

## **ANNEX 11. CITY OF MORGAN HILL**

Morgan Hill is located in southern Santa Clara Valley approximately 24 miles south of downtown San Jose, 13 miles north of Gilroy, and 15 miles inland from the Pacific Coast. The community is bounded by the Santa Cruz Mountains to the west and the Diablo Range to the east. The planning area is delineated in Figure 11.1.

According to the 2010 U.S. Census Bureau, the city encompasses an area of 12.9 square miles. There are several flood control and water storage reservoirs in the adjacent hills, which are operated by the Santa Clara Valley Water District, with recreational activities such as boating, etc., administered by the Santa Clara County Department of Parks and Recreation.

### **ORGANIZATION AND JURISDICTION**

Morgan Hill is an incorporated city governed by an elected city council. Authority for land use planning, community design, infrastructure, and building codes rest with the Morgan Hill City Council.

Wildland urban interface (WUI) areas are defined by city ordinance and land use General Plan.

The City of Morgan Hill contracts with the California Department of Forestry and Fire Protection (CAL FIRE) to provide emergency medical services, fire prevention, and fire suppression from two city-owned fire stations and a CAL FIRE station at the south end of town.

### **PLANNING TEAM PARTICIPATION**

Fire Marshal Dwight Good and Division Chief Ed Orre represented the City of Morgan Hill on the planning core team. Community members participated in both rounds of workshops held at the Morgan Hill Community Center.

### **SUMMARY**

Morgan Hill contains WUI areas and is on the federal and/or California Fire Alliance list of communities at risk from wildfires in Santa Clara County.

Wildfires occur in the vicinity of Morgan Hill and present a danger to people and properties within the city.

Mitigations can reduce the risk of injury and damage. Some mitigations are solely the responsibility of property owners, other mitigations require neighborhood level action, and some require city government action.

## **WILDLAND URBAN INTERFACE AREA DESCRIPTION**

### ***WILDLAND URBAN INTERFACE AREA DEFINED***

The WUI area is delineated in Figure 11.1.

The western side of Morgan Hill contains CAL FIRE–recommended Local Responsibility Area very high fire hazard severity zones (FHSZs). The eastern area of Morgan Hill did not meet very high FHSZ status, therefore not requiring city council action to adopt. However, the surrounding unincorporated area is a high FHSZ. High FHSZs are capable of supporting severe fires with dangerous fire behavior.

The west side WUI areas inside city limits (Llagas Road and West Main Street areas) are designated state very high FHSZs, as are the wildland areas outside the western city limits. The balance of the WUI areas inside and adjacent to the city are designated high FHSZs. Fires with highest rates of spread and intensity usually occur in areas of high and very high fire hazard severity.

The eastside WUI area comprises the residential areas of Holiday Lake Estates and Jackson Oaks subdivisions that interface with Henry Coe State Park, open space areas, Anderson Lake County Park, Coyote Canyon, and Coyote Highlands.

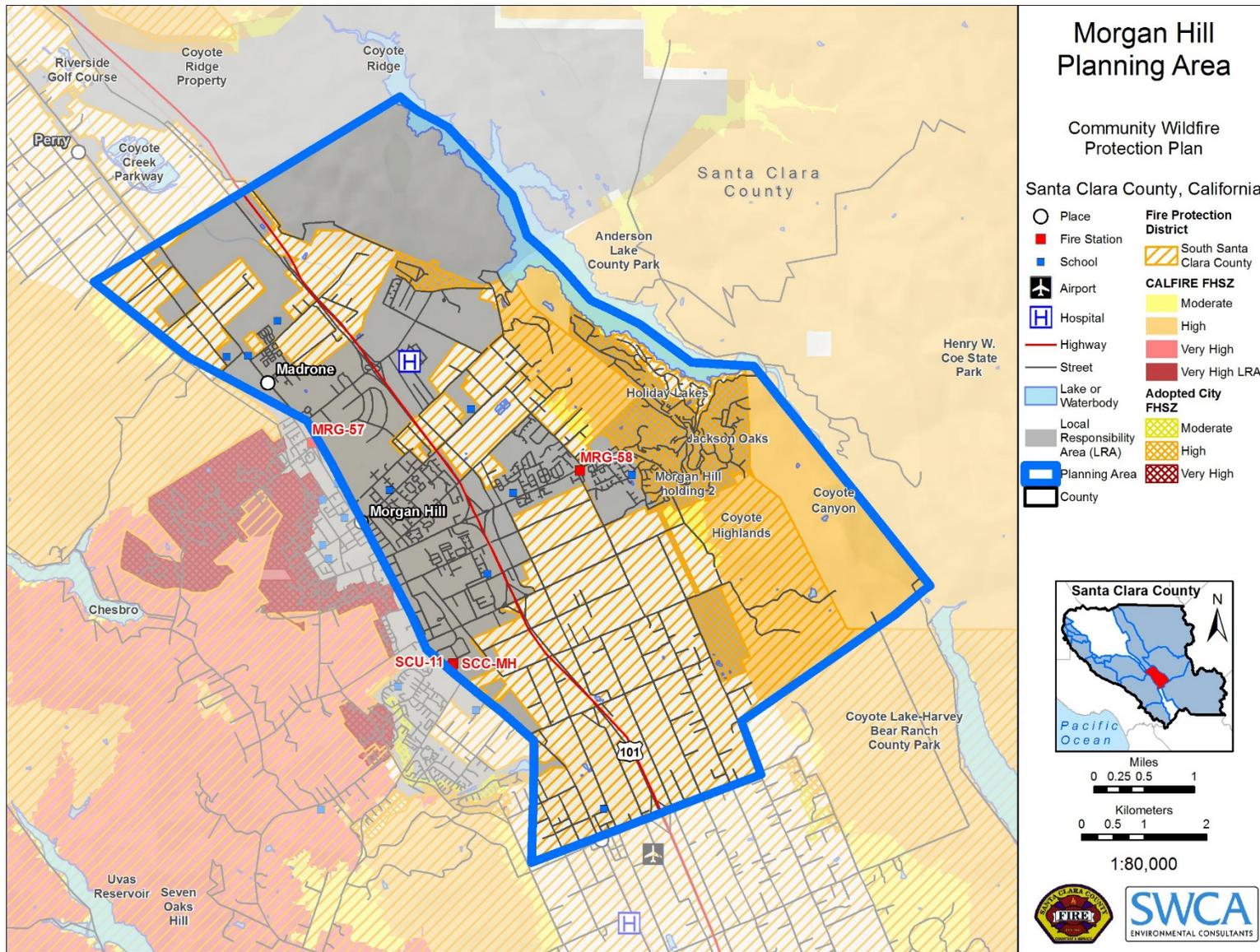


Figure 11.1. Morgan Hill planning area.

## ***FIRE HISTORY***

For fire history information, please see Figure 3.5 in the main Santa Clara County Community Wildfire Protection Plan (CWPP) document

## ***HAZARDOUS FUEL CHARACTERISTICS***

For fuel model information, please refer to Section 4.6.3 and Figure 4.3 in Chapter 4 of the main CWPP document.

## ***NEIGHBORHOOD AND STRUCTURAL CHARACTERISTICS***

Morgan Hill is a diverse community composed of retail/commercial core, high-density residential areas with small lots, and larger single-family homes in WUI areas. The city contains neighborhoods with highly flammable wildland vegetation.

The areas of greatest WUI concern are the Holiday Lake Estates community—comprising 512 homes on the hillside overlooking the south shore of Lake Anderson (Figure 11.2)—the adjacent Jackson Oaks community, and west side housing areas served by Llagas Road, Dewitt Avenue, and Sunnyside/Santa Teresa Boulevard. Holiday Lakes and Jackson Oaks are managed by homeowner associations (HOAs) that help facilitate wildfire preparedness messages. These communities are actively engaged in wildfire prevention activities and wildfire preparedness. The Jackson Oaks homeowners are dedicated to being the first recognized FIREWISE Community in Santa Clara County.

**Water Supply:** Morgan Hill has a good water supply through a hydrant system linked to Morgan Hill City Water.

**Roads and Access:** Access is generally good throughout the community with well-maintained roads. However, the Holiday Lake Estates and Jackson Oaks communities are accessed via one artery (East Dunne Avenue). In the event this road becomes unpassable, safe evacuation and emergency access will be compromised.

**Defensible Space Characteristics:** Most homes in WUI areas throughout Morgan Hill have well-maintained and irrigated yards with adequate defensible space. The Holiday Lakes and Jackson Oaks areas do have several properties without adequate defensible space. Flammable ornamental plants (i.e., junipers) are prevalent throughout the development. Notable in the Jackson Oaks community are homes with minimal setback from the slope and adjacency to open space property with long grass (Figure 11.3 and Figure 11.4).

Several homes have combustible wood roofs and siding and many have combustible decks and fencing (Figure 11.5). Some homes have long steep driveways with minimal turnaround, which may impede access by emergency vehicles.

The single access road, fast burning fuel, ridge top location, and incomplete defensible space present extraordinary risk for Holiday Lakes and Jackson Oaks.



**Figure 11.2.** View looking across Anderson Reservoir towards Morgan Hill (Holiday Lake Estates).



**Figure 11.3.** Grassy fuels on slope below home in Jackson Oaks subdivision.



**Figure 11.4. Coyote Highlands, adjacent to Jackson Oaks subdivision.**



**Figure 11.5. Combustible wood roof and flammable juniper ornamental landscaping.**

## **EMERGENCY RESPONSE CAPACITY**

First emergency response to Morgan Hill is provided by CAL FIRE. Morgan Hill fire response is from two city-owned fire stations and a CAL FIRE fire station:

- El Toro Fire Station, 18300 Old Monterey Road, Morgan Hill.
- Dunne Hill Fire Station, 2100 E. Dunne Avenue, Morgan Hill.

- A CAL FIRE station is also located within Morgan Hill City Limits: 15670 Monterey St, Morgan Hill.
- Additionally, mutual aid fire resources are available from other Santa Clara County fire agencies, including fire officers, fire engines, air tankers, helicopter, and hand crews.
- Morgan Hill and CAL FIRE staff created an excellent model WUI Response and Evacuation Preplan for the Anderson Lakes neighborhoods that should improve response efficiency and evacuation to this at risk community.

## **PUBLIC EDUCATION AND OUTREACH PROGRAMS**

Morgan Hill recognizes and supports the national Ready, Set, Go! program for community member preparedness. Morgan Hill is active in representation on the Santa Clara County Fire Safe Council (<http://www.SCCFireSafe.org>). This organization provides information regarding chipping programs, defensible space mitigation, personal preparedness, forest health issues, and much more. They also offer public meetings and forums to support wildfire awareness.

The Morgan Hill Fire Department and CAL FIRE provide extensive fire preparedness information and outreach activities for the local community. More information can be found at the following website: <http://www.morgan-hill.ca.gov/445/Fire-Department>.

## **POLICIES, REGULATIONS, ORDINANCES, AND CODES**

- Morgan Hill General Plan policies applicable to WUI fire hazard areas
  - 2b. Minimize development in fire hazard areas and plan and construct permitted development so as to reduce exposure to fire hazards and to facilitate fire suppression efforts in the event of a wildfire. (SCJAP 15.04)
  - 2c. Avoid actions which increase fire risk, such as increasing public access roads in fire hazard areas, because of the great environmental damage and economic loss associated with a large wildfire. (SCJAP 15.04)
  - 2.2 Continue to support special high FHSZ requirements.
  - 2.8 Where appropriate, allow development in areas where a second improved access road has been provided for emergency escape. (SCJAP 15.07)
  - 2.9 Update all information regarding hazardous areas to reflect current knowledge. (SCJAP 15.11)
- The City of Morgan Hill currently uses the 2013 California Building Code that includes required building standards for city-adopted WUI areas.
- The City of Morgan Hill Fire Prevention Division provides Standard Details and Specifications for fire prevention. The Morgan Hill Fire Marshal carries out fire prevention inspections in the area. More information on inspections and standards can be obtained from: <http://www.morgan-hill.ca.gov/1093/Fire-Marshal>.
- **Local Ordinances:** The Morgan Hill City Council has adopted local ordinances to regulate development in WUI areas inside city limits.

- **State Law:** The California Public Resources Code (PRC) sections provide standards for development of WUI areas outside the city limits. Only limited portions (primarily section PRC 4290 that addresses minimum community design standards in designated WUI areas) apply within the city limits.

California Health and Safety Code contains sections that the Morgan Hill Fire Marshal applies to developments and prevention activities.

## **HAZARD ASSESSMENT**

Community hazard assessments include ratings of community conditions compared to best practices for WUI fire mitigation. Community hazard ratings include consideration of applicable state codes, local ordinances, and recognized best practices guidelines. The community of Jackson Oaks completed a community hazard assessment as part of its Firewise Communities USA Recognition process. The full assessment can be found in Appendix 11-A.

The National Fire Protection Association Standard 1144 (NFPA 1144) defines WUI hazards and risks at the community and parcel level. This plan uses components of NFPA 1144, California laws, and local ordinances to evaluate neighborhood WUI hazard and risk. PRC 4290 and 4291 sections address WUI community design and defensible space standards.

The community risk assessment completed for the Morgan Hill community assigned the Holiday Lakes and Jackson Oaks WUI neighborhoods a risk rating of high with a score of 83 (<40 = low, >40 = moderate, >70 = high, >112 = extreme). Factors that contributed to the risk are illustrated below. Averages are taken across the community for each of these parameters.

The most serious deficiency for both of these neighborhoods is the absence of a secondary access/egress route. Maintaining appropriate defensible space and reducing combustible construction materials is the most immediate mitigation for this hazard. Ultimately identifying and creating additional access is essential (see Figure 11.6 for potential routes).

In addition to the on-the-ground hazard assessment, the CWPP also includes a Composite Fire Risk/Hazard Assessment that uses fire behavior modeling to determine potential fire behavior and is based on fuel characteristics, topography, weather, and fire history. The Composite Risk/Hazard Assessment for the planning area is shown in Figure 11.7. For more information on the methodology for this assessment please refer to Section 4.6.1 in Chapter 4 of the CWPP.

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<b>Parameter</b>	<b>Condition</b>	<b>Rating</b>
Access	Two roads in and out but access still concern	+/-
	Narrow road width	-
	Surfaced road with greater than 5% grade	+
	Poor fire access, dead end spurs, lack turnaround	-
	Street signs are present, some are non-reflective	+/-
Vegetation	Adjacent fuels: light	+
	Defensible space: >30 feet < 70 feet around structures	+/-
Topography within 300 feet of structure	21%–30 %	-
Topographic features	Moderate to high concern	+/-
History of high fire occurrence	Low	+
Severe fire weather potential	Low	+
Separation of adjacent structures	Limited separation	+/-
Roofing assembly	Class B	+/-
Building construction	Non-combustible siding, combustible deck	+/-
	Building setback < 30 feet to slope	-
Available fire protection	Water: hydrants present with variable pressure	+
	Response: station <5 miles from structure	+
	Internal sprinklers: none	-
Utilities	One above and one below ground	+/-
<b>Risk Rating - High (83)</b>		

***PARCEL LEVEL ASSESSMENT***

A model for determining parcel level risk and effect of mitigations has been developed through this CWPP project. The model can use information available through public record for basic analysis but can be further refined with a site visit with property owner for a thorough analysis of risk score. The County will be seeking funding to fully implement this parcel level assessment in the future. The goal is for the property owner to be able to use this analysis to determine the most effective steps they can take to take to reduce their risk. For more information refer to Chapter 4 in the countywide CWPP document.



Figure 11.6. Potential access routes (shown in red) for Anderson Lake area.

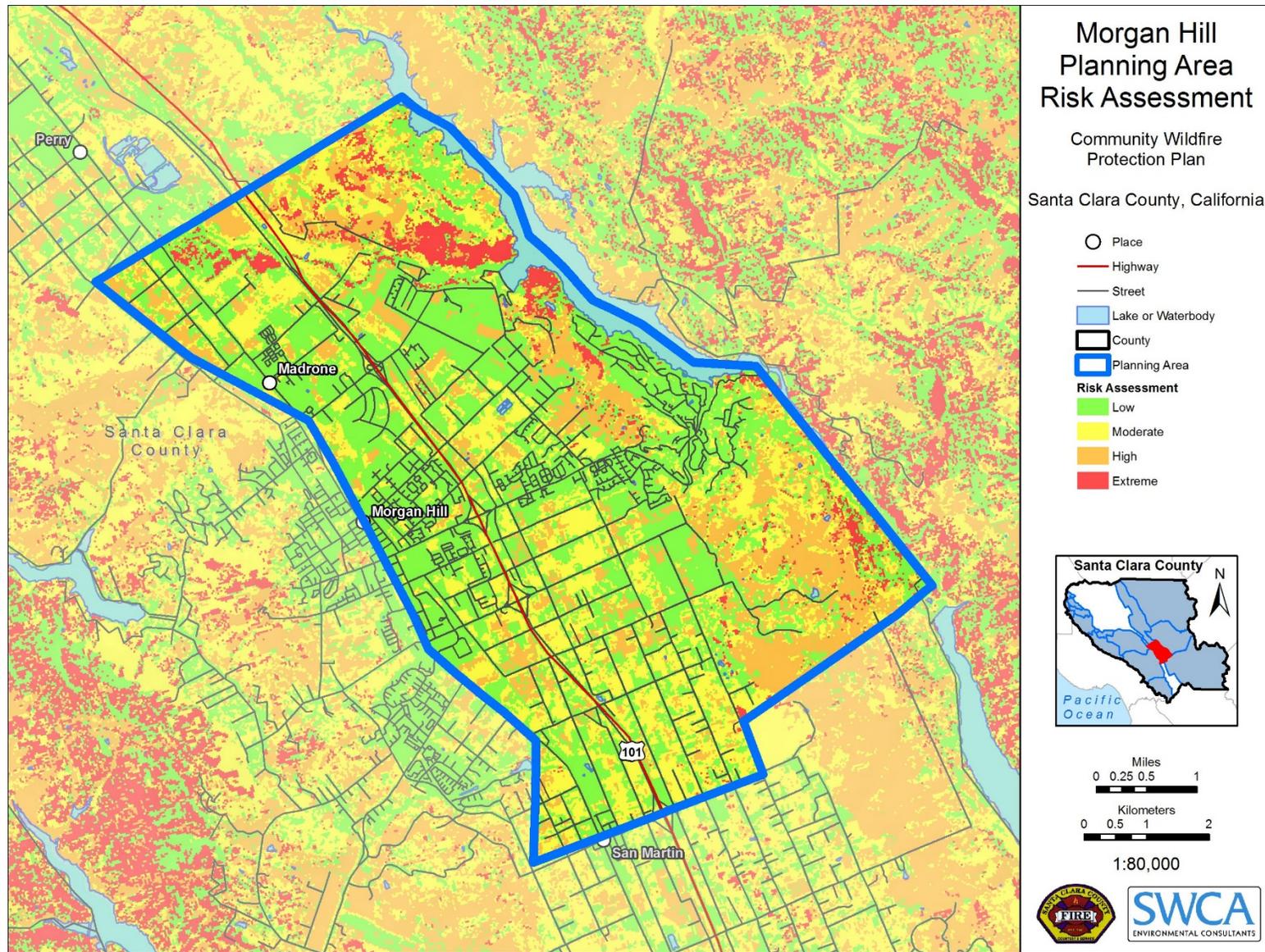


Figure 11.7. Composite Risk/Hazard Assessment for Morgan Hill.

## **IDENTIFY CRITICAL INFRASTRUCTURE AND COMMUNITY VALUES AT RISK**

Protecting critical infrastructure is of highest priority. Losses are not just the cost of replacing a physical facility, but the cost associated with loss of the service, which can be significantly more than the facility costs. Loss of services from infrastructure sites can also be far reaching and affect people and operations at considerable distance from the fire itself.

Critical infrastructure is defined as electrical substations and transmission facilities; cellular, television, radio, and other telecommunication sites; railroad structures; highway structures; navigation and coordination facilities; and other sites that are crucial to providing and coordinating essential and business services.

The planning area also includes a large portion of open space, including the Coyote Highlands, Coyote Canyon, Anderson Lake County Park, and Coyote Ridge. These areas are valued for their natural resources and sensitive wildlife habitat, as well as recreational values. In addition to public open space, there are a number of private ranches in the planning area.

There are a number of commercial businesses within the WUI area, including wineries, golf courses, and equestrian facilities. The William F James Boys Ranch – Juvenile Hall is located in the northeast section of the planning area, immediately adjacent to Anderson Lake County Park. A facility of this type presents extraordinary evacuation conditions.

Other Community Values at Risk include life safety, homes and property values, infrastructure, recreation and lifestyle, wildlife habitat, watershed protection, and environmental resources.

## **MITIGATION PROJECTS AND PRIORITIZATIONS**

The following project matrixes have been developed by the community and Core Team to direct specific project implementation for Morgan Hill (Table 11.1–Table 11.5). The matrixes below are tiered to the strategic goals presented in the body of the CWPP through project IDs in the first column of each matrix. The matrixes are broken down into projects to address:

- Hazardous Fuel Reduction
- Firefighting Capability
- Public Education and Outreach
- Structural Ignitability
- General Planning

A treatment map has been developed by the Core Team for fuel treatments in the area (Figure 11.8). Many of these projects have been part of ongoing planning by the Santa Clara County Fire Safe Council in conjunction with public and private stakeholders. These projects are conceptual in nature and are therefore subject to change as this document undergoes future revisions.

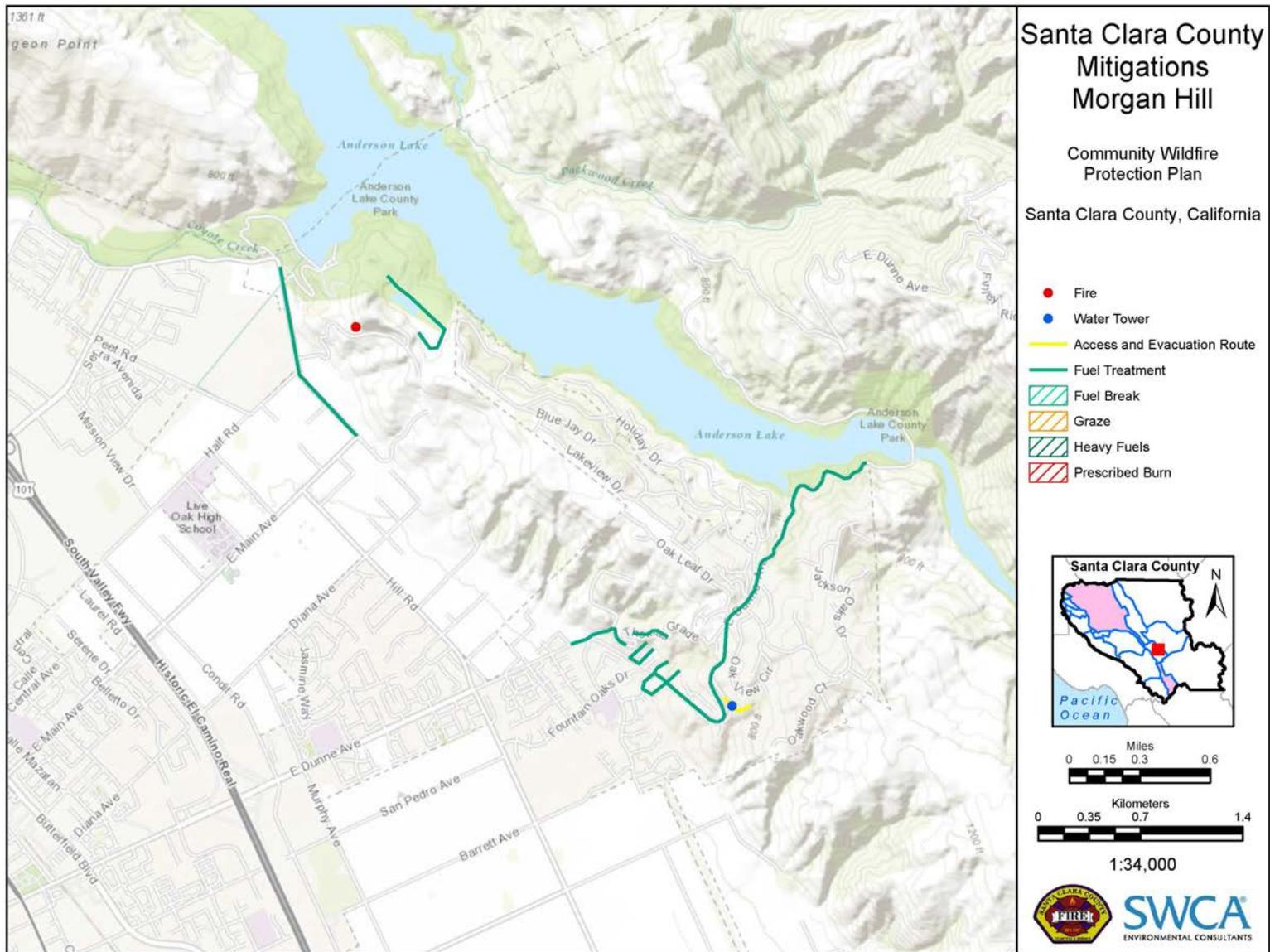


Figure 11.8. Mitigations for Morgan Hill

**Table 11.1. Recommendations for Fuel Reduction Projects in Morgan Hill**

ID	Project Description	Location and Land Ownership	Method	Serves to:	Timeline for Action	Priority (1,2,3)	Monitoring	Resources/Funding Sources Available
<b>Strategic Goal FR7: Develop roadside fuel treatment program, including suite of methods available and sustainability mechanism</b>								
<b>MH-FR7.1</b>	Improve ingress/egress capabilities through installation of fuel breaks and brushing.	Morgan Hill WUI areas.  Public and privately owned/maintained road systems.  E Dunne Ave to Anderson Reservoir to provide safe evacuation.	Limb trees and remove brush along roadways to at least reclaim full original width and height. Goal: minimum 20-foot clear width and 15-foot clear height.	Ensure the safe and rapid evacuation of residents during fire response and suppression activities.	Fall 2016	1	Regular maintenance needed to ensure the fuel break remains clear of vegetation.  Monitor for erosion and invasive species.	Morgan Hill Public Works - General Fund Budget.  CAL FIRE crews - Public Works budget.  Local community groups - donations and grant funding.
<b>MH-FR7.2</b>	Seek funding for erosion control projects to stabilize steep roads for evacuation and emergency response.	Morgan Hills WUI areas.  Public and privately owned/maintained road systems.	Installation of erosion control features to reduce potential erosion on steep slopes that may impact access roads.	Keep access roads clear.	Fall 2017	1	Monitor for erosion and invasive species.	Morgan Hill Public Works - General Fund Budget.
<b>Strategic Goal FR4: Encourage use of prescribed fires where ecologically sound and feasible</b>								
<b>MH-FR4.1</b>	Encourage use of prescribed fires where ecologically sound and feasible.	County parks, state parks, CAL FIRE	Use prescribed burn planning that follows agency and regulator protocols.  Closely follow plan prescriptions.	Reduce fuel loading of fine fuels and understory species to mitigate potential for intense fire behavior in the event of an unplanned ignition.	Ongoing	1	Regular monitoring needed to ensure against environmental damage and invasive species into burned areas.  Monitoring to determine project success in reducing fuel loading.	Grants: CAL FIRE VMP program, SRA(only on SRA lands), CA FSC, CFIP, NRCS
<b>Morgan Hill specific projects - non tiered</b>								
<b>MH FR 1</b>	Establish fuel breaks.	Morgan Hill Holiday Lakes Estates subdivision, County Parks and Open Space Authority, and private property.	Establish new fuel break on the western slope below the Holiday Lakes Estates subdivision.  Encourage cooperation between public and private landowners.	Slow the spread of fire up this slope.  Reduce the intensity of possible flame fronts.	Spring 2017	2	Regular maintenance needed to ensure the fuel break remains clear of vegetation.  Monitor for erosion and invasive species.	Morgan Hill Public Works - General Fund Budget.  CAL FIRE crews and dozers - Public Works budget.  Local community groups - donations and grant funding.

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<b>ID</b>	<b>Project Description</b>	<b>Location and Land Ownership</b>	<b>Method</b>	<b>Serves to:</b>	<b>Timeline for Action</b>	<b>Priority (1,2,3)</b>	<b>Monitoring</b>	<b>Resources/Funding Sources Available</b>
<b>MH FR 2</b>	Improve fuel breaks.	Morgan Hill WUI areas, Open Space Authority, and city owned lands.	Evaluate existing trail systems. Identify strategic locations for shaded fuel breaks in new and existing trail systems.	Slow the spread of fire. Reduce the intensity of fires originating on or near trails.	Spring 2018	3	Regular maintenance needed to ensure the fuel break remains clear of vegetation. Monitor for erosion and invasive species.	Morgan Hill Public Works - General Fund Budget. CAL FIRE crews - Public Works budget. Local community groups - donations and grant funding.
<b>MH FR3</b>	Implement hillside vegetation programs to encourage native fire safe vegetation establishment.	Morgan Hill WUI areas, Open Space Authority, and city owned lands.	Invasive species removal- (i.e., Control of Broom along Thomas Grade), erosion control and planting of native species.	Reduce invasion by exotic species that can alter fire regimes.	Spring 2018	2	Monitor for erosion and invasive species.	Local community groups - donations and grant funding.

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**Table 11.2. Recommended Firefighting Capability Projects in Morgan Hill**

ID	Project Description	Fire Department/Agency	Benefits of the Project to the Community	Timeline/Priority (1,2,3)	Resources/Funding Sources Available
<b>Strategic Goal FC13: Develop a coordinated approach between fire jurisdictions and water supply agencies to identify needed improvements to the water distribution system, initially focusing on areas of highest wildfire hazard.</b>					
<b>MH-FC13.1</b>	Improve firefighting water supplies in Holiday Lakes and Jackson Oaks subdivisions.	Morgan Hill Public Works.	Increase available fire flow in these neighborhoods. Add fire hydrants to new main line on E. Dunne Avenue. Provide redundancy in water supply infrastructure. Increase capacity of gravity-fed water supplies.	Fall 2016/1	General Fund.
<b>Strategic Goal FC8: Where road systems are antiquated and do not provide for proper evacuation or two-way flow, require removal of obstructions or upgrade to minimum two-lane road system over time.</b>					
<b>MH-FC8.1</b>	Improve ingress/egress capabilities.  Add shoulders and widen roads where possible.	Morgan Hill Jackson Oaks and Holiday Lakes Estates subdivisions, County Parks and Open Space Authority, private property, and city lands.	Establish secondary access roads into Holiday Lakes and Jackson Oaks subdivisions.  Ensure the safe and rapid evacuation of residents during fire response and suppression activities.	Fall 2018/2	Morgan Hill Public Works - General Fund Budget. CAL FIRE crews and dozers - Public Works budget. Local community groups - donations and grant funding.
<b>Strategic Goal: Implement countywide program to replace existing house number markers with reflective markers that meet consistent standard.</b>					
<b>MH-FC12.1</b>	Improve road, street, and address, identification using reflective materials.  Provide signage on flag lots and streets lacking signage.	Morgan Hill WUI areas.  Privately owned/maintained road systems.	Repaint, re-letter, or replace road/street signs that do not meet existing standards; install additional road/street signs to ensure identification from either direction of travel. Post community address signs to identify unmarked residences. Ensure the rapid identification of streets, roads, and addresses, during an emergency.	Spring 2017/2	Morgan Hill Public Works - General Fund Budget.  Local community groups - donations and grant funding.  HOAs annual dues
<b>Morgan Hill specific project - non tiered</b>					
<b>MH-FC1</b>	Add hand crew capabilities.	CAL FIRE, Santa Clara County Juvenile Justice System.	Use juveniles in corrections setting for public service.  Form hand crews from available inmates for rapid response and increased firefighting capacity.	Summer 2018/2	Undetermined
<b>MH FC2</b>	Seek funding for road improvements on roads in Jackson Oaks- i.e. pot holes	Privately owned/maintained road systems.	Enhance emergency response times and evacuation.	Fall 2017/2	Morgan Hill Public Works - General Fund Budget.

**Table 11.3. Recommended Public Education and Outreach Projects in Morgan Hill**

ID Morgan Hill (MH)	Project	Presented by	Target Date	Priority (1,2,3)	Resources Needed	Serves to
<b>Strategic Goal EO3: Organize a community group made up of residents and agency personnel to develop materials and communicate relevant defensible space messages. Could coordinate with fire departments or Fire Safe Council. Possibility to coordinate actual implementation of defensible space and slash clear-up with the local Eagle Scout group or high school volunteers.</b>						
MH-EO3.1	Organize a community group made up of residents and agency personnel to develop materials and communicate relevant defensible space messages. Could coordinate with fire departments or Fire Safe Council.	Fire Safe Council, fire departments, local residents, Eagle Scouts, High School Community Volunteer Program.	Spring 2017	1	Funding to help cover costs of materials (green waste removal or chipper) and participation.  People trained in defensible space practices.	Engage diverse stakeholders in reaching out to community members and encourage defensible space practices.  Empower homeowners to make affordable and effective changes to reduce the vulnerability of individual homes.
MH-EO3.2	Homeowner's Guide.  Provide copies of an existing guide for homeowners in the WUI to inform them and encourage them to prepare.	Morgan Hill Fire Department.	Spring 2017	2	Funding to purchase and distribute 5,000 copies of the guide.	Give residents detailed and locally specific tools that they can use to improve preparedness.
<b>Strategic Goal EO7: Plan livestock evacuation routes and inform communities. Work with emergency management officials to plan evacuation routes for residents with livestock and then hold community meetings to disseminate to the public.</b>						
MH-EO7.1	Address density of livestock in planning area and provide plan in event of wildfire.	Emergency management officials, livestock agencies/ civic groups.	Fall 2018	2	GIS software or maps - coordinate with EQ Clearing House - GIS sharing.	Protect communities, livestock and infrastructure through increased awareness.
<b>Strategic Goal EO13: Implement Firewise Communities programs. Work with communities to participate in Firewise Communities and prepare for fire events. Hold Firewise booths at local events for example during the October Fire Awareness Week each year.</b>						
MH-EO13.1	Encourage all Morgan Hill WUI neighborhoods to become certified Firewise Communities.	Fire Safe Council, CAL FIRE, County Fire.	Fall 2018	2	Firewise Communities educational materials.	Protect communities and infrastructure through increased awareness and defensible space.

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**Table 11.4. Recommendations for Structural Ignitability Projects in Morgan Hill**

ID	Project	Presented by	Programs Available	Description	Contact	Priority (1,2,3) /Date
<b>Strategic Goal: SI 10: Public education program for embers and problems associated with embers, property hygiene, and defensible space.</b>						
MH-SI10.1	WUI fire protection workshops.	Local Fire Marshal.  All residents would be encouraged to participate.	Firewise, agency outreach personnel, Ready, Set, Go!  Tailor to specific risk/hazards in each community	Offer hands-on workshops to highlight individual home vulnerabilities and how-to techniques to reduce ignitability of common structural elements.	Fire Marshal, Firewise personnel, CAL FIRE.	1/Spring 2017
<b>Strategic Goal SI4: Adopt common defensible space standards throughout the county and Strategic Goal SI 19: Create a countywide defensible space ordinance for parcels below certain size acreage (parcel size: e.g., 2 acres?), if not cleared by owner, then county will clear. Could be tied to county weed abatement program.</b>						
MH-SI4.1  and  MH-SI9.1	Stronger defensible space regulations.	Regional Fire Marshals, to be adopted locally in the 2016 California Fire Code cycle.	Based on existing state laws and standards.	New emphasis on maintenance, presented in plain language and a logical progression.  Eliminate current jurisdictional limitations.	Regional Fire Marshals.	1/Spring 2017
<b>Strategic Goal SI7: Promote Firewise Community recognition program countywide; consider SCL amendments to Firewise; partner with CERT and Neighborhood Watch.</b>						
MH-SI7.1  Links to MH-EO-13.1	Firewise Communities certification.  Establish and support a new Firewise Communities Group.  Jackson Oaks already moving towards certification. Holiday Lakes to follow similar process.	Fire Safe Council, CAL FIRE, County Fire.	Firewise Communities USA.	Fire risk analysis of the Jackson Oaks and Holiday Lakes subdivisions.  Staff hours to facilitate and support.  Give residents ownership of the fire problem, provide resources and information necessary to inform and prepare the community for fire.	Morgan Hill Fire Department.	1/Fall 2018

**Table 11.5. Recommendations for General Planning Projects in Morgan Hill**

ID	Project Description	Method	Timeline for Action	Priority (1,2,3)	Monitoring/Sustainability	Resources/Funding Sources Available
<b>Strategic Goal GP1: Ensure project sustainability.</b>						
MH- GP1.1	The CWPP serves as the wildfire component of Morgan Hill Local Hazard Mitigation Plan (LHMP) and General Plan - Safety and other element amendments.	Work with city planning to identify timeline for incorporation in next LHMP update.  Aim to have the strategic-level CWPP incorporated into the Safety Element of the General Plan when the safety element is next revised. Getting it into the General Plan is equivalent to getting the CWPP adopted.	Next 5 years	2	The core group of stakeholders would need to ensure that the document is kept relevant in that time and position it for incorporation.	Internal funding
MH- GP1.2	Ensure project sustainability.	Have a target date for updating the datasets used in the risk assessment model and re-running the model. Establish trigger points for updating CWPP.  Make contact with Santa Clara County Fire Department to note your interest in participating in the project and identify CWPP meeting schedule.	Annually	1	Establish annual oversight of the CWPP and project status.  Get buy-in from Core Team members for long-term commitment to CWPP review.	Internal funding
MH- GP1.3	Designate a member to the Countywide CWPP Core Team for CWPP updates.	Identify staff and convene a kickoff of the working group and identify tasks and goals for CWPP updates.	Meet quarterly	1	Commit to attendance at one CWPP meeting annually.	Internal funding
MH- GP1.4	Develop methods for sustainability of hazardous fuel reduction.	Develop action for city council to adopt method to fund sustainable hazardous fuel maintenance (such Mello-Roos Community Facility Districts for new subdivisions).	As needed	2	Enactment of policy.	Internal funding
<b>Strategic Goal GP2: Parcel Level Defensible Space Inspection Task Force</b>						
MH-GP2.1	Join countywide task force to do parcel level inspection work to enhance model; utilize portable data collection and ArcGIS as analysis tools.	Carryout parcel level assessments to enhance risk assessment model components at a finer scale.  Add data to model and re-run as necessary.	2 years	1	Set target number of parcels to be assessed each year. Review number of parcels assessed each year at annual CWPP meeting.	Internal funding
<b>Strategic Goal GP3: Develop countywide standard and method for continued data gathering and risk analysis.</b>						
MH-GP3.1	Use a countywide standard and method for continued data gathering and risk analysis.	Conduct funding to purchase a commercial application, such as Fulcrum, that provides a standard data collection platform that could be used on a smart phone/tablet.	2 years	1	Annual review of progress as part of Core Team.	California Fire Safe Council clearinghouse grants; internal funding

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ID	Project Description	Method	Timeline for Action	Priority (1,2,3)	Monitoring/Sustainability	Resources/Funding Sources Available
<b>Strategic Goal GP5: Add hyperspectral and LiDAR imaging to periodic aerial photography flights.</b>						
<b>MH-GP5.1</b>	Seek LiDAR and hyperspectral imagery for aerial photography of Morgan Hill.	Work in conjunction with the City Planning, County Assessor, or others to add additional sensing cameras to aerial photo flights.  Hyperspectral and LiDAR can provide in depth identification and analysis of hazards and risks.	1–3 years	1	Periodic new flights to update data sets.	Grants: Federal Emergency Management Agency, Department of Homeland Security, State Responsibility Area, Greenhouse Gas Reduction

## **APPENDIX 11-A**

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FIREWISE COMMUNITIES/USA® RECOGNITION PROGRAM COMMUNITY ASSESSMENT  
PREPARED FOR THE COMMUNITY OF JACKSON OAKS, 07/19/16

1) Introduction

The Firewise Communities/USA program is designed to provide an effective management approach for preserving wildland living aesthetics. The program can be tailored for adoption by any community and/or neighborhood association that is committed to ensuring its citizens maximum protection from wildland fire. The following community assessment is intended as a resource to be used by the Jackson Oaks residents for creating a wildfire safety action plan. The plan developed from the information in this assessment should be implemented in a collaborative manner, and updated and modified as needed.

Morgan Hill City Fire Marshal Dwight Good conducted this community risk assessment with assistance from CAL FIRE Santa Clara Unit Forester Ed Orre, Dr. Robert Sieben, author of *A Homeowner's Guide to Wildfire Prevention*, and Carol Rice, author of *Managing Fire in the Urban Wildland Interface*. Additional assistance was provided by SWCA Environmental Consultants during their work on the Santa Clara County Countywide Community Wildfire Prevention Plan (CWPP).

2) Definition of the Home Ignition Zone –

The Jackson Oaks community (Jackson Oaks) is located in a wildfire environment. Wildfires will happen--exclusion is not a choice. The variables in a fire scenario are when the fire will occur, and where. This assessment addresses the wildfire-related characteristics of Jackson Oaks. It examines the area's exposure to wildfire as it relates to ignition potential. The assessment does not focus on specific homes, but examines the community as a whole.

A house burns because of its interrelationship with everything in its surrounding home ignition zone---the house and its immediate surroundings. To avoid a home ignition, a homeowner must eliminate the wildfire's potential relationship with his/her house. This can be accomplished by interrupting the natural path a fire takes. Changing a fire's path by clearing a home ignition zone is an easy-to-accomplish task that can result in avoiding home loss. To

accomplish this, flammable items such as dead vegetation must be removed from the area immediately around the structure to prevent flames from contacting it. Also, reducing the volume of live vegetation will affect the intensity of the wildfire as it enters the home ignition zone.

Included in this assessment are observations made while visiting Jackson Oaks (Figure 1). The assessment addresses the ease with which home ignitions can occur under severe wildfire conditions and how these ignitions might be avoided within the home ignition zones of affected residents. Jackson Oaks residents can reduce their risk of destruction during a wildfire by taking actions within their home ignition zones. This zone principally determines the potential for home ignitions during a wildland fire; it includes a house and its immediate surroundings within 100 to 150 feet.

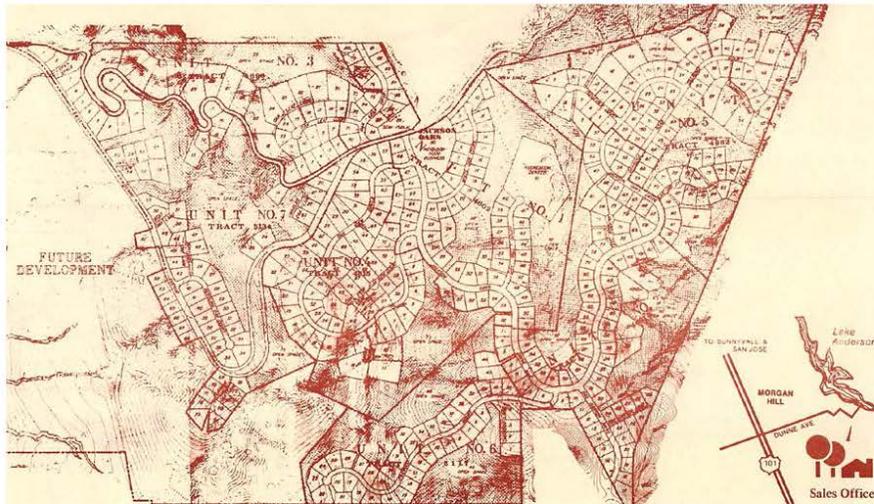


Figure 1. Map from original Real Estate development showing layout of Jackson Oaks.

The result of the assessment is that wildfire behavior will be dominated by the residential characteristics of this area. The good news is that by addressing community vulnerabilities, residents will be able to substantially reduce their exposure to loss. Relatively small investments of time and effort will reap great rewards in wildfire safety.

3) DESCRIPTION OF THE SEVERE CASE WILDLAND FIRE CHARACTERISTICS THAT COULD THREATEN THE AREA

Fire intensity and spread rate depend on the fuel type and condition (live/dead), the weather conditions prior and during ignition, and the topography. Generally the following relationships hold between the fire behavior and the fuel, weather and topography.

- Fine fuels ignite more easily and spread faster with higher intensities than coarser fuels. For a given fuel, the more there is and the more continuous it is, the faster the fire spreads and the higher the intensities. Fine fuels take a shorter time to burn out than coarser fuels.
- The weather conditions affect the moisture content of the dead and live vegetative fuels. Dead fine fuel moisture content is highly dependent on the relative humidity and the degree of sun exposure. The lower the relative humidity and the greater the sun exposure, the lower will be the fuel moisture content. Lower fuel moistures produce higher spread rates and fire intensities.
- Wind speed significantly influences the rate of fire spread and fire intensity. The higher the wind speed, the greater the spread rate and intensity.
- Topography influences fire behavior principally by the steepness of the slope. However, the configuration of the terrain such as narrow draws, saddles and so forth can influence fire spread and intensity. In general, the steeper the slope, the higher the uphill fire spread and intensity.



Figure 2. Aerial photo of Jackson Oaks (highlighted) to depict topography and fuels.

The greatest risks of wildfire in Jackson Oaks come from outside the community. Limited access/egress, fast burning fuel models, ridge top location, and incomplete defensible space present extraordinary risk for Jackson Oaks.

Jackson Oaks is located just west and south of Anderson Lake - Santa Clara County's largest reservoir – and 3,144 acre Anderson Lake County Park which includes a boat launch, multiple use trails and a historic park site. At its closest point, Anderson Lake is within 1000' of Jackson Oaks.

Anderson Lake provides the neighboring Holiday Lakes Estates community with more than a mile of south shore waterfront. Holiday Lakes and Jackson Oaks are each 45-year old suburban foothills developments built on hillsides and ridges with grades averaging 34%. Elevations

range from 441' to 1230' in a semi-arid Mediterranean type climate. Hot, dry winds, and low humidity, are common to the area. Winter rains promote the growth of grass and brush, creating heavy dry fuel loads in the summer months. Both communities are within High Fire Hazard Severity Zones, as identified by CAL FIRE's Fire Resource and Assessment Program.

Holiday Lakes and Jackson Oaks each contain about 500 homes. Holiday Lakes is located in a mature moderate load conifer and oak woodland. Jackson Oaks is located in an oak/grass model but the fuel load is primarily non-native; flammable ornamental plants (i.e. junipers) are prevalent. Drought stress and damaging forest pest species are steadily changing the canopy. Although these communities are served by Morgan Hill's municipal water supply, the infrastructure is aging and available firefighting water supplies are marginal at best.

Most homes in these communities have well-maintained yards with adequate defensible space, but both communities also have properties without adequate property hygiene. Jackson Oaks is surrounded by expansive open space areas - continuous seasonal grasslands on steep hillsides - and homes on the borders of these open spaces have minimal setbacks from the slope and fuel.



Photo 1. Jackson Oaks homes bordering open space.

Holiday Lakes is comprised of .5 to 1 acre lots with houses under mature canopy on narrow roads; unnamed/unmarked roads and driveways make access difficult. Jackson Oaks is similarly comprised of developed .3 to .5 acre lots. Both communities use small non-reflective street signs that are typically visible from only one direction of travel. Both communities are served by a network of steep, narrow, winding, two-lane roads, without adequate shoulders or fuel

breaks.



Photo 2. Street sign lettering, scale.



Photo 3. Street signs, typical front.



Photo 4. Two lane road, typical. No shoulder or fuel break.

There is only one road into and out of the Jackson Oaks and Holiday Lakes communities (Figure 2, Photos 6 and 7). That road is also a steep, winding, two lane artery. In the event that this road becomes impassible, access and egress will be compromised. Many homes in these communities still have combustible wood roofs (Photos 5, 10 and 16), siding, decks and fencing. Some homes have inaccessible driveways (Photo 12) or minimal turnaround area, which threaten to delay firefighting efforts.



Photo 5. Combustible Wood Roof.



Photo 6. Base of E. Dunne Ave. The only access road into Jackson Oaks/Holiday Lakes.



Photo 7. Mid-slope on E. Dunne Ave.

There are three pronounced drainages that intersect Holiday Lakes, leading from the shores of Anderson Lake west to the ridge line. Using predictive wildfire modeling software with "average bad day" inputs, we have identified the following scenario:

A structure or vehicle fire occurs at a low point in one of these drainages on a summer afternoon. The response time from our closest fire station is around 9 minutes (due to topography and road conditions). Our first engine company arrives to discover 6 structures involved, 8 more taking direct flame impingement, and at least 3 acres burning in moderate to heavy fuels. Evacuation is an immediate concern and takes precedence over fire suppression activities. Our second and third engine companies arrive at around the 12 minute mark and join in evacuation efforts as a head fire breaks out of the drainage mid-slope and begins to spread laterally under the influences of a prevailing North wind. Fire growth transitions from a moderate rate of spread to *dangerous*. The balance of our initial response is caught in traffic as people begin to flee under heavy smoke conditions and ember showers.

A second alarm assignment will be dispatched to the boat launch at Anderson Dam and response forces will attempt to access the north flank of the fire via off-road trail networks. A minor traffic accident on the only arterial road will effectively seal off all access to Jackson Oaks. Fleeing residents will then be directed east into Henry Coe State Park; the confusion will bring all evacuation efforts to a grinding halt. Winds will carry a developing ember shower south, producing multiple spot fires in the open space areas below and between homes in Jackson Oaks. Those spot fires will begin to converge, threatening hillside homes with large sheeting flame fronts. Within an hour, the municipal water supply will be taxed beyond its capabilities; firefighters will be forced to initiate water shuttle operations, spreading available resources beyond effective or desirable limits. With aircraft support, this fire will be held at less than 50 acres with 20 homes destroyed and another 25 damaged. Fire losses will exceed \$30 million.

#### 4) SITE DESCRIPTION

Jackson Oaks is a 45-year old suburban foothills development built on a hillsides and ridges with grades averaging 34%. The community is within a High Fire Hazard Severity Zone, as identified by CAL FIRE's Fire Resource and Assessment Program. Jackson Oaks contains 503 single-family residences, a small strip-mall, and a community center/clubhouse, on 200 acres, surrounded and intermixed with 1,400 acres of open space preserves and rangeland. Jackson Oaks is located in an oak/grass model but the fuel load is primarily non-native; flammable ornamental plants (i.e. junipers) are prevalent. Drought stress and damaging forest pest species are steadily changing the canopy.



Photo 8. Jackson Oaks landscaping, typical.



Photo 9. Indications of drought stress and beetle kill.

Most homes in this community have well-maintained yards with adequate defensible space, but there are also parcels with poor property hygiene. Jackson Oaks is surrounded by expansive open space areas - continuous seasonal grasslands on steep hillsides - and homes on the borders of these open spaces have minimal setbacks from the slope and fuel. Many homes still have combustible wood roofs, siding, decks and fencing.



Photo 10. Hillside home, poor property hygiene, combustible deck & siding.



Photo 11. Hillside homes with minimal setback.

The roads are marked with small non-reflective street signs that are typically visible from only one direction of travel (Photos 2 and 3). Houses are served by a network of steep, narrow, winding, two-lane roads, without adequate shoulders or fuel breaks (Photos 4 and 8). There is only one road into and out of Jackson Oaks (Photos 6 and 7). That road is also a steep, winding, two lane artery. In the event that this road becomes impassible, access and egress will be compromised. Some homes have inaccessible driveways or minimal turnaround area, which threaten to delay firefighting efforts.



Photo 12. Steep, narrow, inaccessible, driveway.

5) ASSESSMENT PROCESS

The data-gathering process involved personal observations during driving tours throughout the community, "town hall" type meetings, and the use of predictive modeling software. Assessments were conducted individually by no less than four subject matter experts who then met to discuss their findings.

6) IMPORTANT CONSIDERATIONS

The Firewise Communities/USA program seeks to create a sustainable balance that will allow communities to live safely while maintaining environmental harmony in a WUI setting. Homeowners already balance their decisions about fire protection measures against their desire for certain flammable components on their properties. It is important for them to understand the implications of the choices they are making. These choices directly relate to the ignitability of their home ignition zones during a wildfire.

Jackson Oaks has several properties without adequate defensible space. Flammable ornamental plants (i.e., junipers) are prevalent throughout the development.



Photo 13. Hillside home with inadequate defensible space, bordering open space.



Photo 14. Flammable landscaping plants, typical.

Also notable in the Jackson Oaks community are homes with minimal setback from the slope and adjacency to open space property with long seasonal grasses.



Photo 15. Minimal setback from slope and open space areas.

Several homes have combustible wood roofs and siding and many have combustible decks and fencing (Photos 5 and 10). Some homes have long steep driveways with minimal turnaround, which may impede access by emergency vehicles (Photo 12).

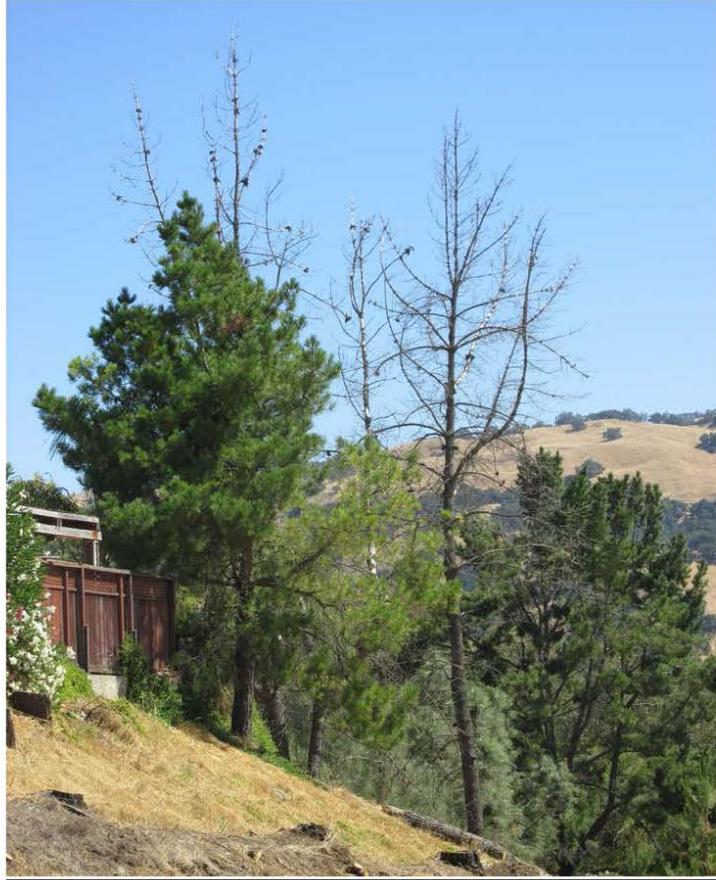


Photo 16. Combustible fence, hillside home.

#### 7) OBSERVATIONS AND RECOMMENDATIONS

##### Observations:

1. Access/egress is limited partially due to inadequate fuel maintenance along road shoulders. Street and address identification is marginal and may slow emergency response.



Photo 17. Overgrown roadway, typical.

2. Defensible space can be improved for the community-at-large by developing fuel breaks along the perimeters of the development.



Photo 18. Disced fireline, heavy brush on both sides.

3. Elderly and indigent populations may be unable to complete necessary fuel reduction work without assistance.

Recommendations:

1. Improve ingress/egress capabilities by establishing fuel breaks along road shoulders.



Photo 19. Road shoulders cleared as fuel breaks.

2. Improve existing fuel breaks through chipping and discing. Develop shaded fuel breaks in open space oak woodlands.
3. Refinish existing street signs with reflective paint. Add street signs to ensure identification from either direction of travel.



Photo 20. Street signs viewed from reversed direction of travel, typical.

4. Increase community education and engagement through the use of speakers and presentations.
5. Increase community involvement, reinforce educational messages, and reduce threats to the community, through the use of volunteer work projects serving the elderly and indigent population.

#### 8) SUCCESSFUL FIREWISE MODIFICATIONS

When adequately prepared, a house can likely withstand a wildfire without the intervention of

the fire service. Further, a house and its surrounding community can be both Firewise and compatible with the area's ecosystem. The Firewise Communities/USA program is designed to enable communities to achieve a high level of protection against WUI fire loss even as a sustainable ecosystem balance is maintained.

A homeowner/community must focus attention on the home ignition zone and eliminate the fire's potential relationship with the house. This can be accomplished by disconnecting the house from high and/or low-intensity fire that could occur around it. The following photographs were taken in the Crystal Dr. neighborhood and are examples of good Firewise practices.



Photo 21. Reflective, double-sided street signs with 4" letters.



Photo 22. Effective 10' fuel breaks along roadways. Most ladder fuels removed.



Photo 23. Effective 10' fuel break on both sides of roadway.



Photo 24. Effective fuels treatment on slope, shaded fuel break in background.



Photo 25. Shaded fuel break between homes.



Photo 26. Noncombustible roof covering. Leaf litter removed.



Photo 27. Using existing roadways as an effective fuel break.



Photo 28. Shaded fuel break below homes.

9) NEXT STEPS –

After reviewing the contents of this assessment and its recommendations, the Jackson Oaks Firewise Board in cooperation with the Morgan Hill Fire Department will determine whether or not it wishes to continue seeking Firewise Communities/USA recognition. The Firewise Communities/USA representative will contact the Firewise Board representative by [date] to receive its decision.

If the site assessment and recommendations are accepted and recognition will be sought, the Jackson Oaks Firewise Board will create agreed-upon, area-specific solutions to the Firewise recommendations and create an action plan in cooperation with the Morgan Hill Fire Department.

Assuming the assessment area seeks to achieve national Firewise Communities/USA recognition status, it will integrate the following standards into its plan of action:

- Sponsor a local Firewise board, task force, committee, commission or department that maintains the Firewise Community program and status.
- Enlist a WUI specialist to complete an assessment and create a plan from which it identifies agreed-upon, achievable local solutions.
- Invest a minimum of \$2.00 annually per capita in its Firewise Communities/USA program. (Work done by municipal employees or volunteers, using municipal or other equipment, can be included, as can state/federal grants dedicated to that purpose.)
- Observe a Firewise Communities/USA Day each spring that is dedicated to a local Firewise project.
- Submit an annual report to Firewise Communities/USA. This report documents continuing participation in the program.

Jackson Oaks residents are reminded to be conscious of keeping high-intensity fire more than 100 feet from their homes. It is important for them to avoid fire contact with their structures. This includes firebrands. The assessment team recommends the establishment of a 'fire free zone', allowing no fire to burn within ten feet of a house by removing fuels located there. It is a bad idea for fire to touch a house during a wildfire. Remember that, while wildfire cannot be eliminated from a property, it can be reduced in intensity.

Homeowners are reminded that street signs, addresses, road widths and fire hydrants do not keep a house from igniting. Proper attention to their home ignition zones does. They should identify the things that will ignite their homes and address those.

Weather is, of course, of great concern during wildfire season. At such time as fire weather is severe, homeowners should remember not to leave flammable items outside. This includes rattan doormats, flammable patio furniture, firewood stacked next to the house, or other flammables.

Should you require further information, please call 408-310-4654. You may leave a voice mail message at anytime and your call will be returned as soon as possible. I may also be reached by email at [Dwight.Good@fire.ca.gov](mailto:Dwight.Good@fire.ca.gov)

Sincerely,

Dwight Good  
Fire Marshal