not as a stand-alone product for tactical planning. This model can be combined with the WHR and Values at Risk information to generate current and future “areas of concern,” which are useful for prioritizing mitigation actions. This is sometimes referred to as a “values layer.” When this information is used for tactical planning, fire behavior calculations should be done with actual weather observations during the fire event. For greatest accuracy, the most current Energy Release Component (ERC) values should be calculated and distributed during the fire season to be used as a guideline for fire behavior potential.

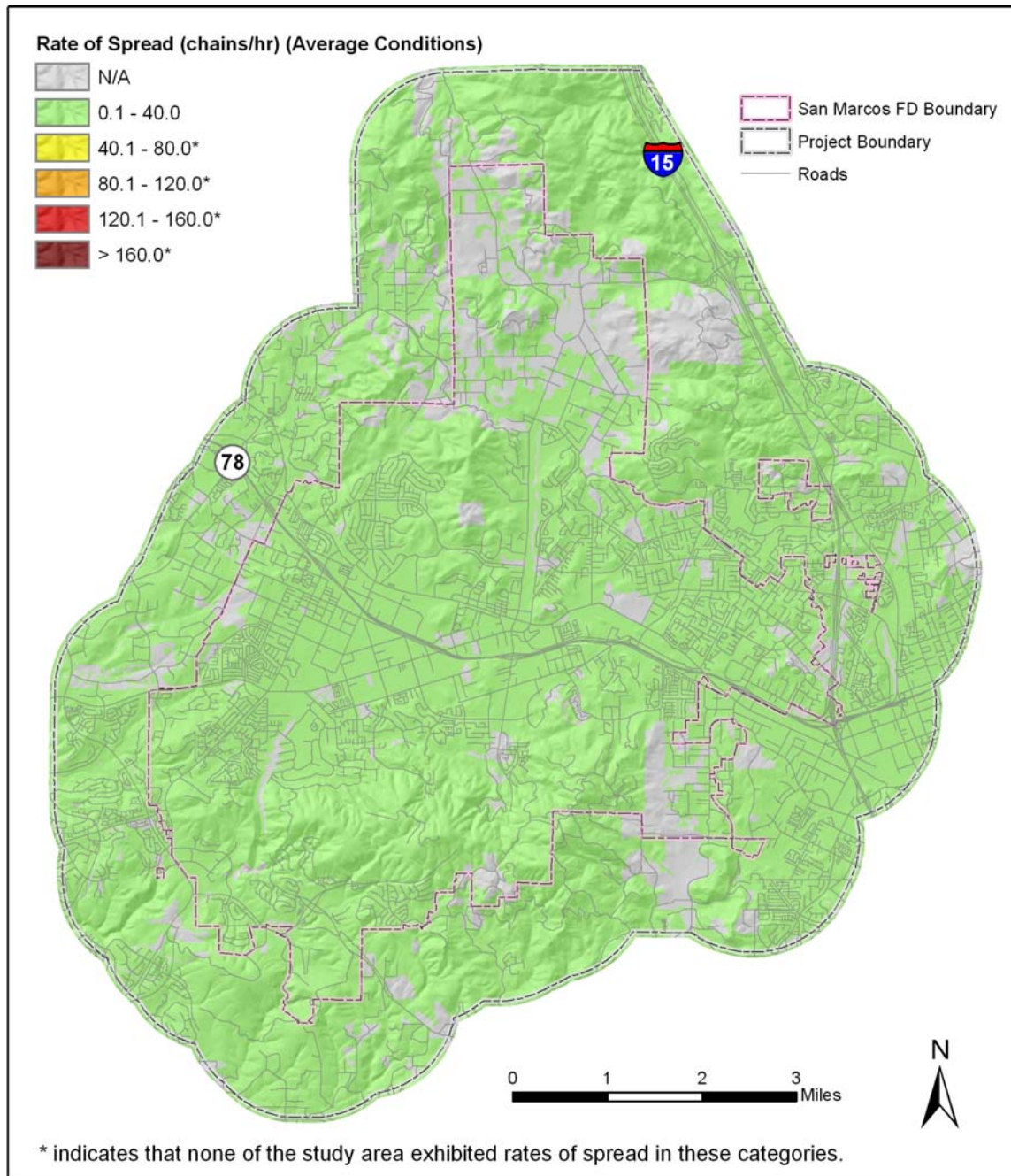
Figure 7. Flame Length Predictions (Average Weather Conditions)



N/A = Not Applicable

**Flame Length:** The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface); an indicator of fire intensity.

Figure 8. Rate of Spread Predictions (Average Weather Conditions)

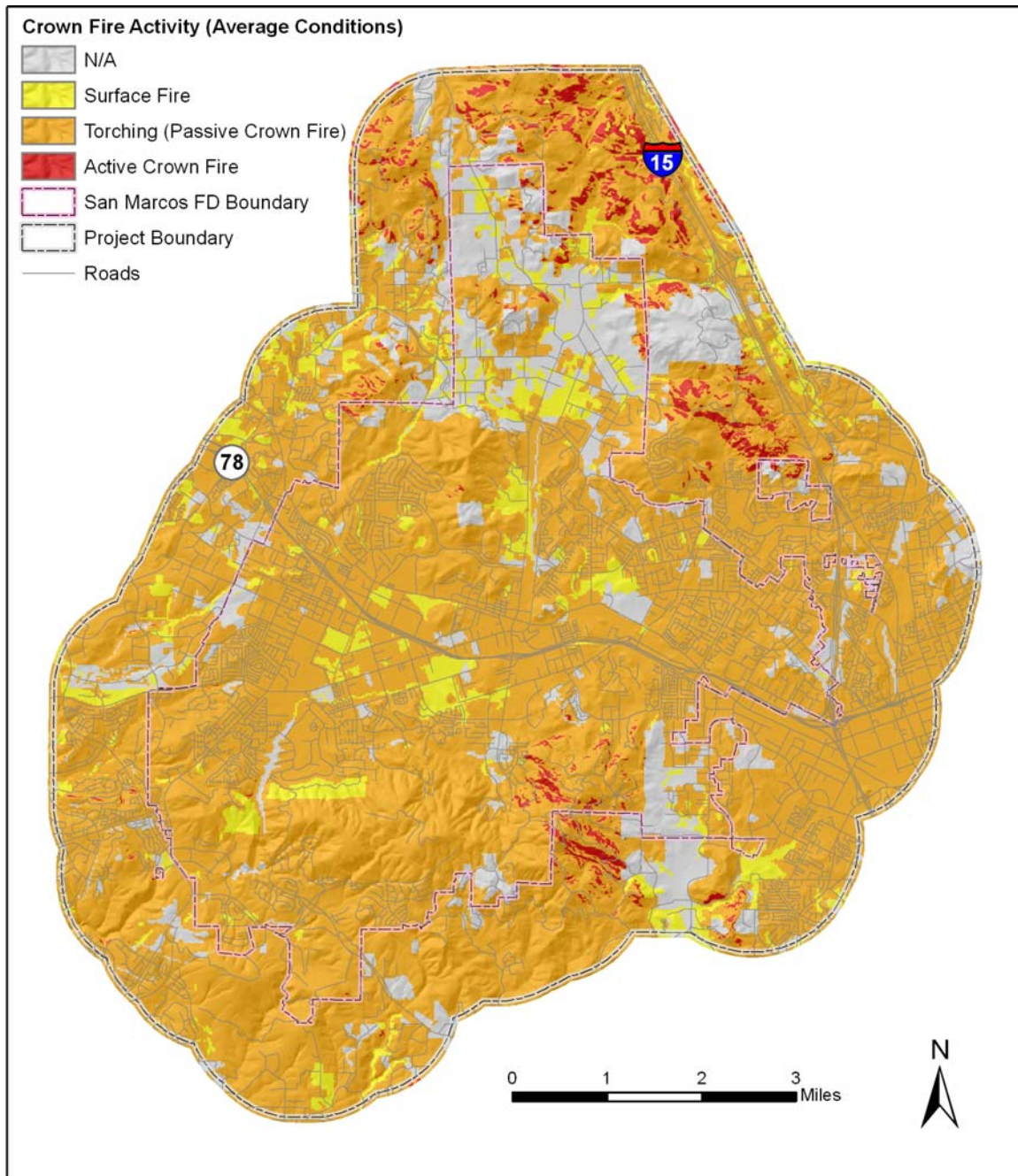


N/A = Not Applicable

A chain is a logging and fire line measurement (1 chain = 66 feet. 80 chains/hour = 1 MPH)

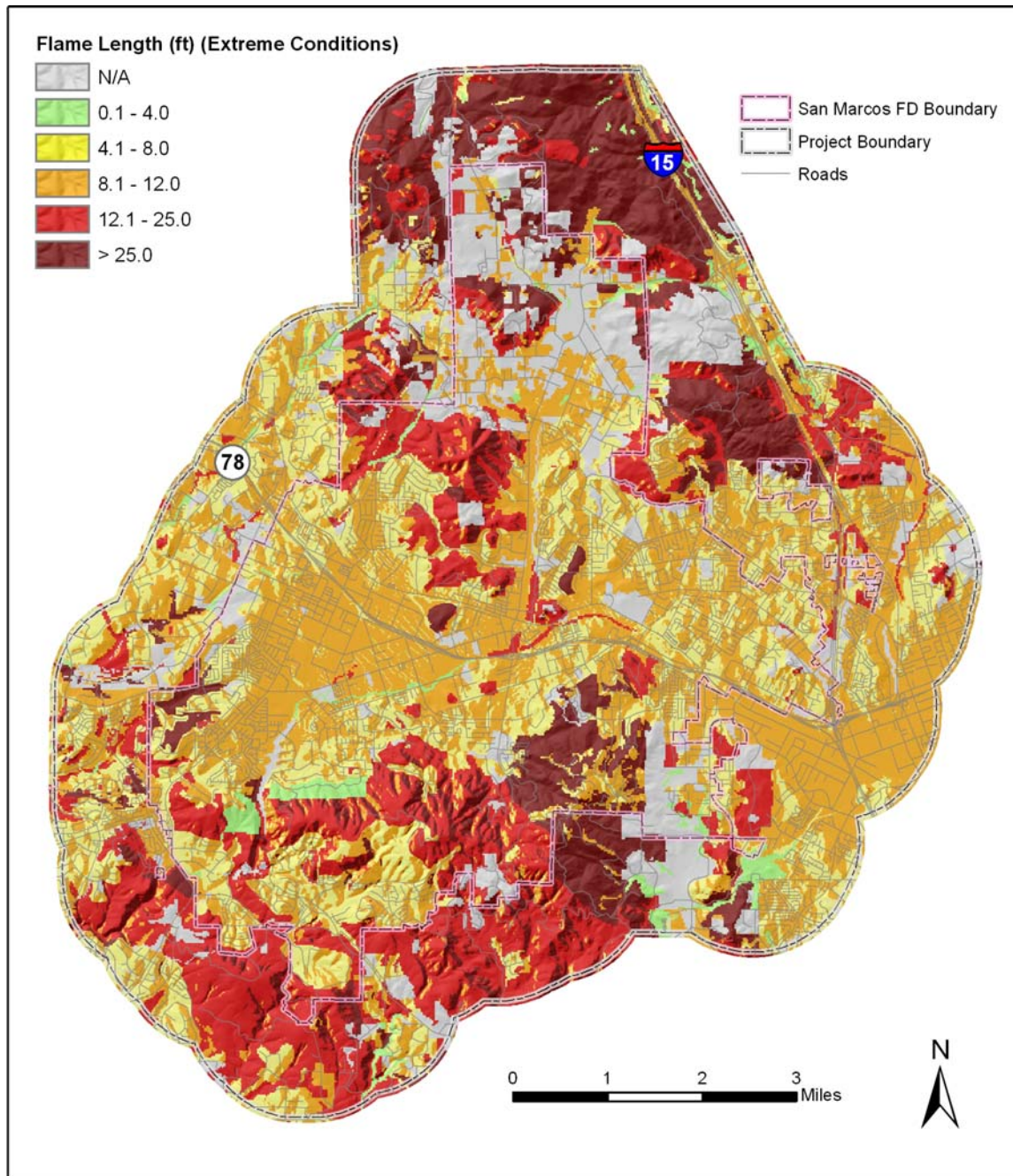


Figure 9. Crown Fire Potential (Annual Average Weather Conditions)



N/A = Not Applicable

Figure 10. Flame Length Predictions (Annual Extreme Weather Conditions)

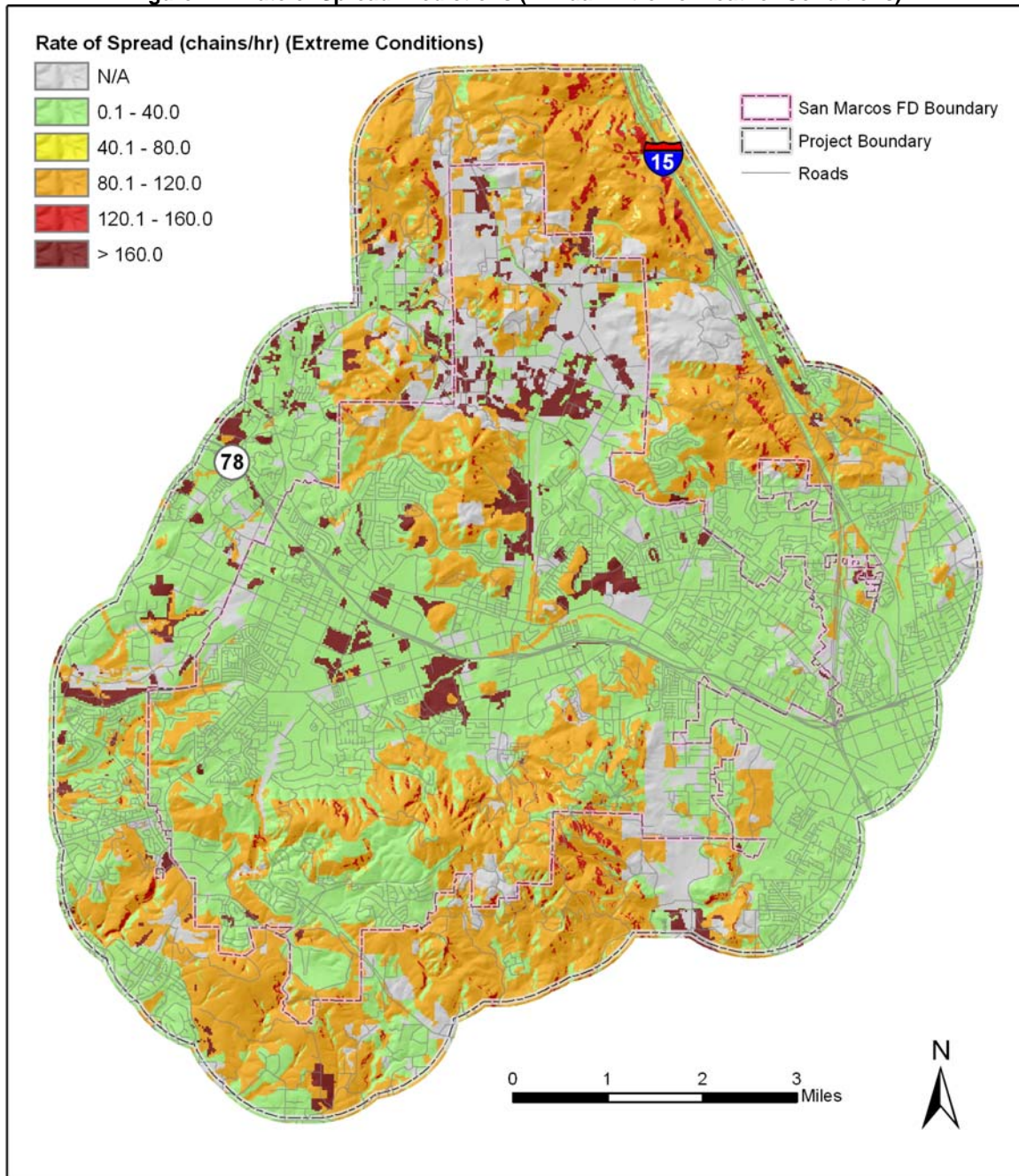


N/A = Not Applicable

**Flame Length:** The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface); an indicator of fire intensity.



**Figure 11. Rate of Spread Predictions (Annual Extreme Weather Conditions)**

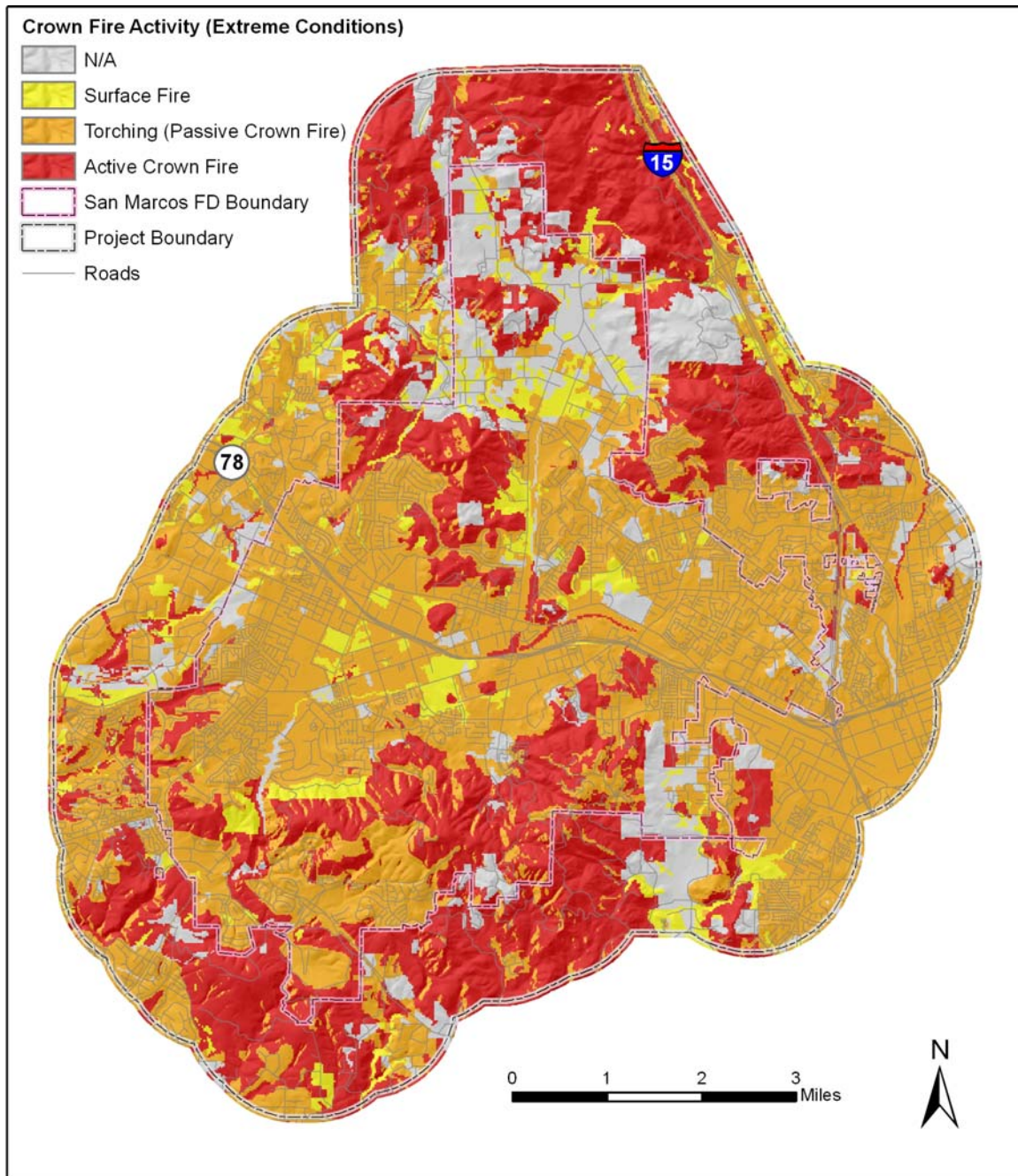


N/A = Not Applicable

A chain is a logging and fire line measurement (1 chain = 66 feet. 80 chains/hour = 1 MPH)



Figure 12. Crown Fire Potential (Annual Extreme Weather Conditions)



N/A = Not Applicable

#### **D. Local Preparedness and Firefighting Capability**

The San Marcos Fire Department provides emergency response to all structural fire, vegetation fire, rescues, medical emergencies and other associated emergencies within the SMFD response area. The SMFD response area is comprised of the 24 square miles within the City of San Marcos and 9 square miles within the San Marcos Fire District for a total area of 33 square miles served. The SMFD has primary responsibility for vegetation fire suppression on all Local Responsibility Areas (LRA) and also provides initial attack suppression services to a small State Responsibility Area located within the District. The SMFD has four fire stations with 22 fire suppression personnel on duty each day. The SMFD has received an Insurance Services Office rating of 2.

## **SECTION II: PRIORITIZED FUEL REDUCTION TREATMENTS**

### **A. Priorities**

As a component of the CWPP process the San Marcos Fire Department has completed an annual work plan that prioritizes proactive measures to reduce the threat of wildfire to life and property in San Marcos. The annual work plan, is a three year plan, with action items noted for each year under four main areas:

1. Public Education
2. Access and Evacuation
3. Home Mitigation
4. Fuels Treatments

### **Annual Work Plan: 2008**

#### **PUBLIC EDUCATION EFFORTS**

- Conduct homeowner meetings to discuss the results of the Community Wildfire Protection Plan (CWPP) and plans for future work.
- Provide residents with access to the findings of the CWPP by posting pertinent elements on the City of San Marcos web site.
- Develop a public education campaign to advise property owners of the importance of proper street addressing and how to properly address their property.
- Post links to educational web sites such as <http://www.firewise.org>, <http://www.firesafe.com/council/> (County of San Diego) and <http://www.firesafe.com/firescape.html> on the City of San Marcos web site.
- Update any existing public education information and web links on the San Marcos website.
- Develop a wildfire educational presentation explaining the concepts of defensible space and wildfire hazard mitigation. The information in the San Marcos CWPP should be incorporated into this resource for the education of homeowners district-wide. This could be done through informational gatherings sponsored by the SMFD and/or Cal Fire, such as local festivals, school events, times of extreme fire danger, and other times of heightened awareness concerning wildfire. It is far easier to bring information to citizens than to bring citizens to the information, making this an especially powerful resource.
- Conduct an effort to educate homeowners about the risk from wildland fires occurring within the fuel islands adjacent to their homes.

#### **ACCESS & EVACUATION**

- Seek grant-funding opportunities to inventory and develop a program to replace worn or difficult to read street signs in the fire district areas.
- Begin pre-planning staging areas for fire resources.

- Begin public and internal meetings to determine the feasibility of implementing the following escape route recommendations:
1. **Attebury Road Improvements:** This is an existing road running from the southwest end of Coronado Hills through the Attebury community and into San Elijo. This is an important emergency access alternative to the narrow, steep, primary entrance into Coronado Hills, and would be especially useful during east wind conditions for emergency access and egress. This road runs through heavy fuels and becomes a narrow dirt road for a short distance on the east side of the Attebury community. The project would include widening the existing road as necessary to conform to a 24' drivable surface width, and improving the dirt portion to create an all-weather surface.
  2. **Attebury Road to Twin Oaks Valley Road:** This is a time-critical project because it leverages existing road construction already underway to connect San Elijo to South Twin Oaks Valley Road. The project would connect Attebury Road to the new roadway, creating an alternate emergency escape route for both Coronado Hills and Attebury, the two most hazardous communities in the study area.
  3. **Stone Ridge to Discovery Hills:** This connection should be maintained as an emergency-only escape route from Stone Canyon to Discovery Hills. This is an existing paved multi-use trail that should be maintained to provide a 24' drivable surface. This is a high priority project since it will provide an eastern access point as well as an alternate escape route for the isolated and hazardous Stone Canyon area.
  4. **Sleepy Hollow to David Glen:** This paved connection is currently blocked by a wooden barrier. This route should be pre-planned as an alternate evacuation route from the northwestern side of Rockhoff. It could be used to evacuate citizens from Rockhoff to the golf course clubhouse, surrounded by golf greens, located at 1800 Country Club Lane. The large clubhouse building would make an excellent evacuation center for fires affecting the Rockhoff community.

## HOME MITIGATION

- Inventory the extreme and very high rated communities for properties rated as high hazard or greater who do not have conforming defensible space. This effort combined with public education efforts should result in an approximate number of interested homeowners in these areas. This information will be used to refine the workload for future annual planning.
- Identify “cross-boundary” and “cross-lot” projects (also see Rockhoff/I-15 fuel break in the “Fuels Treatments” section).
- Encourage and/or mandate the use of ignition resistant construction for all new construction.

## FUELS TREATMENTS

<b>Management Unit(s):</b>	<b>Acres (approx): 74</b>
Attebury Water Tower Safety Zone (demonstration project)	2
Attebury Road Fuels Reduction (demonstration project)	31
Rockhoff/I-15 Fuelbreak	15
Stone Canyon Linked Defensible Spaces	20

**Prescriptions:**

- **Attebury Water Tower Safety/Deployment Zone:** This treatment area extends an existing clearing located at a water tank on the top of a small summit to the south of the Attebury community. The resulting clearing could, depending on fire conditions, be used as a last-resort evacuation area for citizens (there are several homes close by that would be difficult or impossible to defend from fires driven by Santa Ana winds). The clearing could also be used as a staging area or safety/deployment zone for fire resources. It is also recommended that a fire department connection (FDC) with a backflow prevention valve (also known as a one-way valve) be installed in the water tank for defense of this area. The project is located slightly outside the SMFD response area and is a cross-boundary project with the Vallecitos Water District and the Elfin Forest/Harmony Grove Fire Department.
  - 1) Meet with and obtain consent and cooperation (if possible) from Vallecitos Water District and the Elfin Forest/Harmony Grove Fire Department to proceed with this project.
  - 2) Evaluate, mark and obtain quotations for implementing the safety/deployment zone.
- **Attebury Road Fuels Reduction:** This is an existing road running from the southwest end of Coronado Hills through the Attebury community and into San Elijo. This is an important emergency access alternative to the narrow, steep, primary entrance into Coronado Hills, and would be especially useful during east wind conditions for emergency access and egress. This road runs through heavy fuels and becomes a narrow dirt road for a short distance on the east side of the Attebury community. Where native fuels (mostly chaparral) encroach upon the roadway. Thinning should be done to a distance 100' on both sides of the roadway. This is a high priority project due to the extreme danger and limited access in Coronado Hills.
  - 1) Meet with land owners adjacent to the project area to determine project feasibility and extent.
  - 2) Develop preliminary plans for fuels management and road improvement.
- **Rockhoff/I-15 Fuelbreak (Approximately 15 Acres):** Thinning to reduce ladder fuels and interrupt the crown continuity of fuels is recommended between Nutmeg and the I-15 frontage road (west side of I-15), and continuing for approximately 350 feet west of the I-15 frontage road from Neilsen Road to an open area adjacent to the frontage road approximately .9 miles to the north. Although the bulk of this project would be outside the SMFD response area, it should nonetheless be considered as a way to reduce the possibility of an ignition along the I-15 corridor from spreading to homes in Rockhoff and the Escondido Fire Department response area. This effort is a cross-boundary project with Cal Trans and the Escondido Fire Department.
  - 1) Identify the project area
- **Stone Ridge to Discovery Hills Access Road:** This connection should be maintained as an emergency-only escape route from Stone Canyon to Discovery Hills. This is a high

priority project since it will provide an eastern access point as well as an alternate escape route for the isolated and hazardous Stone Canyon area.

- 1) Continue to maintain the access
- 2) Incorporate the emergency access into wildland pre-attack plans and community education efforts.

- **Stone Canyon Linked Defensible Spaces:** Evaluate defensible space around all homes in the Stone Canyon/Discovery community, which are located adjacent to chaparral fuels. The goal of this project is for defensible spaces to continue seamlessly from property to property, in order to provide the maximum effectiveness for the project. This project is designed to reduce fire intensity to homes from fires in the chaparral, and to reduce the likelihood of human-caused starts extending into the chaparral fuel beds. It is also designed to maximize property conservation.

- 1) Evaluate and implement, where allowed by property owners, defensible space around homes.

- **Stone Canyon Fuelbreak/Defensible Space:** Thinning to reduce ladder fuels and interrupt the crown continuity of fuels is recommended within a distance of at least three times the flame lengths predicted by the extreme weather scenario (Santa Ana winds) fire behavior model (FBM). Project area is south and west of Via Vera Cruz and Skyline Drive, and extends from the end of Pippin to the Stone Canyon guard house on Via Vera Cruz. This project, which is on city-owned and HOA lands, is designed to reduce fire intensity and extend defensible space for a large number of homes in the Stone Canyon/Discovery Hills community.

- 1) Evaluate and identify the project area. Begin project implementation.

## **RECOMMENDATIONS FOR AREAS OF SPECIAL INTEREST**

- Develop a comprehensive wildfire plan to include fuels management, access improvements, water supply improvements, fire sprinklers, and wildland preplans for the Golden Door Spa.



## **Annual Work Plan: 2009**

### **PUBLIC EDUCATION EFFORTS**

- Conduct a public outreach campaign to those homeowners who have been identified as not having conforming defensible space around their homes. The goal of this educational program is to encourage the creation of conforming defensible space.
- Maintain and update fire education information and links on the City of San Marcos web site.
- Create a local Fire-Safe Council to promote the message of shared responsibility. Too often, advice from government agencies can be construed as self-serving. Consequently, citizens may resist acting on this information. The Fire-Safe Council should consist of local citizens, and its primary uses should be to:
  - Bring the concerns of the residents to the prioritization of mitigation actions
  - Select demonstration sites
  - Assist with grant applications and awards
- Make use of regional and local media to promote wildfire public education messages in the district.
- Develop a public education campaign to advise property owners of the importance of proper street addressing and how to properly address their property.
- Continue the public education effort begun in 2008 to educate homeowners about the risk from wildland fires occurring within the fuel islands that are adjacent to some homes.
- Develop a public education campaign to advise property owners in and surrounding residential fuel islands of the importance of practicing all of the general measures to improve fire safety listed in the San Marcos CWPP.

### **ACCESS & EVACUATION**

- If grant funding is received, create an action plan to replace the worn or difficult to read street signs in the fire district areas inventoried in the 2008 Annual Work Plan.
- If grant funding is received, contact the appropriate property owners regarding replacement of unmarked or improperly marked community driveways and private roads in the fire district areas. Any areas where markings cannot be upgraded due to property owner resistance, or other factors, should be identified and incorporated in the San Marcos Operational Pre-attack Plan.
- Inventory and include in the San Marcos Operational Pre-attack Plan staging areas for fire resources inventoried and determined to be viable in the 2008 Annual Work Plan.
- Begin implementation and contractor selection for any of the escape routes recommendations determined to be a viable in the 2008 Annual Work Plan.
- Begin public and/or internal meetings as necessary to determine the feasibility of implementing the following escape route recommendations:

1. **Via Del Corvo to Cuadro Vista:** This existing connection should be pre-planned and maintained as an emergency-only escape route.

## HOME MITIGATION

- Inventory any communities not reviewed in the 2008 Annual Work Plan for properties rated as high hazard or greater who do not have conforming defensible space. This effort combined with public education efforts should result in an approximate number of interested homeowners in these areas. This information will be used to refine the workload for future annual planning.
- Assist homeowners that have been identified as interested in the extreme and very high rated communities with implementing defensible space cuttings.
- Create a database of homeowners that have been contacted regarding defensible space implementation. The database should include contacted and interested, contacted and not interested, properties planned and properties implemented information.
- Facilitate “cross-boundary” and “cross-lot” projects (also see Rockhoff/I-15 fuel break in the “Fuels Treatments” section).
- Begin inventory and facilitate the creation of 100 feet of defensible space around structures built prior to January 1, 2004, and 150 feet for those built after that date for all homes adjacent to a fuel island.

## FUELS TREATMENTS

<b>Management Unit(s):</b>	<b>Acres (approx):</b>
Attebury Water Tower Safety Zone (demonstration project)	2
Attebury Road Fuels Reduction (demonstration project)	31
Stone Ridge to Discovery Hills Access Road Fuels Reduction	3
Stone Canyon Linked Defensible Spaces	20
Stone Canyon Fuelbreak/Defensible Space	6
Rockhoff/I-15 Fuelbreak	15
Via Allondra Linked Defensible Spaces and Overlot Thinning	20
Defensible Space Implementation	Various

### Prescriptions:

- **Attebury Water Tower Safety/Deployment Zone:**
  - 1) Finalize contractor selection and begin implementation.
- **Attebury Road Fuels Reduction and Road Improvement:**
  - 1) Begin engineering, design and cost analysis of project
- **Stone Ridge to Discovery Hills Access Road Fuels Reduction:**
  - 1) Continue to maintain
- **Stone Canyon Linked Defensible Spaces:**
  - 1) Continue to implement and maintain as necessary on an annual basis
- **Rockhoff/I-15 Fuelbreak:**
  - 1) Facilitate project implementation
- **Stone Canyon Fuelbreak/Defensible Space:**
  - 1) Continue implementation and maintain as necessary on an annual basis

- **Via Allondra Linked Defensible Spaces and Overlot Thinning:** Evaluate and mark (as allowed by property owners) defensible space around homes located on Via Del Corvo and Via Allondra. If there are any lots that do not have existing structures, thinning should be conducted as necessary to reduce ladder fuels and interrupt the crown continuity of fuels for a distance of at least three times the flame lengths predicted by the extreme weather scenario (Santa Ana winds) fire behavior model (FBM). The goal of this project is for defensible spaces to continue seamlessly from property to property in order to provide the maximum effectiveness for the fuelbreak. This project is designed to reduce fire intensity from an ignition occurring in the chaparral fuels below these homes and is critical for the safety of residents and firefighters as well a property conservation.

1) Meet with landowners adjacent to the project area to determine project feasibility and extent.

## **RECOMMENDATIONS FOR AREAS OF SPECIAL INTEREST**

- Implement the comprehensive wildfire plan for the Golden Door Spa developed in the 2008 Annual Work Plan.

## **Annual Work Plan: 2010**

### **PUBLIC EDUCATION EFFORTS**

- Conduct a public outreach campaign to those homeowners who have been identified as not having conforming defensible space around their homes. This educational program should encourage the creation of conforming defensible space.
- Maintain and update fire education information and links on the City of San Marcos web site.
- Make use of regional and local media to promote wildfire public education messages in the district.

### **ACCESS & EVACUATION**

- If grant funding is received, continue implementation of the action plan to replace the worn or difficult to read street signs in the fire district areas created in the 2009 Annual Work Plan.
- If grant funding is received, monitor and assist property owners in the replacement of unmarked or improperly marked community driveways and private roads in the fire district areas. Any areas where markings cannot be upgraded due to property owner resistance, or other factors, should be identified and incorporated in the San Marcos Operational Pre-attack Plan.
- Inspect the staging areas for fire resources listed in the San Marcos Operational Pre-attack Plan for continued viability.
- Educate citizens about proper escape routes and evacuation centers to use in the event of an evacuation.
- Implement a reverse 911 system or call lists to warn residents when an evacuation may be necessary. It is likely that reverse 911 will not be 100% effective in reaching residents. Therefore, local television and radio stations should also carry out notifications. Any

existing disaster notification systems, such as tornado warnings, should be expanded to include wildfire notifications.

- Continue implementation and maintenance of the escape routes projects determined to be a viable in the 2008-2009 Annual Work Plans.

## **HOME MITIGATION**

- Inventory any communities not reviewed in the 2008-2009 Annual Work Plans for properties that do not have conforming defensible space. This effort combined with public education efforts should result in an approximate number of interested homeowners in these areas. This information will be used to refine the workload for future annual planning.
- Assist homeowners that have been identified as interested with implementing defensible space cuttings.
- Maintain the database of homeowners created in the 2009 Annual Work Plan who have been contacted regarding defensible space implementation.
- Monitor any ongoing “cross-boundary” and “cross-lot” projects.
- Monitor and facilitate as necessary the creation of 100 feet of defensible space around structures built prior to January 1, 2004, and 150 feet for those built after that date for all homes adjacent to a fuel island.

## **FUELS TREATMENTS**

<b>Management Unit(s):</b>	<b>Acres (approx):</b>
Attebury Water Tower Safety Zone (demonstration project)	2
Attebury Road Fuels Reduction (demonstration project)	31
Stone Ridge to Discovery Hills Access Road Fuels Reduction	3
Stone Canyon Linked Defensible Spaces	20
Stone Canyon Fuelbreak/Defensible Space	6
Via Allondra Linked Defensible Spaces and Overlot Thinning	20
Defensible Space Implementation	Various

## **Prescriptions:**

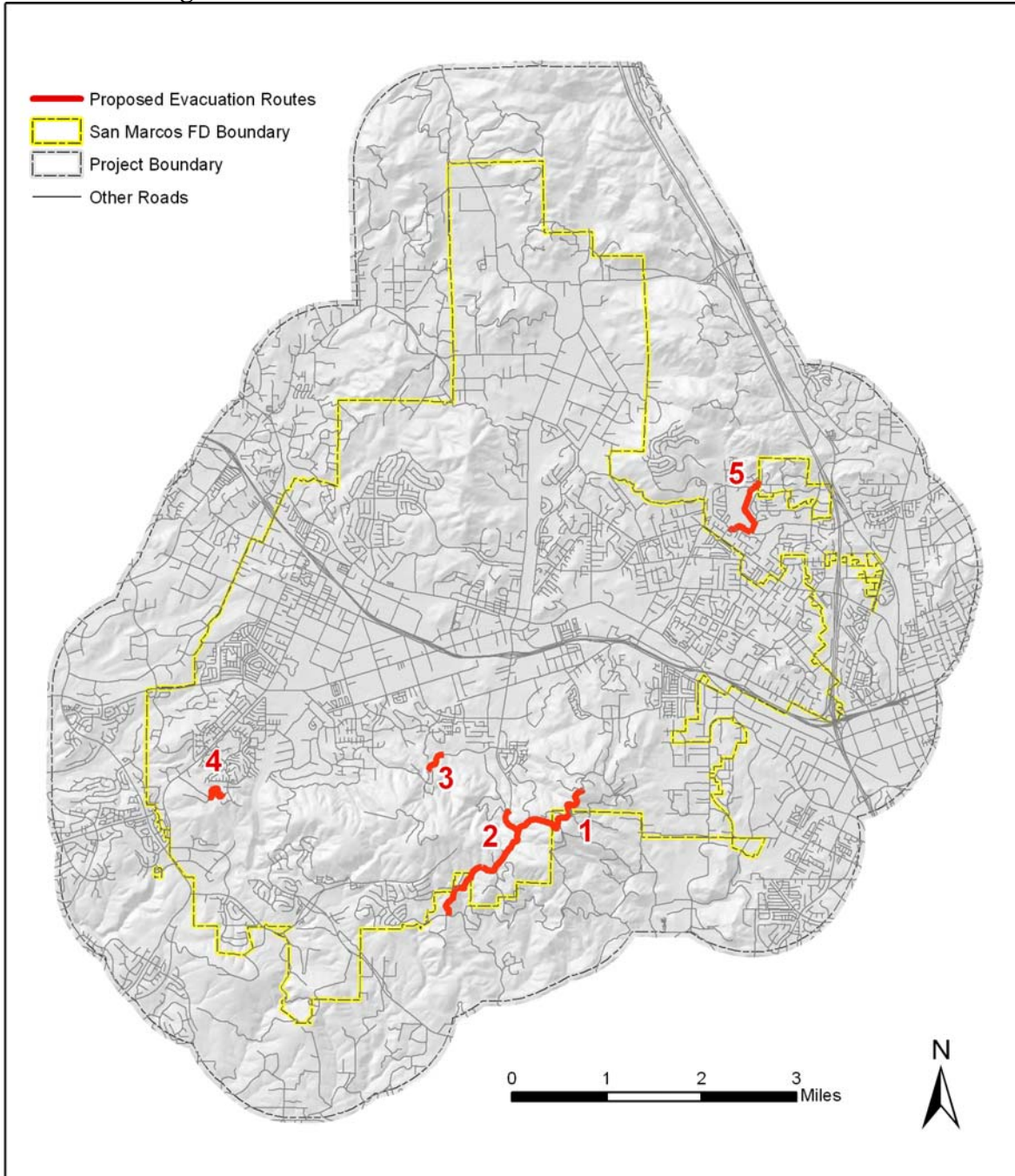
- **Attebury Water Tower Safety/Deployment Zone:**
  - 1) Continue implementation (if necessary) and maintenance
- **Attebury Road Fuels Reduction and Road Improvement:**
  - 1) Continue implementation (if necessary) and maintenance
- **Stone Ridge to Discovery Hills Access Road Fuels Reduction:**
  - 1) Continue to evaluate and maintain as necessary
- **Stone Canyon Linked Defensible Spaces:**
  - 1) Continue to evaluate and maintain as necessary
- **Stone Canyon Fuelbreak/Defensible Space:**
  - 1) Continue to evaluate and maintain as necessary
- **Via Allondra Linked Defensible Spaces and Overlot Thinning:**

- 1) Continue implementation (if necessary) and maintenance

**RECOMMENDATIONS FOR AREAS OF SPECIAL INTEREST**

- Continue implementation (if necessary) and maintenance of the comprehensive wildfire plan for the Golden Door Spa developed in the 2008 Annual Work Plan.

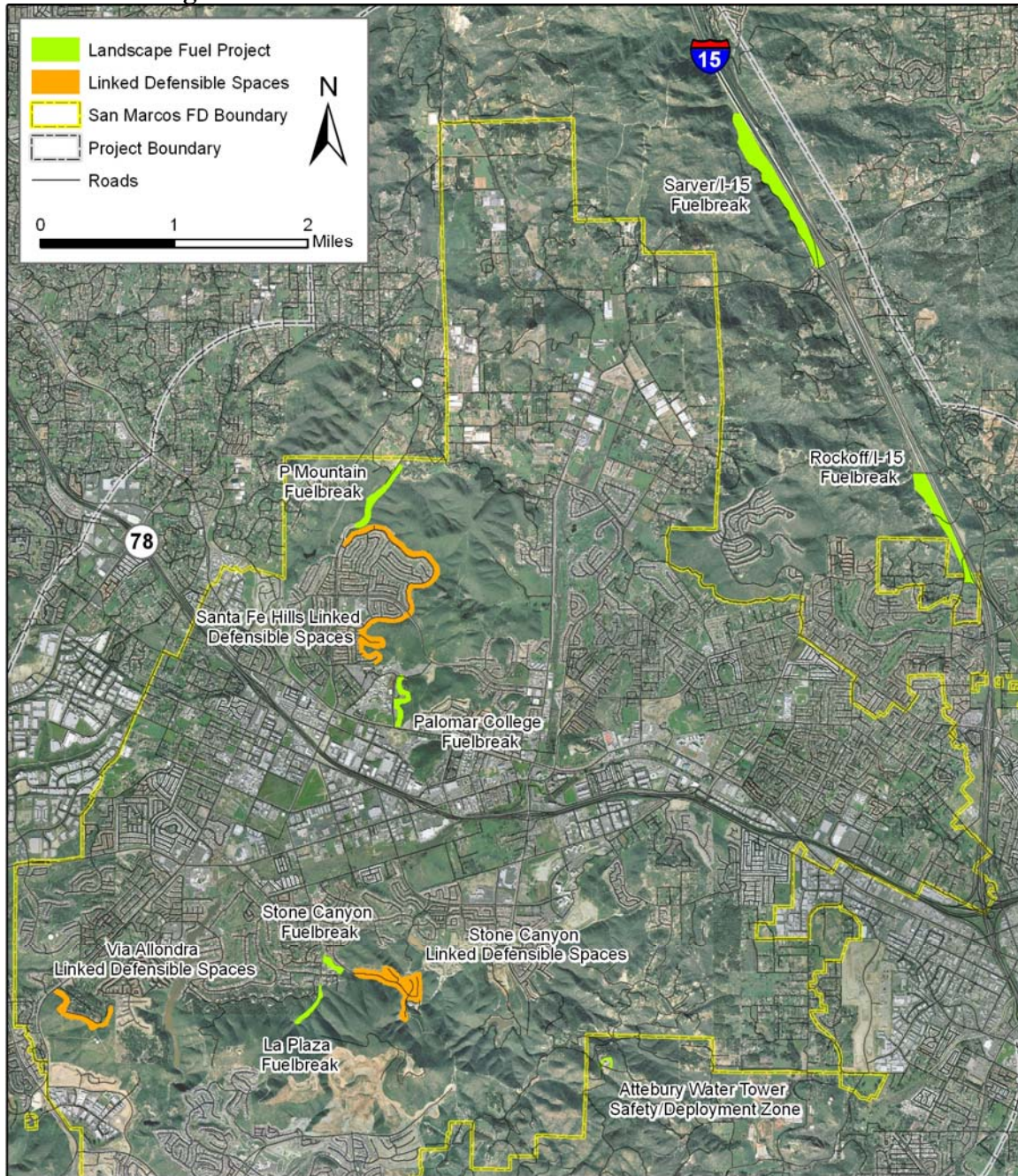
**Figure 13: San Marcos Evacuation Route Recommendations**



1. Attebury Road Improvements	4. Via Del Corvo to Cuadro Vista
2. Attebury Road to Twin Oaks Valley Road	5. Sleepy Hollow to David Glen
3. Stone Ridge to Discovery Hills	



**Figure 14: San Marcos Fuels Treatment Recommendations**



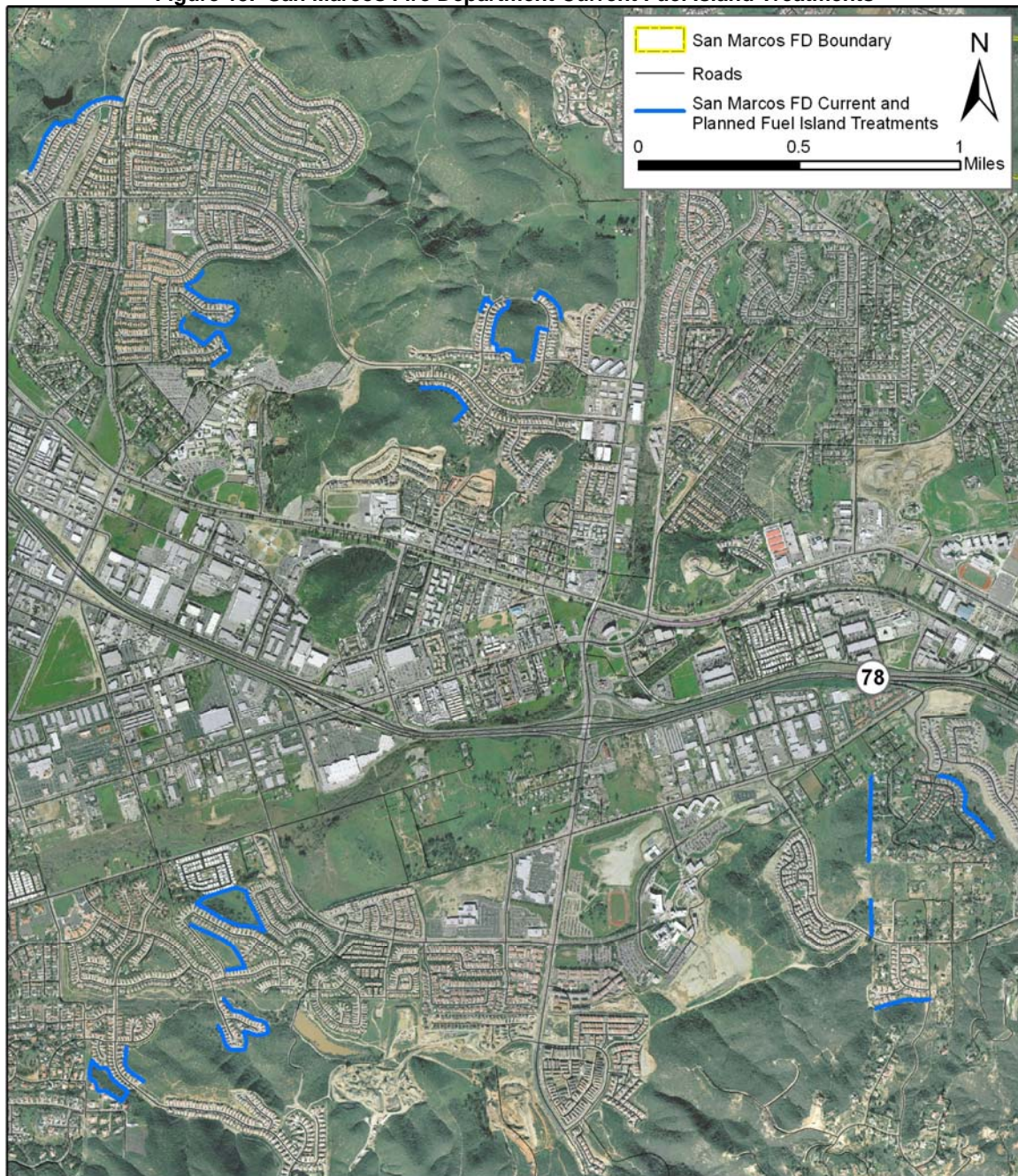
## **B. Existing Projects**

The San Marcos Fire Department is coordinating and funding fourteen current fuel modification projects within the SMFD response area (**figure 15**). These projects are intended to provide defensible space to at risk communities within our wildland urban interface areas. The annual work plan lists additional projects that have been proposed, planned and/or approved. These projects, as detailed in the annual work plans, consist of evacuation route improvements, fuels



reduction projects, safety zone identification and improvements, public education and addressing improvements.

**Figure 15. San Marcos Fire Department Current Fuel Island Treatments**



### SECTION III: TREATMENT OF STRUCTURAL IGNITABILITY

Personal responsibility for self-protection from wildfire is essential. A definitive shift to shared responsibility must be promoted. Homeowners must be made aware that fire suppression resources cannot be the only line of defense against wildland fires. Landowners and homeowners must take responsibility as key players in mitigation efforts. *The fire behavior analysis has shown landscape-scale fuels modifications may not be effective in preventing the loss of structures in the fuels and conditions that exist in the study area.* Defensible space planning, maintenance, ignition-resistant construction, and preventative landscaping techniques are critical to the mitigation of the loss of life and property during wildfire events. Educating homeowners is the first step in promoting this shared responsibility. Part of the educational process is defining the hazard and risks both at the community and parcel level.

Building construction type, condition, age, the fuel loading of the structure/contents and position are contributing factors in making homes more susceptible to ignition under even moderate burning conditions. Under extreme burning conditions, there is a likelihood of rapid fire growth and spread in some areas due to steep topography, flammable construction types, natural or manmade hazards, fast burning or flashy fuel components and topographic features that contribute to channeling winds and promotion of extreme fire behavior. Some areas may also represent a high threat to life safety, due to poor egress, the likelihood of heavy smoke and heat, and extended response times.

The most important element for the improvement of life safety and property preservation is for every home in the study area to have compliant, effective defensible space. This is especially important for homes with wooden roofs and homes located on steep slopes, in chimneys, saddles or any other topographic feature that contributes to fire intensity.

An aggressive program for evaluating and implementing defensible space for homes will do more to limit fire-related property damage than any other single recommendation in this report.

It is absolutely necessary that chaparral or any other type of dense/flammable vegetation be removed from around a home in order to reduce the risk of structural ignition during a wildfire. Creating defensible space involves the clearing of flammable vegetation such as pine and eucalyptus trees, grasses, and brush to a minimum of 100 feet from the structure for homes built prior to January 1, 2004, and 150 feet for those built after that date. Steep slopes and/or the presence of dangerous topographic features as described above may require the defensible space distances to be increased. Within the 100 to 150 foot defensible space, drought tolerant, low growing, fire resistive plants should be used. If vegetation is properly modified and maintained, a wildfire can be slowed down, the length of flames shortened, and the amount of heat reduced, all of which contribute to the survivability of the structure.

As identified in the Annual Work Plans, the San Marcos Fire Department will focus public education efforts upon those homes in at risk communities that have been identified as not having conforming defensible space. Through both mandatory brush abatement and voluntary defensible space efforts every effort will be made to obtain compliant, effective defensible space.



## **SECTION IV: SIGNATORS**

### **The Community Wildfire Protection Plan developed for San Marcos:**

- Was collaboratively developed. Interested parties and federal land management agencies in the vicinity of San Marcos have been consulted.
- This plan identifies and prioritizes areas for hazardous fuel reduction treatments and recommends the types and methods of treatment that will protect San Marcos.
- This plan recommends measures to reduce ignitability of structures throughout the area addressed by the plan.

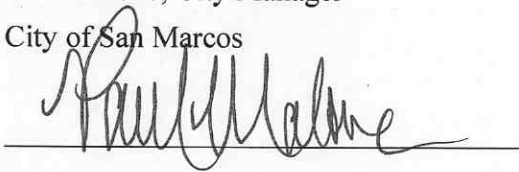
The following entities attest that the standards listed above are proposed to be met and mutually agree with the content of this Community Wildfire Protection Plan:

#### **Mandatory Signature Page**

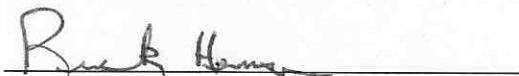
Todd Newman, Chief  
San Marcos Fire Department



Paul Malone, City Manager  
City of San Marcos



Rick Henson, Unit Chief  
CAL FIRE



Chandra Waller, Deputy Chief Administrative Officer  
County of San Diego, Land Use and Environmental Group

Kathleen Flannery for Chandra Waller

Ralph Steinhoff, Fire Services Coordinator  
County Of San Diego, Department of Planning and Land Use

Ralph Steinhoff