

Martis Valley West Parcel Specific Plan

Emergency Preparedness and Evacuation Plan

Prepared for Placer County

Prepared by Mountainside Partners

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TABLE OF CONTENTS

<u>Section</u>	<u>Page No.</u>
1.0 INTRODUCTION	1-1
1.1 Introduction	1-1
1.2 Purpose	1-1
1.3 Project Summary.....	1-1
1.3.1 Location.....	1-1
1.3.2 Project Description.....	1-2
2.0 EXISTING CONDITIONS	2-1
2.1 Topography.....	2-1
2.2 Vegetation.....	2-1
2.3 Climate.....	2-2
2.4 Existing Land Uses	2-4
2.5 Law Enforcement	2-4
2.6 Fire History.....	2-4
2.7 Fire Hazard Severity Zones and State Responsibility Areas	2-4
2.8 Fire and Emergency Response	2-5
2.9 Current Fire Protection Status within Plan Area	2-11
2.10 Transit Routes and Agencies.....	2-11
2.11 Seismic and Geologic Hazards.....	2-11
2.12 Avalanche Hazards	2-12
2.13 Flood Hazards.....	2-12
3.0 REGULATORY REQUIREMENTS	3-1
3.1 Fire Prevention and Response	3-1
3.1.1 California Public Resources Code Section 4291.....	3-1
3.1.2 Government Code Section 66474.2.....	3-1
3.1.3 Placer County General Plan	3-2
3.1.4 Placer County Fire Code	3-2
3.1.5 Martis Valley Community Plan.....	3-2
3.1.6 NCSD Ordinance 21-05 (Water Code)	3-3
3.1.7 NCSD Ordinance 26-09 (Fuel Maintenance and Defensible Space).....	3-3
3.1.8 NCSD Ordinance 28-13 (Fire Code).....	3-4
3.1.9 Community Wildfire Protection Plan.....	3-4
3.1.10 MVWPSP Mitigation Measures.....	3-4
3.2 Seismic Hazards	3-6
3.2.1 California Building Code	3-6
3.2.2 Placer County General Plan	3-6

3.2.3	Martis Valley Community Plan.....	3-7
3.3	Avalanche Regulations	3-7
3.3.1	Placer County General Plan	3-7
3.3.2	Martis Valley Community Plan.....	3-8
3.3.3	Avalanche Management Ordinance	3-8
3.4	Flood Regulations.....	3-9
3.4.1	National Flood Insurance Act.....	3-9
3.4.2	Placer County General Plan	3-9
3.4.3	Martis Valley Community Plan.....	3-10
3.4.4	Placer County Flood Control & Water Conservation District...3-12	
3.4.5	MVWPSP EIR Mitigation Measures.....	3-12
4.0	FIRE PREVENTION AND EMERGENCY PLANNING.....	4-1
4.1	MVWPSP Policies.....	4-1
4.2	Fire Protection Plan	4-2
4.2.1	Water Supply and Fire Flow.....	4-2
4.2.2	Emergency Access and EVA Standards	4-2
4.2.3	Building Fire and Ignition Resistance and Fire Protection Systems	4-5
4.2.4	Defensible Space/Fuel Maintenance.....	4-5
4.2.5	Wildfire Education and Public Communication	4-6
4.3	Forestry Management Plan	4-7
4.4	Evacuation Plan.....	4-7
4.5	Avalanche Protection Measures.....	4-8
4.6	Seismic Protection Measures.....	4-8
4.7	Flood Protection Measures	4-9
5.0	REFERENCES.....	TO COME

APPENDICES

- A. Applicable Fire Codes and Ordinances and Programs
 - California Public Resources Code Section 4291
 - NCSD Ordinance 26-09 (Fuel Maintenance and Defensible Space)
 - NCSD Ordinance 28-13 (Fire Code)
 - Defensible Space Program
 - CalFire General Guidelines for Creating Defensible Space
- B. MVWPSP Evacuation Plan
- C. NCSD Fire Emergency Guide
- D. Eastside Emergency Evacuation Plan

1.0 INTRODUCTION

1.1 Introduction

This Emergency Preparedness and Evacuation Plan (EPEP) has been prepared for Martis Valley West Parcel Specific Plan (MVWPSP). The focus of the EPEP is primarily on emergency preparedness and evacuation protocols for emergency events, such as fire. However, other hazards are also addressed, including avalanche, seismic and flood protection measures.

This EPEP is consistent with the concepts and goals of the Martis Valley Community Plan and MVWPSP, and is intended to be implemented in conjunction with the Northstar Fire Department Evacuation Plan and the Placer County Operational Area East Side Emergency Evacuation Plan.

The MVWPSP establishes the planning framework for development of the 662-acre West Parcel, and provides for preservation of the 6,376-acre East Parcel. The MVWPSP provides a comprehensive set of goals and policies, project objectives and implementation measures to guide the development of the West Parcel, and establishes development standards for parcel layout, buildings and facilities, as well as design guidelines for architecture, landscaping and other project elements. Because the East Parcel is planned to for conservation, and no development is proposed on the East Parcel as part of the MVWPSP, this EPEP addresses only the West Parcel.

1.2 Purpose

This EPEP specifically applies to properties within the West Parcel boundaries. The EPEP provides a framework for protection of property owners and guests from natural hazards, prevention of fire and exposure to avalanche, seismic events or flooding, and preparation for responding to emergencies if they arise.

1.3 Project Summary

1.3.1 Location

The MVWPSP site is located midway between the Town of Truckee and the north shore of Lake Tahoe and within the Martis Valley Community Plan (MVCP) in Placer County on either side of SR 267 (see Figure 1-1). The Martis Valley encompasses approximately 44,800 acres and is located in both Nevada and Placer counties. Within Placer County only, the Martis Valley includes approximately 25,570 acres.

The West Parcel is located southeast of Northstar Resort, and uphill and east from Sawmill Reservoir.

Vehicular access to the West Parcel is from SR 267. The primary access point to the West Parcel is a gated, dirt road located approximately 1 mile south of Northstar Drive. Logging roads also intersect Fibreboard Freeway. The West Parcel can also be accessed by non-vehicular traffic, such as on foot, bicycle and cross-country skis from Fibreboard Freeway and nearby trails, such as the Tahoe Rim Trail and Tompkins Memorial Trail.

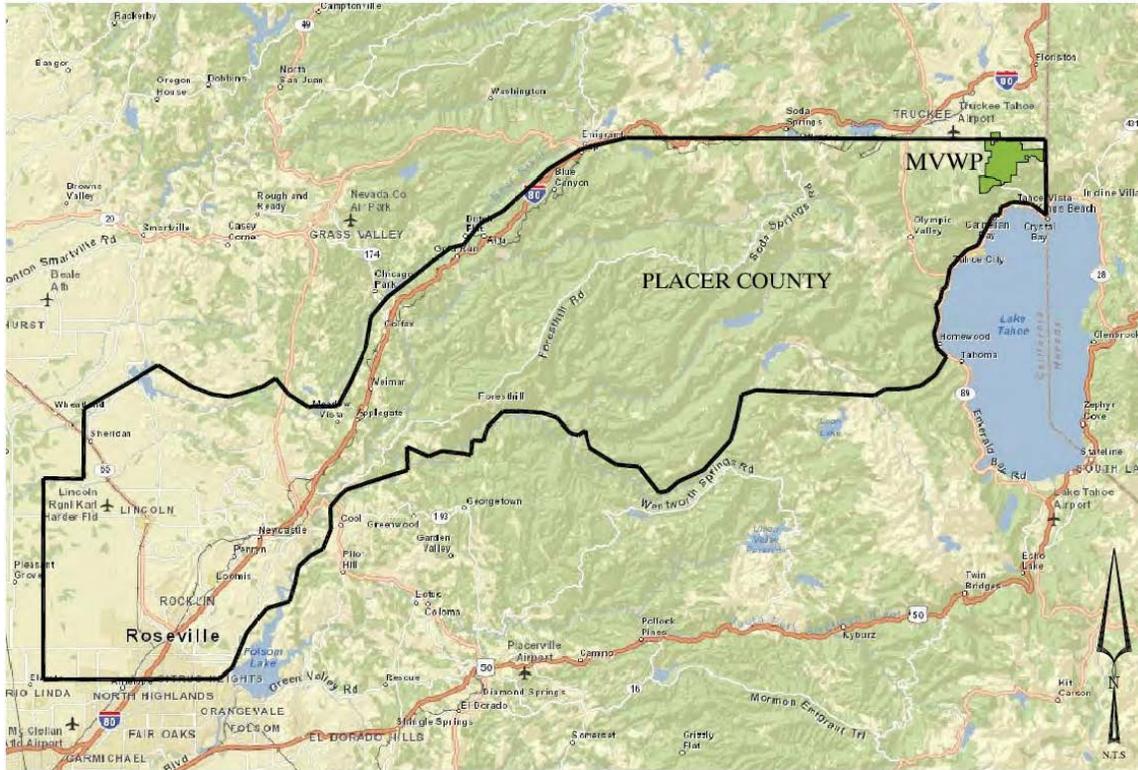


Figure 1-1, MVWP Location

1.3.2 Project Description

The MVWSP provides for 760 residential units and 6.6 acres of commercial uses. A portion of the West Parcel (662 acres) would be zoned Residential, allowing for the development of residential units and associated commercial, homeowner amenities, and small community retail uses. The remaining 390 acres on the West Parcel would remain designated Forest and would be zoned TPZ. The land use designations are shown in Figure 1-2. Specific proposals for development under the MVWSP have not yet been prepared, but Figure 1-3 provides a conceptual layout that would be consistent with the zoning, policies and development standards of the MVWSP.

The Residential designation would be applied to the majority (662 acres) of the West Parcel and would allow for a variety of residential units, including second homes and lodging. Typical allowed land uses include detached single-family dwellings, secondary dwellings and residential accessory structures, smaller-scale multi-family dwellings, condominiums, churches, parks, homeowner recreational facilities, childcare facilities, and necessary public utility and safety facilities. In addition, other non-residential uses would be allowed under this designation to serve the resident population, including up to 6.6 acres of commercial uses such as small retail stores, restaurants, offices, and sports equipment rentals.

The intent of allowing small commercial/retail uses within the residential designation is to provide services and amenities to residents and visitors within the MVWSP and minimize the need for trips outside of the project site. The total commercial/retail and homeowner amenities acreage is limited to 6.6 acres, 34,500 square feet commercial/retail and 22,000 square feet of homeowner amenities, which could be distributed throughout the Residential-designated area.

MVWSP EPEP

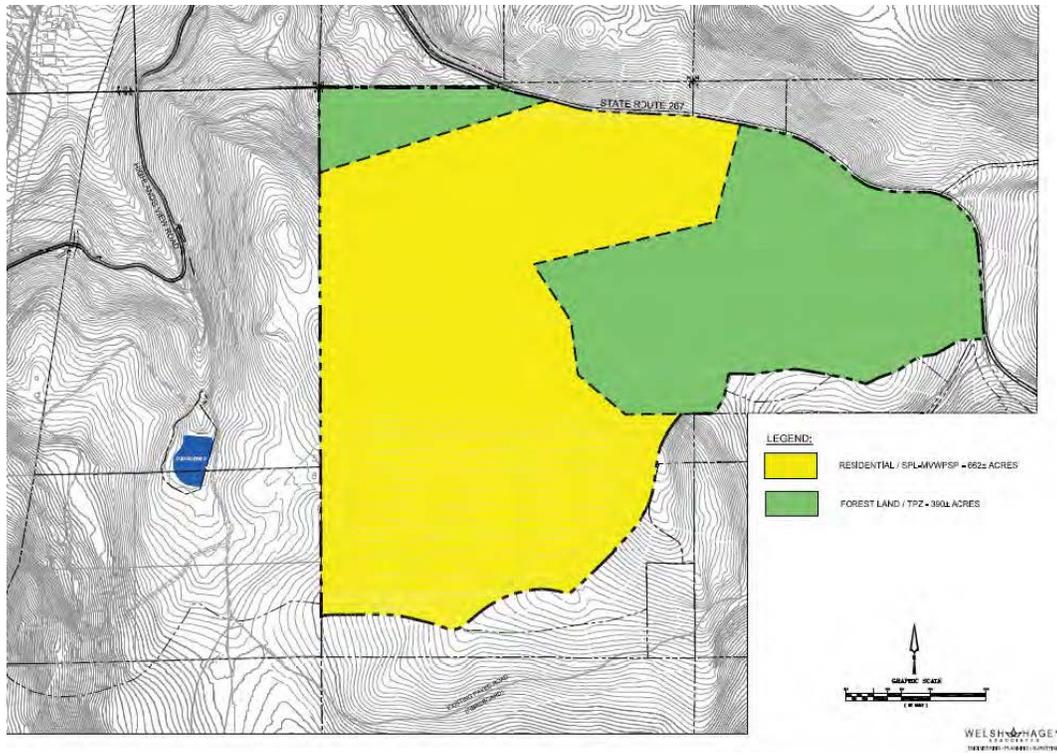


Figure 1-2, MVWSP Land Use Designations

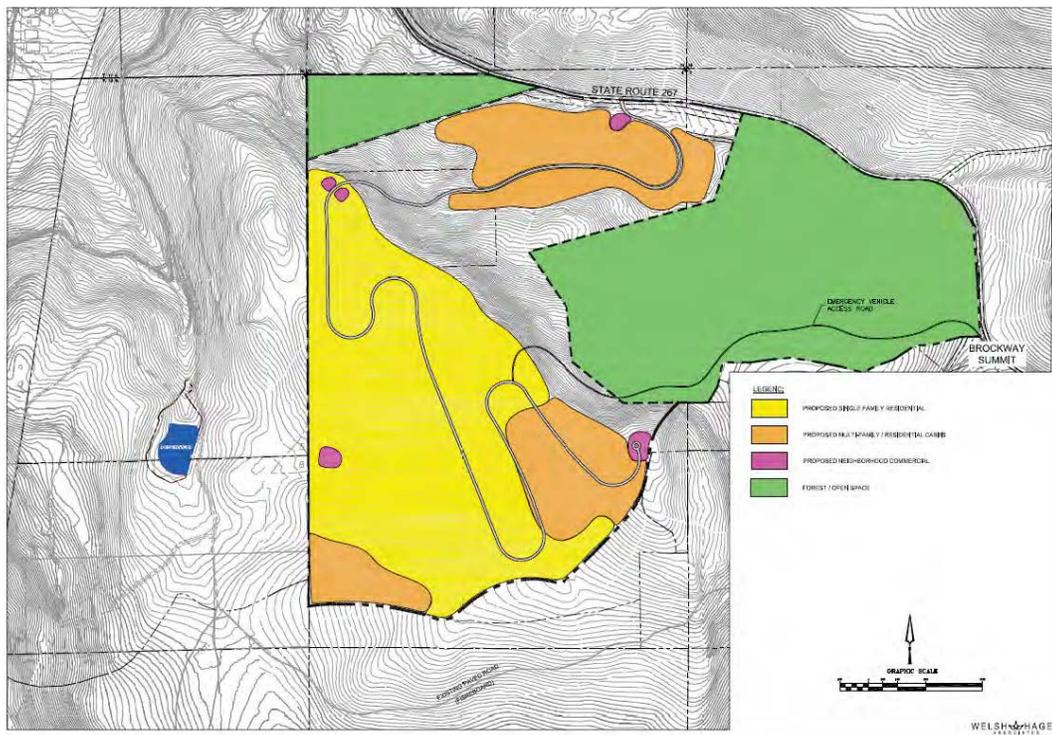


Figure 1-3, Conceptual Land Use Plan

The Forest designation is applied where the primary land uses would relate to the growing and harvesting of timber and other forest products, together with public and commercial and recreational uses (Placer County Code, Chapter 17, Section 17.12.010 – Definition of Forestry Zoning Designation). Allowable uses include timber production and facilities, cross-county skiing and related facilities, including parking, incidental camping, improved campgrounds (but no recreational vehicle parks), and public utility and safety facilities. Residential development is not allowed in the Forest designation.

The MVWPSP includes policies that restrict development in hazard areas and/or where sensitive resources could be located. Figure 1-4 indicates where development could occur.

Development of the West Parcel pursuant to the MVWPSP would occur in phases, and is anticipated to be built out over approximately 20 years. Depending on market demand for various lodging types and non-residential uses and changes in the development goals or financial capabilities of property owners, development may evolve in a variety of ways. Therefore, the implementation measures are intended to ensure that development of the MVWPSP is comprehensive, coordinated, and responsive to changing circumstances and market conditions.

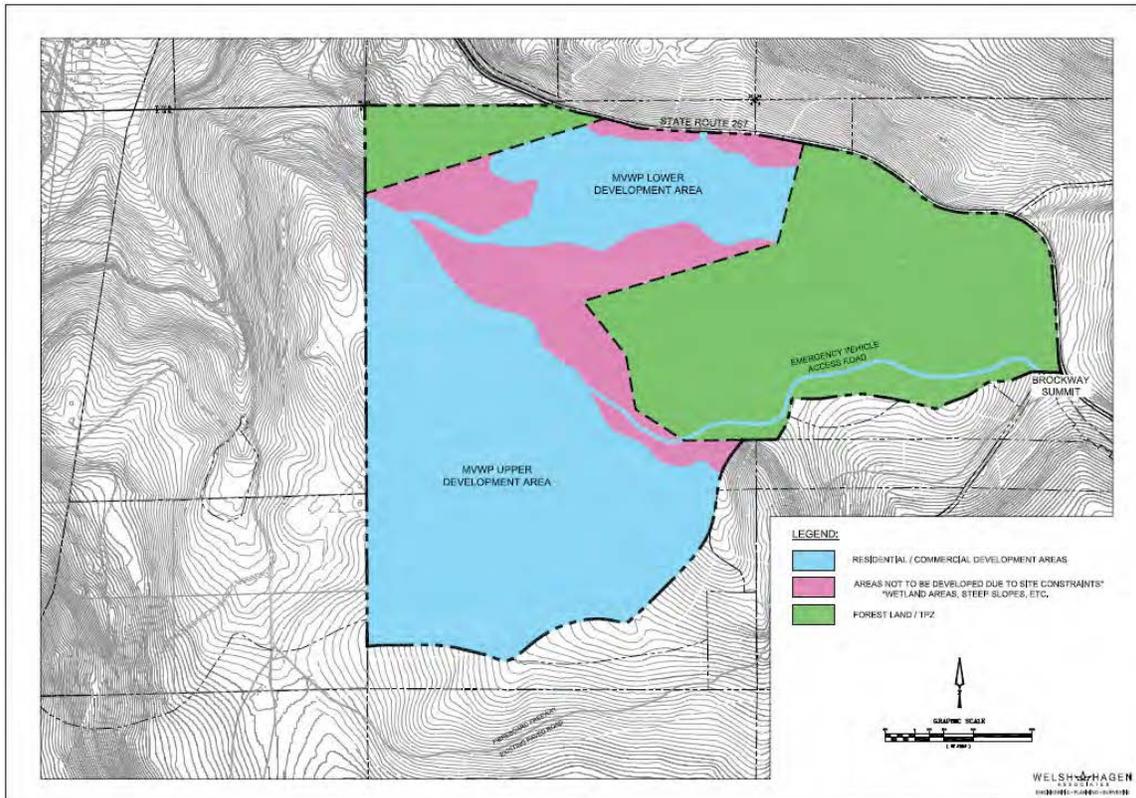


Figure 1-4, Development Areas and Non-Development Areas

2.0 EXISTING CONDITIONS

2.1 Topography

The regional terrain in the Martis Valley and vicinity is generally defined by gently sloping to moderately steep plateaus and mountain valleys (Martis Valley and Sierra Valley) with some steep mountainous areas. The crest of the Sierra Nevada rises to the west of the Truckee River canyon with numerous peaks between 8,000 feet and 9,000 feet above mean sea level (msl), including Mount Lincoln, Mount Andersen, and Tinker Knob. The northern portion of the Carson Range, an eastern spur of the Sierra Nevada, rises to the east and southeast of Martis Valley; the highest peaks in this portion of the range are in Nevada and include Slide Mountain (9,698 feet) and Mount Rose (10,776 feet). Martis Peak is near the MVWPSP project site, at the southeast edge of Martis Valley, with an elevation of 8,742 feet. South of Martis Peak, the terrain drops away into the Lake Tahoe Basin with a low elevation of 6,229 feet.¹

The West Parcel is characterized by an upper and lower bench separated by a jagged and distinct rock rim that runs in a northwest-southeast direction (see Figure 2-1). The lower bench is situated north of this geological feature and south of SR 267, and contains Middle Martis Creek and its associated riparian areas, meadows, and wetlands. Approximately 100 acres of the lower bench (in the northeastern corner of the West Parcel) has slopes of 0 to 15 percent. Slopes increase moving southwest of Middle Martis Creek toward the ridge, exceeding 50 percent in the steepest areas. South of the rim, the upper bench slopes moderately (generally less than 15 percent but exceeding that in some areas) down to the west and southeast. The low point of the parcel is approximately 6,600 feet at Middle Martis Creek and the highest is 7,800 feet at the top of the central ridge.²

2.2 Vegetation

The West Parcel is composed primarily of coniferous forest habitats (see Figure 2-2). The dominant habitat is Sierra mixed conifer, red fir forest, and white fir forest. Other habitat types within the West Parcel include white fir/red fir forest, freshwater forested/shrub wetland, freshwater emergent wetland, montane riparian, wet meadow and mule's ear meadow.³ A wetland delineation (was prepared for both the West and East Parcels. Approximately 10.7 acres of potential wetlands (freshwater forested/shrub wetland and freshwater emergent wetland) were identified on the West Parcel, as well as approximately 6.2 acres of potential montane riparian and 1.8 acres of potential wet meadow.⁴ To the extent feasible, wetlands will be avoided. Any fill of jurisdictional wetlands would be subject to permitting by the US Army Corps of Engineers, the California Department of Fish and Wildlife and/or the Regional Water Quality Control Board (Lahontan Region).

¹ Ascent Environmental, *Martis Valley West Parcel Specific Plan Draft Environmental Impact Report*, page 14-2.

² Ascent Environmental, *Martis Valley West Parcel Specific Plan Draft Environmental Impact Report*, page 14-2.

³ Ascent Environmental. 2014. Baseline Biological Resources Report -- Martis Valley West Parcel Specific Plan Project. Prepared for Martis Valley West Parcel Project. September 5.

⁴ Ascent Environmental. 2015. Draft Delineation of Wetlands and Other Waters – Martis Valley West Parcel Specific Plan. Prepared for Mountainside Partners. April.

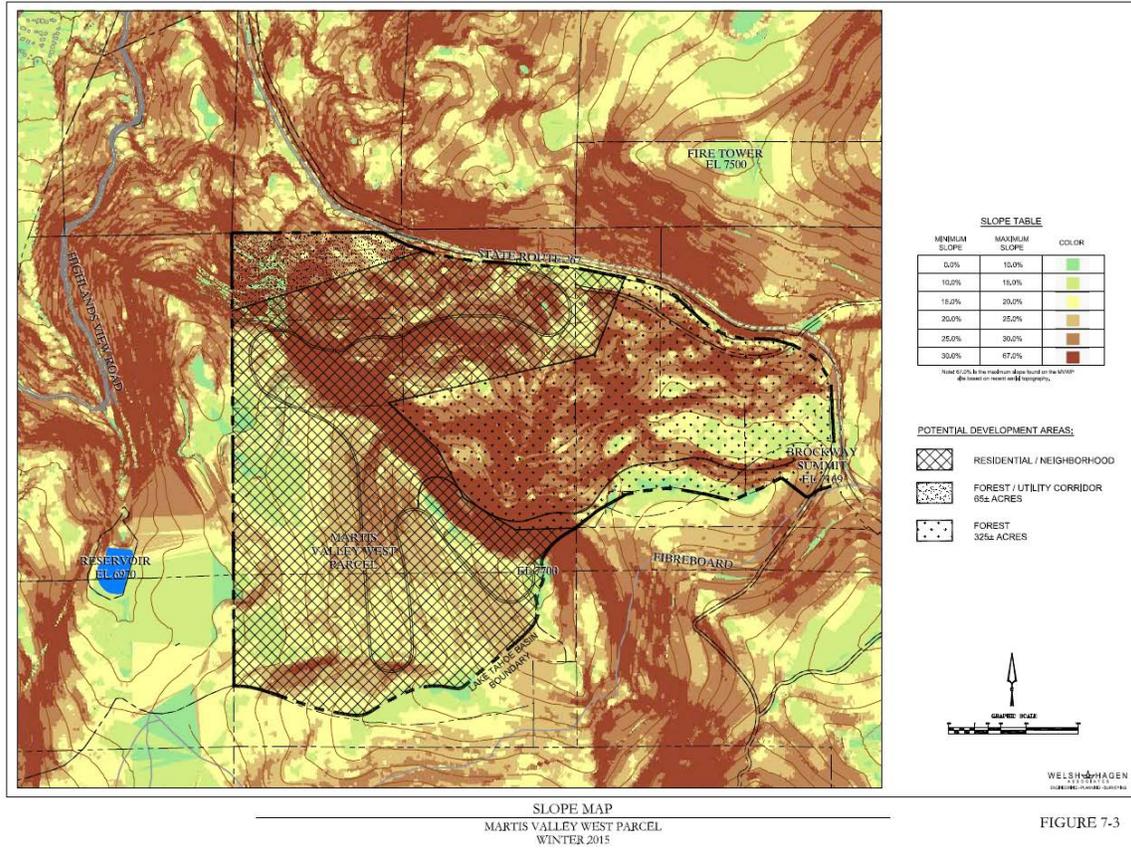


Figure 2-1, West Parcel Slopes

The West Parcel is undeveloped, but been used for timber harvest and recreation in the past. The West Parcel contains approximately 5 miles of unpaved, high clearance vehicle roads, in addition to numerous unmapped skid trails. Ground disturbance on the parcel consists mainly of timber harvest infrastructure including roads, landings, and skid trails and the associated water bars and earthen berms constructed with heavy equipment to control runoff.

2.3 Climate

Martis Valley is located in east if the crest of the Sierra Nevada, and has a climactic pattern similar to the surrounding mountain area, with cool, wet winters (average daytime high of 43F at Northstar) and mild, dry summers (average daytime high of 78F). Annual storms bring rain, ice, snow and fog.⁵ The West Parcel and surrounding areas can experience in excess of 100 inches of snow.

The likelihood and ease of combustion increases as the temperature increases and the humidity decreases. Wet winters encourage undergrowth of vegetation that dries out in the summer and creates hazardous fuel conditions. Relative humidity for the Martis Valley (as measured at the Truckee-Tahoe Airport) typically ranges from a low of 20% to a high of 96%. Humidity is typically lowest in August and highest in December.⁶

⁵ <https://weatherspark.com/averages/31796/Truckee-California-United-States>, accessed April 4, 2016.

⁶ <https://weatherspark.com/averages/31796/Truckee-California-United-States>, accessed April 4, 2016.

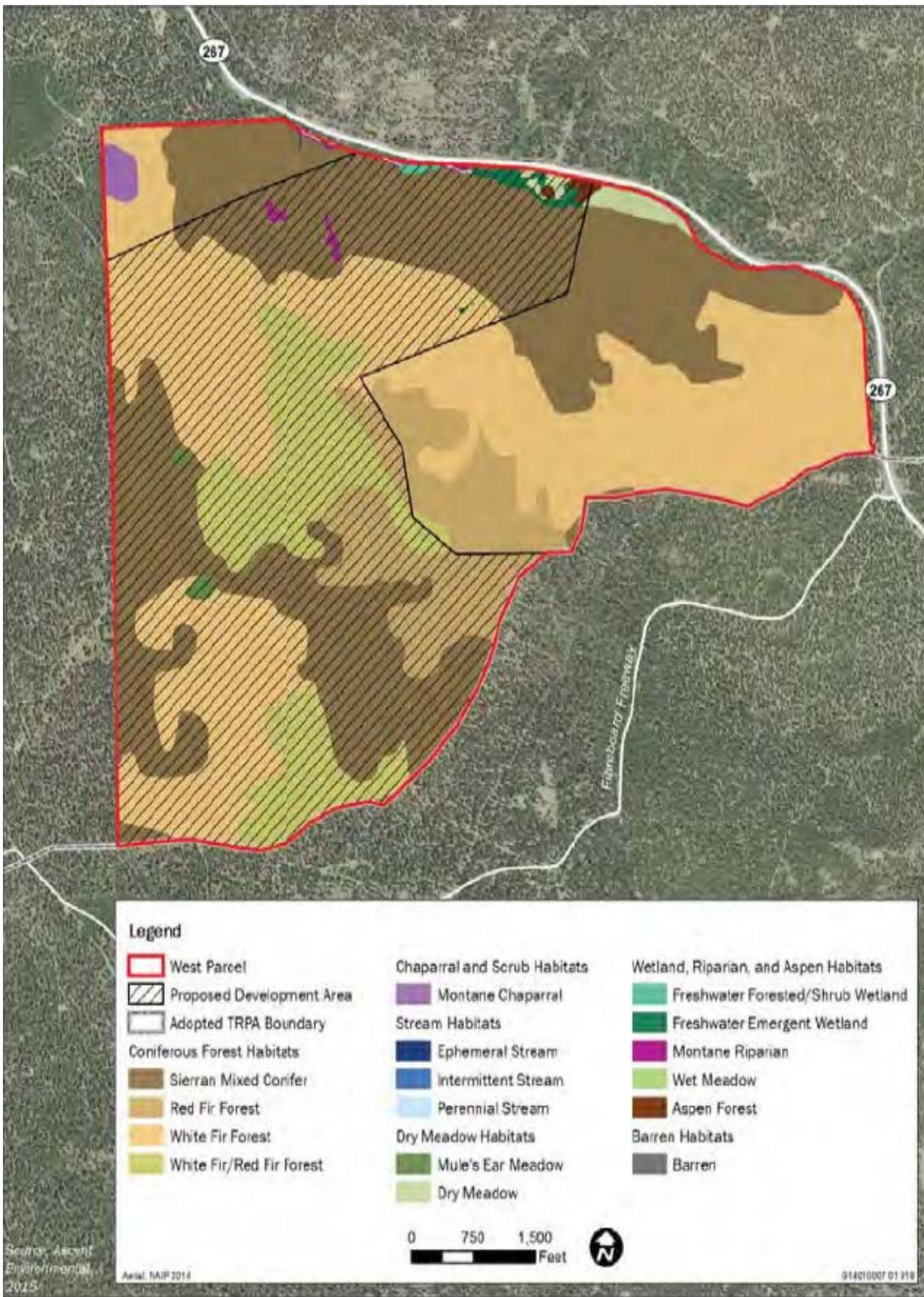


Figure 2-2, Biological Habitats

2.4 Existing Land Uses

The West Parcel contains undeveloped coniferous forest, which has been maintained through timber harvesting activities. Historically, the West Parcel has been used for mining (mid to late 1800s) and logging, as well as cross-country skiing, snowshoeing, mountain biking, hiking and other recreation. The West Parcel is leased to Vail/CNL for use by Northstar guests of 16 miles of trails for cross-country skiing and, since January 2015, for hiking and mountain biking.⁷

2.5 Law Enforcement

Law enforcement in the unincorporated Martis Valley is provided by the Placer County Sheriff's Office. Traffic enforcement along SR 267 is provided by the California Highway Patrol. The substation closest to the West Parcel is located in Tahoe City at 2501 North Lake Boulevard, approximately 7 miles east of the intersection of SR 267 and SR 28 and approximately 12 miles from the West Parcel. The Tahoe Substation covers the portion of Lake Tahoe from the California/Nevada state line on SR 28 west to the Nevada County line in Truckee and south on SR 89 to the El Dorado County line in Tahoma. The station also covers SR 267 from Kings Beach to the Nevada County line in Truckee, as well as a small portion of Donner Lake.⁸

The Tahoe Substation has over 40 positions, including a Sheriff's Captain, one field operations lieutenant, 18 patrol deputies, six patrol sergeants, four detectives, one detective sergeant, and one problem-oriented deputy (neighborhood disputes and Placer County code violations). Services provided by the Tahoe Substation include search and rescue coordination, boat patrol, and bike patrol during special events (Placer County Sheriff's Office 2015). There are typically three deputies and one sergeant on patrol from this station. To address the increase in visitors to the area, an additional officer is on patrol from this station on the 4th of July. Additional officers are also added for large special events (e.g., concerts). Response times for service calls can range between 5 and 30 minutes, depending on the time of year and the location of an officer in proximity to the call.⁹

2.6 Fire History

In Placer County, the wildland fire hazard extends from early spring to late fall. Fire conditions arise from a combination of hot weather, an accumulation of vegetation, and low moisture content in air and fuel. The West Parcel has not experienced a major fire in recent years. The closest recent fire was the Martis fire in 2001, which burned 14,126 acres, located over 5 miles to the east of the West Parcel. Larger fires in the vicinity include the Donner Ridge fire in 1960, which burned 43,373 acres north of Truckee in 1960 and the Cottonwood fire, which burned 48,056 acres south of Loyalton in 1994¹⁰.

2.7 Fire Hazard Severity Zones and State Responsibility Area

The entire West Parcel is located within a State Responsibility Area (SRA) served by

⁷ Ascent Environmental, *Martis Valley West Parcel Specific Plan Draft Environmental Impact Report*, page 5-1.

⁸ Ascent Environmental, *Martis Valley West Parcel Specific Plan Draft Environmental Impact Report*, page 17-7.

⁹ Ascent Environmental, *Martis Valley West Parcel Specific Plan Draft Environmental Impact Report*, page 17-7.

¹⁰ CalFire, *Ignition Management Plan, Battalion 15*, page 84.

CAL FIRE¹¹. Lands located to the south of the West Parcel are located within Federal Responsibility Areas [FRA] and are served by the U.S. Forest Service. When the West Parcel is annexed into the Northstar Community Services District (NCSD), the Northstar Fire Department (NFD) would provide fire prevention and suppression, and rescue services. The North Tahoe Fire Protection District (NTFPD) would provide ambulance services.

2.8 Fire and Emergency Response

The MVWPSP is proposed to be annexed into the NFD service area. The NFD operates under the NCSD, and has been in service since 1972. The NFD has a service area of 2.9 miles, with a sphere of influence of 24.8 square miles.¹² Annexation of the MVWPSP into the NFD service area would add approximately 1,052 acres, or approximately 1.5 square miles.

NCSD/Northstar Fire Department

Services and Programs

The NFD responds to both structural and wildland fires, and provides hazardous materials, vehicle accident and medical aid services. The NFD also has defensible space programs for residences and fuel reduction programs for open space areas. In 2013, the NFD received 402 emergency incident calls.¹³

In addition to reducing fuel by removing certain trees and vegetation, the NFD undertakes efforts to restore forested areas to the original species composition. Logging and other activities removed certain species, allowing other species to dominate. For example, when large pines were logged, white fir, which had been part of the understory, became more prevalent. White fir is not drought tolerant, so it is more vulnerable to pests and disease during drought periods than the pine species that were logged. When the original species ratios are restored the forest through various methods, the forest can become healthier and more drought tolerant, and therefore more resistant to pests, such as the bark beetle, and disease. The healthier trees are also more resistant to fire.¹⁴

The NFD also conducts annual defensible space inspections and issues annual Compliance Certification for homeowners within Northstar. All properties in Northstar are inspected for defensible space compliance, and notices are mailed to homeowners who are not in compliance. Failure to comply can result in a citation.¹⁵ A summary of the Defensible Space Program, including the checklist of the defensible space guidelines, is provided in Appendix A.

The NFD also provides a list of contractors who are qualified to remove trees and/or

¹¹ Ascent Environmental, *Martis Valley West Parcel Specific Plan Draft Environmental Impact Report*, page 18-2.

¹² Citygate Associates, LLC, *Assessment of Fire Service Impacts for the Proposed Martis Valley West Parcel Development*, February 10, 2015, page 9.

¹³ Citygate Associates, LLC, *Assessment of Fire Service Impacts for the Proposed Martis Valley West Parcel Development*, February 10, 2015, page 7.

¹⁴ Barron, Joe, Forester, Northstar Fire District, personal communication, April 27, 2016.

¹⁵ NCSD NFD, *Defensible Space Program*, <http://northstarcsd.org/docs/Defensible/DS%20Program%20-%20Owner%20Ref.%20Guide.pdf>, accessed April 27, 2016.

provide defensible space clean-up,¹⁶

Fire Station and Equipment

The fire station closest to the West Parcel is Station 31 on Northstar Drive. The next closest station by road is the North Tahoe Fire Protection District Station #51 in Kings Beach (see Figure 2-3). A third station, operated by NFD, is located on Highlands View Drive.¹⁷ The NFD has the following apparatus:

- 2 Type 1 structure fire engines
- 1 aerial ladder truck
- 2 type 3 wildland fire engines
- 1 light rescue unit
- 1 command vehicle¹⁸

Staffing

Currently, the NFD normally has three firefighters on duty at Station 31. Station 32 is staffed with two firefighters. In total, there are five personnel on duty at any given time. The minimum staffing level is two people per station per shift (4 personnel total). In addition to firefighters, the NFD has a full-time Fire Chief, a Fire Prevention Officer and a forester, and employs seasonal firefighters.¹⁹

All NFD firefighters are licensed paramedics providing Advanced Life Support. However, NFD does not provide ambulance service, which is provided by either Truckee Fire Protection District or the North Tahoe Fire Protection District.²⁰

ISO Rating

The NFD has an Insurance Services Organization (ISO) rating of Class 3, reflecting the NFD's ability to file a small career fire department, with good equipment, training and water supply for firefighting.²¹ The ISO rating is based on fire alarm and communication systems (10%), fire department capabilities, such as staff training, equipment, planning, number of stations (50%) and water supply system (40%).

The ISO evaluates fire departments to inform insurance companies about the type of fire protection capabilities are available in order to assist with underwriting decisions. Normally the ISO considers structures located more than 5 miles from a fire station to fail

¹⁶ 2014 Approved Defensible Space Contact List, <http://northstarcsd.org/docs/Defensible/DS%20Contractors%20List.pdf>, accessed April 27, 2016.

¹⁷ Citygate Associates, LLC, *Assessment of Fire Service Impacts for the Proposed Martis Valley West Parcel Development*, February 10, 2015, page 6.

¹⁸ Citygate Associates, LLC, *Assessment of Fire Service Impacts for the Proposed Martis Valley West Parcel Development*, February 10, 2015, page 9.

¹⁹ Citygate Associates, LLC, *Assessment of Fire Service Impacts for the Proposed Martis Valley West Parcel Development*, February 10, 2015, page 9.

²⁰ Citygate Associates, LLC, *Assessment of Fire Service Impacts for the Proposed Martis Valley West Parcel Development*, February 10, 2015, page 9.

²¹ Citygate Associates, LLC, *Assessment of Fire Service Impacts for the Proposed Martis Valley West Parcel Development*, February 10, 2015, page 10.

to meet ISO minimum criteria, which could affect the cost or availability of insurance.²² The entire MVWPSP area would be within 5 miles of either the NFD or NTFPD station.

NCSD operates the Northstar water system, and would provide water service to the MVWPSP. The NCSD system provides NFD with the storage, water pressure control and water supply needed for fire suppression. NCSD's water is supplied by a mountain spring field located at Northstar and a well system located in Martis Valley. The MVWPSP may provide additional wells to the NCSD system from within the West Parcel. Sawmill Flat, located west of the West Parcel, is a 180-foot reservoir used by NCSD. The NCSD maintains a network of fire hydrants, with over 95% of hydrants located within 300 feet of each other, and 70% of hydrants capable of supplying 1000 gallons per minute or more.²³

Emergency Dispatch and Initial Incident Response

The NFD is dispatched by the CAL FIRE Grass Valley Emergency Command Center (ECC). The Grass Valley ECC also dispatches CAL FIRE resources from across the region as well as U.S. Forest Service Tahoe National Forest fire assets. All agencies involved in an active incident are dispatched from the Grass Valley ECC, which ensures that incident response is coordinated to place emergency response resources where they are needed. Emergency response resources include local, state and federal engine companies, hand crews, dozers, air tankers, air tactics coordinators, helitack crews and helicopters/helitacks of various sizes and capacities.

Depending on the weather, CAL FIRE has a choice of dispatch levels; when humidity is low and temperatures are high - a "High Level" dispatch would be the appropriate choice.

A "High Level Dispatch" for the Martis Valley Specific Plan will include:

- 6 Type 3 wildland engines
- 2 Air tankers
- 1 Air Attack
- 1 Helitack
- 1 Water Tender (on request)
- 2 Hand Crews
- 1 Dozer
- 1 CalFire Battalion Chief
- 1 Northstar Fire Chief

²² Citygate Associates, LLC, *Assessment of Fire Service Impacts for the Proposed Martis Valley West Parcel Development*, February 10, 2015, page 11.

²³ Northstar Fire Department, *Your Northstar Fire Department*, page 4.

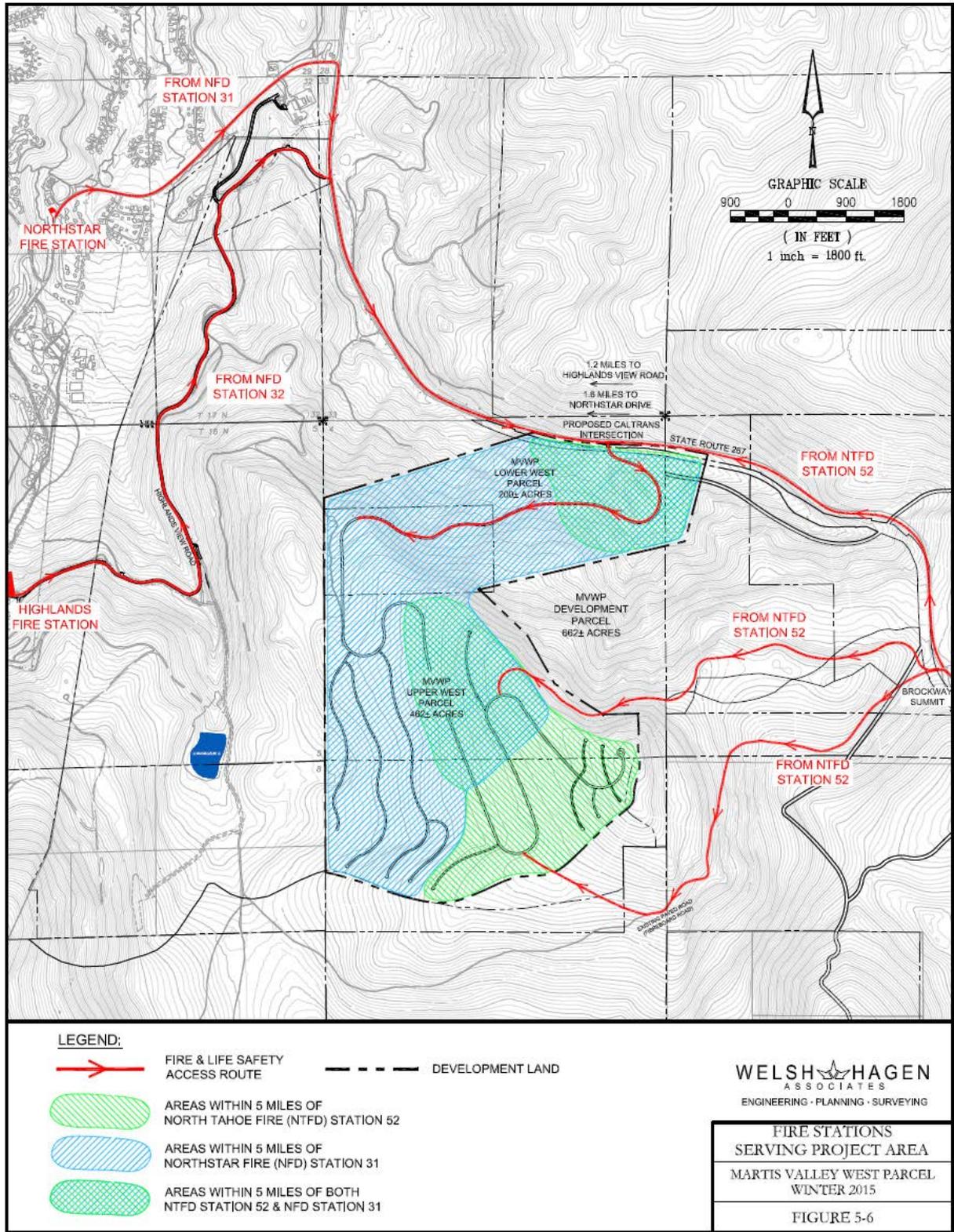


Figure 2-3, NFE Fires Stations

In accordance with industry standards, NCSD uses the Incident Command System for all incidents involving more than a single unit response. Typically, the first-arriving company's most senior level officer will be assigned as the Incident Commander (IC) and will transfer command to either a higher-ranking officer or a representative of the authority having jurisdiction for the incident upon their arrival at scene. Typically, the agency having authority for investigation has jurisdiction. If there is a question as to jurisdictional responsibility, the Grass Valley ECC can determine jurisdictional responsibility.

Emergency Communication with the Public

Technological changes have provided distinct advantages for communicating to the public about emergencies. In the recent past, the most effective means of conveying emergency information to the residents of an area was the use of a 'reverse directory' listing of telephone numbers in order of street address. This "Reverse 911" system is still in use.

Placer County uses a similar system called Placer Alert or Everbridge. Residents sign up to receive notifications via phone calls, text messages and emails for one or more location, such as primary or second homes, work places and schools. The system is used to provide notification of severe weather, flooding, gas leaks, police activities and similar events.²⁴

The NFD is also registered with Nixle Connect, a service that allows the NFD to contact the public directly via text and email. Similar to Everbridge, notification can range from emergency alerts, including mandatory evacuations, to public safety information and other community information. The NFD recommends that all property owners and visitors to the area sign up for Nixle Connect, which is a free service.²⁵

The NFD also maintains an audible siren on top of Fire Station #31 on Northstar Drive. The siren sounds continuously in event of large scale evacuations.²⁶

Evacuation Routes and Logistics

The NFD has identified several evacuation routes, which provides access to 267 and Martis Camp. If an evacuation order is issued, the public would be directed to one of the following routes:

- Northstar Drive to Highway 267
- Northstar Drive to Big Springs Drive to Highlands View Road to Highway 267
- Big Springs Drive to Mill Road into Martis Camp to Highway 267

From SR 267, people evacuating would be directed either to Truckee or Kings Beach. The complete Northstar Evacuation Route Map is included in Appendix B.

²⁴ Northstar Fire Department, *Emergency Preparedness and Evacuation Guide*, page 7.

²⁵ Northstar Fire Department, *Emergency Preparedness and Evacuation Guide*, page 7.

²⁶ Northstar Fire Department, *Emergency Preparedness and Evacuation Guide*, page 7.

North Tahoe Fire Protection District

The North Tahoe Fire Protection District (NTFPD) would provide ambulance service to the MVWPSP, and would lend assistance as needed to the NFD through a mutual aid agreement (see below). The NTFPD provides fire and emergency services to approximately 31 square miles within the Tahoe Basin, from the California/Nevada border near Kings Beach to Tahoma, and also serves Alpine Meadows. NTFPD maintains 6 fire stations staffed by 50 uniformed and support personnel.²⁷ In 2014, the NTPFD responded to 2,200 calls.²⁸ NTPFD operates 7 paramedic ambulances, one of which has the capacity to carry up to 3 injured patients at one time.²⁹ Two of the ambulances are located at Kings Beach, the nearest station to the West Parcel.

Mutual Aid

The NFD is a member of the Eastern Placer County Joint Powers Authority (JPA), along with Alpine Springs Community Service District, North Tahoe Fire Protection District, Tahoe City Public Utility District, Squaw Valley Fire Department, Placer County Service Area 16, Placer County Service Area 21, Meeks Bay Fire Protection District, and Donner Summit Public Utility District. The JPA provides mutual aid, as well as a shared radio repeater and equipment purchases, between other member districts. In addition, the Valley and surrounding forested areas are classified as a State Responsibility Area and receive fire protection assistance from the California Department of Forestry and Fire Protection (CAL FIRE).

Eastside Emergency Evacuation Plan

Placer County adopted an update to the East Side Emergency Evacuation Plan in March 2015 to address physical evacuation of one or more communities in unincorporated eastern Placer County. The Plan covers the portion of the county from just west of Cisco Grove to the Nevada State line, but does not include areas that are within the Tahoe National Forest or the Lake Tahoe Basin Management Unit. The Plan prescribes specific responsibilities for first responders and other agencies that would be involved in an emergency evacuation, defines typical evacuation scenarios, establishes incident command responsibilities, and addresses traffic control, transportation, resources and support, communications, care and shelter and animal services. A number of public agencies were involved in the development of the plan, including the Placer County Office of Emergency Services, Placer County Sheriff's Office, the Nevada County Sheriff's Office, Town of Truckee, five eastern Fire Protection Districts/Departments (including Northstar Fire Department), California Highway Patrol, US Forest Service, American Red Cross, and Nevada County Office of Emergency Services.

The full Eastside Emergency Evacuation Plan is provided in Appendix D and is incorporated into the EPEP by reference.

²⁷ North Tahoe Fire Protection District, *About Us*, accessed at <http://www.ntfire.net/about-us/>, April 6, 2016.

²⁸ North Tahoe Fire Protection District, *Annual Report 2014*, page 16.

²⁹ North Tahoe Fire Protection District, *Annual Report 2014*, pages 18 and 19.

2.9 Current Fire Protection Status within Plan Area

At present, the West Parcel is undeveloped, and fire response is provided by CalFire. The site can be accessed from SR 267 or Fibreboard Freeway. The only roads within the West Parcel are dirt logging roads, and there are no water lines. The West Parcel is not currently subject to defensible space or fuel maintenance requirements, although intermittent logging has reduced fuels on portions of the site.

2.10 Transit Routes and Agencies

The Eastside Emergency Evacuation Plan indicates that transit vehicles may be used to evacuate those who do not have their own vehicles. If transit vehicles are available during evacuations, evacuation bus stops would be identified.

There are several transit service providers that serve the Martis Valley, Truckee, Tahoe City and environs. Tahoe Area Regional Transit (TART), operated by Placer County, connects Martis Valley with Truckee and Kings Beach. TART service is provided 7 days per week including holidays, and serves Eastern Placer County including the North Shore of Lake Tahoe, Incline Village, and Truckee. The Town of Truckee also provides fixed-route and dial-a-ride service in the project area.³⁰

TART has a total of 17 busses in the current fleet with a capacity of 30 to 38 passengers per vehicle. The total seating capacity of the entire fleet is 602 passengers.³¹

2.11 Seismic and Geologic Hazards

Similar to nearly all of California, the MWWPSP project site is located in a potentially active seismic area. The site has experienced moderate ground shaking because of historic earthquakes. The West Parcel is located within the Western Nevada Seismic Zone. The Western Nevada Zone is composed of a poorly defined system of strike slip and dip-slip faults within the eastern portion of the Sierra Nevada and the western portion of Basin and Range Geomorphic Province. The 2002 California Geological Survey earthquake catalog categorizes the Western Nevada Zone as an approximately 150-mile-long shear zone with the hazard derived from a seismic area with uniform rate of earthquake occurrence, rather than from a single fault. The fault system is designated as Type C, with a low rate of slip and low rate of recurrence.³²

The West Parcel is not located within an Alquist-Priolo active fault zone, and there is no evidence of active faulting.³³ The Preliminary Geotechnical Engineering and Geologic

Review identified a fault trace along the ridge that divides the West Parcel (see Figure 2-4).³⁴

³⁰ Ascent Environmental, *Martis Valley West Parcel Specific Plan Draft Environmental Impact Report*, page 10-10.

³¹ Gordon Shaw, LSC Transportation Consultants, Inc., electronic communication, April 8, 2016.

³² Ascent Environmental, *Martis Valley West Parcel Specific Plan Draft Environmental Impact Report*, page 14-1.

³³ Ascent Environmental, *Martis Valley West Parcel Specific Plan Draft Environmental Impact Report*, page 14-4.

³⁴ Ascent Environmental, *Martis Valley West Parcel Specific Plan Draft Environmental Impact Report*, page 14-16.

2.12 Avalanche Hazards

Snow avalanche is a rapid flow of snow down a slope that results from a mechanical failure in the snowpack when gravitational forces on the snow exceed its strength. Although primarily composed of flowing snow and air, large avalanches have the capability to entrain ice, rocks, trees, and other material. Critical stresses develop more quickly on steeper slopes and where deposition of wind-transported snow is common. Because avalanches most often occur on slopes ranging between 30 and 45 degrees (roughly 50 to 100 percent slopes), these areas are considered high hazard zones. Moderate hazard zones are usually on shallow slopes and located immediately downhill of high hazard zones. Within Placer County, mapped high and moderate zones are located near the Placer County/Nevada County line, south of Donner Lake and Lake Van Norden, east of Tahoe City, near Twin Peaks and McKinney Bay, and in areas near Squaw Valley, Alpine Meadows, and Sugar Bowl.³⁵

The West Parcel contains sections of slopes steep enough to generate avalanches (see Figure 2-5). The north facing slope of the central ridge has slopes between 30 and 35 degrees. Although this steep band of terrain could produce avalanches, it is likely that the dense forest cover would prevent avalanche slab formation. No evidence of past avalanche damage is found in the area.³⁶

2.13 Flood Hazards

According to the Federal Emergency Management Agency (FEMA) Map Number 06061C000 F, the entire West Parcel is within the Zone X FEMA flood hazard area, which is defined as “areas that are determined to be outside the 500-year floodplain.” This designation indicates that the watershed area is dominated by terrain that is either not prone to flooding or is considered to be of lesser concern by FEMA and has not been studied in detail. There are no 100-year flood hazard areas designated by FEMA within the West Parcel. Consistent with Placer County policy, a preliminary delineation of the 100-year floodplain for Middle Martis Creek within the West Parcel has been delineated as shown in Figure 2-6.³⁷

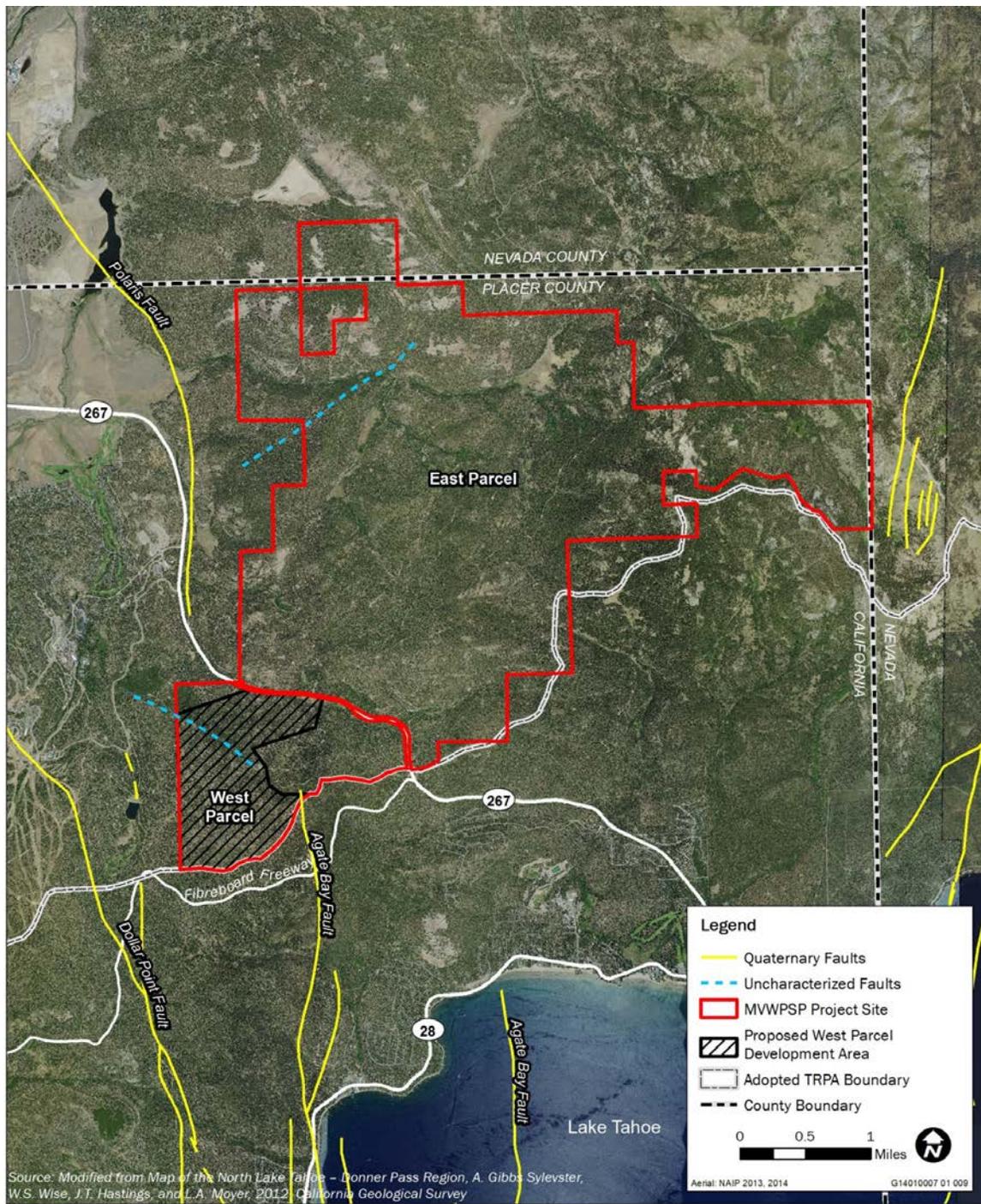
FEMA Community Rating System

The Federal Insurance and Mitigation Administration (FEMA) has a voluntary program for recognizing and encouraging community floodplain management activities that exceed National Flood Insurance Program (NFIP) standards. Under the Community Rating System, NFIP policy holders within participating communities receive discounts on their flood insurance premiums. Ratings range from 1 to 9, with 1 being the highest and receiving the greatest discount. Most communities enter with a rating of 9 or 8, with discounts of 5 or 10 percent, respectively. Placer County is rated 5, so policyholders within the County receive a 25 percent discount.

³⁵ Ascent Environmental, *Martis Valley West Parcel Specific Plan Draft Environmental Impact Report*, page 14-6.

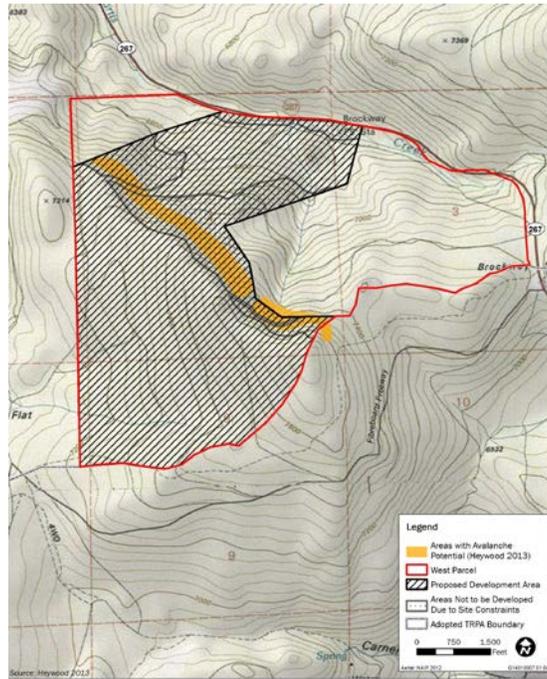
³⁶ Heywood, Larry, *Preliminary Avalanche Hazard Report, Martis Valley West Parcel Project*, August, 2013.

³⁷ Ascent Environmental, *Martis Valley West Parcel Specific Plan Draft Environmental Impact Report*, page 15-4.



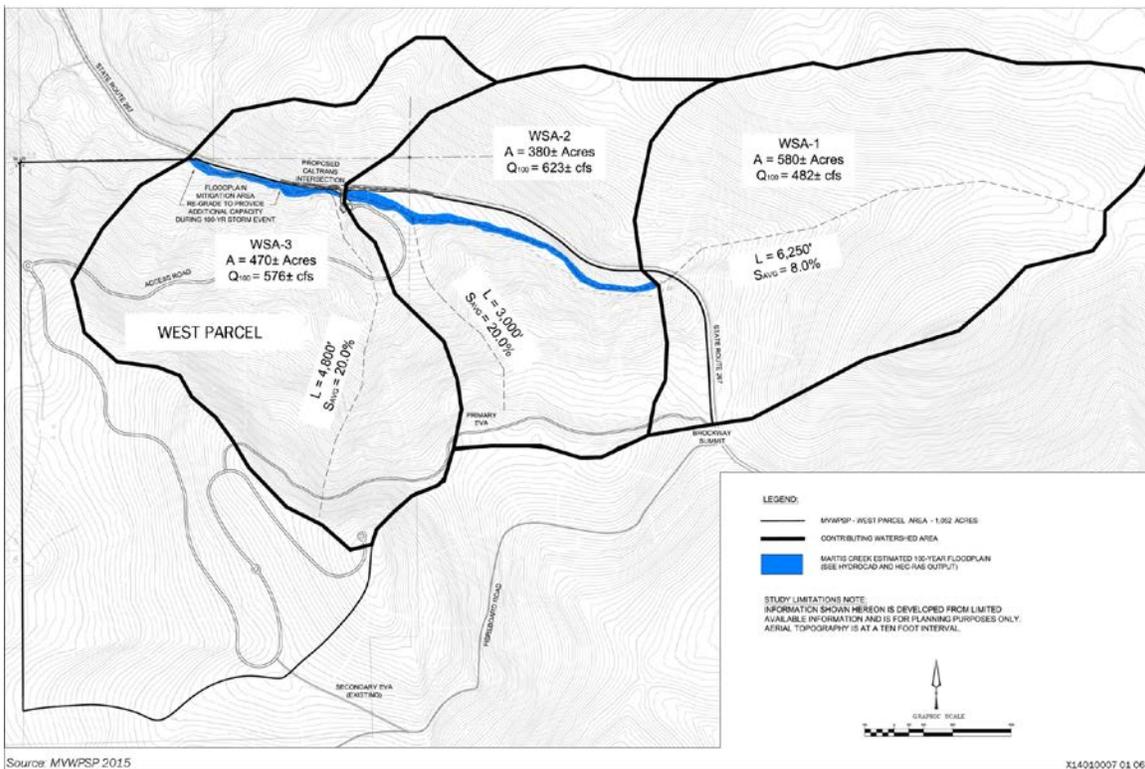
Source, Ascent Environmental, 2015.

Figure 2-4, Seismic Faults



Source: Ascent Environmental, 2015

Figure 2-5, Avalanche Hazards



Source: MWWPSP, 2015
MWWPSP EPEP

Figure 2-6, Floodplain

3.0 REGULATORY REQUIREMENTS

Development under the MVWPSP will be subject to federal and state laws, county ordinances and regulations and mitigation measures identified in the EIR. The key provisions that would address hazards and emergencies within the plan area are summarized below, and, in some cases, reproduced in the appendix.

3.1 Fire Prevention and Response

3.1.1 California Public Resources Code Section 4291

California Public Resources Code (PRC) Section 4291 sets forth minimum fire safety standards for development in or adjoining mountainous areas and forest-covered lands. Provisions that would apply to development under the MVWPSP include:

- Defensible space must be maintained 100 feet from the side, front and rear of a structure, or up to the property line where the property line is less than 100 feet from the structure;
- Any portion of a tree that extends within 10 feet of the outlet of a chimney or stovepipe must be removed;
- Any tree, shrub, or other plant adjacent to or overhanging a building must be free of dead or dying wood;
- The roof of any structure must be free of leaves, needles, or other vegetative materials;
- Prior to constructing a new building, the owner shall obtain a certification from the local building official that the dwelling or structure, as proposed to be built, complies with all applicable state and local building standards.
- Prior to final inspection approval of any building, the Fire Department must inspect the building and the fire suppression facilities to certify that the fire suppression improvements comply with Building Code and fire department service requirements.

Violation of the above provisions may result in a fine. PRC Section 4291 also requires the Department of Forestry and Fire Protection (CalFire) to develop, periodically update and post on the internet a guidance document regarding fuels management. The full text of the measure is provided in Appendix A.

The NCSD/NFD has had a defensible space program for the past 20 years. This program entails a physical inspection of every property in the department's jurisdiction for compliance with California's defensible space laws. Properties that are not in compliance at the time of the first inspection receive follow-up visits and notices until they are brought into compliance. This ensures that every property complies with the defensible space regulations every year.

3.1.2 Government Code Section 66474.2

Before approving a tentative map (or a parcel map where a tentative map is not required) for an area located in a SRA or a very high fire hazard severity zone, the legislative body of the county must find that: the design and location of each lot in the subdivision, and the subdivision as a whole, are consistent with any applicable

MVWPSP EPEP

regulations adopted by CAL FIRE pursuant to PRC Sections 4290 and 4291; structural fire protection and suppression services will be provided to the subdivision by a county, city, special district, or other entity organized solely to provide fire protection services, or CAL FIRE; and ingress and egress meets the road standards for fire equipment access adopted pursuant to PRC Section 4290 and any applicable local ordinance.³⁸

3.1.3 Placer County General Plan

The Health and Safety Element of the *Placer County General Plan* (2013) includes the following policies regarding fire hazards within Placer County:

- ▲ **Policy 8.C.1.** The county shall ensure that development in high-fire-hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards and meets all applicable state and county fire standards;
- ▲ **Policy 8.C.2.** The county shall require that discretionary permits for new development in fire hazard areas be conditioned to include requirements for fire-resistant vegetation, cleared fire breaks, or a long-term comprehensive fuel management program. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas;
- ▲ **Policy 8.C.3.** The county shall require that new development meets state, county, and local fire district standards for fire protection;
- ▲ **Policy 8.C.4.** The county shall refer development proposals in the unincorporated county to the appropriate local fire agencies for review for compliance with fire safety standards. If dual responsibility exists, then both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall be applied;
- ▲ **Policy 8.C.5.** The county shall ensure that existing and new buildings of public assembly incorporate adequate fire protection measures to reduce the potential loss of life and property in accordance with state and local codes and ordinances.

3.1.4 Placer County Fire Code

Placer County has adopted the 2013 California Building Code, Title 24 of the California Code of Regulations, and the 2013 Fire Code (Sections 15.04.700 and 15.04.710 Fire Code Amendment). The Fire Code addresses emergency access, access gates, sprinkler systems, fire alarms within buildings, and construction of access roads to accommodate fire apparatus. The Fire Code requires that an automatic fire sprinklers and/or fire extinguishing system be installed throughout new one- and two-family dwellings and commercial buildings 3,600 square feet and larger.

3.1.5 Martis Valley Community Plan

The Martis Valley Community Plan (MVCP) covers the 25,570 acres of the Martis Valley that are within Placer County, including the West Parcel. The MVCP sets forth goals, policies, assumptions, guidelines, standards and implementation measures to guide development within Martis Valley. The public facilities and services section of the MVCP

³⁸ Ascent Environmental, *Draft Environmental Impact Report, Martis Valley West Parcel Specific Plan*, October 2015, page 17-9.

addresses development of timely coordinated response procedures by Truckee FPD and Northstar CSD to all hazard and disasters, including hazardous materials releases and wildfires (Goals 6.A and 6.H and Policies 6.A.1, 6.A.2, 6.H.1, 6.H.2, and 6.H.14). The MVCP also includes policies that identify procedures with which new development must comply to ensure proper fire hazard reduction and meet established fire protection standards (Policies 6.H.9, 6.H.11, 6.H.12, and 6.H.13). The MVCP also addresses limiting residential development and maintaining open space uses near the airport and in areas with extreme and high fire risk (Goal 1.I and Policy 1.I.1).

NCSD/NFD Ordinances and Plans

The MVWPSP is anticipated to annex into the NCSD for water and service, fire protection and trail maintenance. If and when the MVWPSP is annexed to NCSD the following ordinances will apply. If for any reason the MVWPSP does not annex to the NCSD, the provisions of the following ordinances shall be required through the Master CC&Rs, which shall be enforced upon occupancy of the first residential unit.

3.1.6 NCSD Ordinance 21-05 (Water Code)

The NCSD Water Code (Water Ordinance 21-05) provides specifications for installing water infrastructure in new development. For example, the Code requires a minimum The Water Code addresses water pressure, design flows and the placement and sizing of fire hydrants.

3.1.7 NCSD Ordinance 26-09 (Fuel Maintenance and Defensible Space)

The NCSD Ordinance 26-09 address wild land prevention and sets forth defensible space requirements (see Appendix A). The ordinance provides requirements for two types of land—residential or commercial parcels and fuel reduction zones. Residential and commercial parcels must comply with the provisions of PRC Section 4291, discussed above, and meet minimum specifications for fuel removal within 100-feet of structures. For example, the ordinance requires the following:

- maintain 5 feet of clearance of all combustible round fuels around structures;
- maintain an average pine needle/forest duff depth of 1 inch up to 100 feet from structures;
- remove tree limbs within 10 feet of any structure;
- maintain minimum standards on varying slopes for horizontal spacing between shrubs;
- remove dead or dying trees on the property; and
- remove lower tree limbs to a minimum of 8 feet or remove limbs from the bottom third of the tree for shorter trees, as measured from the lowest hanging portion of the drip line to the ground.

The ordinance also identifies requirements for management activities in fuel reduction zones, which are those areas of land not defined as Residential or Commercial, but that are within 300 feet of Residential or Commercial parcels. New development and landscape plans are also required to comply with the ordinance.

In addition to reviewing the project for compliance with the above requirements, NFD would also review the project for width and grade of roadways, spacing of fire hydrants, available water to supply fire hydrants, response times to the project from existing fire stations, and the two points of site ingress and egress.³⁹

3.1.8 NCSO Ordinance 28-13 (Fire Code)

The NCSO Fire Code incorporates the California Fire Code, discussed above. The Code provides measures to ensure that the NFD can access areas that have security gates, provides minimum specifications for fire department infrastructure, fire hydrants, automatic sprinkler systems and addresses. Ordinance 28-13 is provided in full in Appendix A.

3.1.9 Community Wildfire Protection Plan

The NFD also has adopted a Community Wildfire Protection Plan (CWPP), which identifies measures to reduce or eliminate the loss of life, property and resources caused by wildfire in the Northstar community.⁴⁰ The CWPP quantifies current risks and hazards, and sets forth the priorities for areas where fuel reduction will take place, as well as other methods for addressing fire hazards. The CWPP is updated periodically, and will next be updated in 2017.

3.1.10 MVWPSP Mitigation Measures

The MVWPSP EIR includes mitigation to ensure that the NFD is adequately staffed and has the facilities necessary to meet the demand for fire protection services resulting from development of the MVWPSP; that construction activities do not interfere with emergency access; and to ensure that buildings are designed and constructed in compliance with state law. The text of the mitigation measures is provided:

Mitigation Measure 17-3: Provide additional fire protection staffing

Before recordation of the Large Lot Final Map or the initial Small Lot Final Map (or any commercial development), the project proponent shall develop and implement a funding plan that would sufficiently supplement tax revenue from the MVWPSP to add fire protection staff. Such funding shall remain in place until the funding stream from property tax revenue is sufficient to maintain fire protection standards of service. If this does not occur, an Assessment District would be necessary. In consultation with NFD, the fire protection staffing increases shall be tied to project occupancy such that level of service is maintained as level of risk is increased as the development is built out.

The funding plan would provide for revenue to initially employ one additional full-time firefighter and then, over time as development occurs, to add another additional full-time firefighter to properly respond to a serious building fire that could occur in the vicinity of 5 miles from the fire station.

The funding plan shall include the following framework for the trigger points for increased staffing. The trigger points for adding daily staffing above the current minimum of four should be:

³⁹ Ascent Environmental, *Draft Environmental Impact Report, Martis Valley West Parcel Specific Plan*, October 2015, page 18-13.

⁴⁰ Northstar Fire Department, *Northstar Community Wildfire Protection Plan*, February 2015.

1. With the certificate of occupancy of the first dwelling unit or any of the commercial space, the project developer shall provide the project's fair share contribution to overtime funds to the Northstar Fire Department to provide a minimum of five firefighters on duty 24/7/365.
2. With the certificate of occupancy of the 100th dwelling unit, or 50 percent of the commercial space, the project developer shall provide to the Department the added revenue to add two permanent full-time firefighters, one each to two shifts, raising the minimum staffing to six career firefighters 24/7/365. At this point, all three duty shifts will have six firefighters each.
3. With the certificate of occupancy of the 200th dwelling unit, or 75 percent of the commercial space, the project developer shall pay the project's fair share contribution to ensure the Department has the overtime funds to maintain a minimum of six career firefighters on duty 24/7/365.
4. With the certificate of occupancy of the 300th dwelling unit, or 100 percent of the commercial space, the project developer shall pay the project's fair share contribution to ensure that the department has the funds to add three additional firefighters, one per duty platoon, raising each to seven firefighters.

Mitigation Measure 10-6: Develop and implement a construction traffic management plan

Prior to Improvement Plan approval, the project applicant shall develop and submit for review and approval a construction traffic management plan (TMP) to the satisfaction of the Placer County Department of Public Works and Caltrans. The plan shall include (but not be limited to) items such as:

- guidance on the number and size of trucks per day entering and leaving the West Parcel development area;
- identification of arrival/departure times that would minimize traffic impacts;
- locations of staging areas;
- locations of employee parking and methods to encourage carpooling and use of alternative transportation;
- criteria for use of flaggers and other traffic controls;
- preservation of safe and convenient passage for bicyclists and pedestrians through/around construction areas;
- monitoring for roadbed damage and timing for completing repairs;
- limitations on construction activity during peak/holiday weekends and special events;
- preservation of emergency vehicle access;
- removing traffic obstructions during emergency evacuation events; and
- providing a point of contact for Martis Valley residents and guests to obtain construction information, have questions answered, and convey complaints.

3.2 Seismic Hazards

3.2.1 California Building Code

In California, seismic hazards are addressed primarily through building code requirements intended to ensure that new construction is built to withstand seismic activity likely to occur within the area being developed. The California Building Code (CBC) (California Code of Regulations, Title 24) is based on the International Building Code (IBC). The IBC Seismic Zone Map of the United States places Placer County, including the Project area, within Seismic Hazard Zone III, which corresponds to an area that may experience damage due to earthquakes having moderate intensities of V or more on Modified Mercalli Scale, which corresponds to maximum momentum magnitudes of 4.9 or greater. The CBC has been modified for California conditions with more detailed and/or more stringent regulations. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, while Chapter 18A regulates construction on unstable soils, such as expansive soils and areas subject to liquefaction.⁴¹

The plan area is not in an Alquist-Priolo Earthquake Fault Zone, so PRC Sections 2621-630 would not apply to the MVWPSP.⁴²

3.2.2 Placer County General Plan

The relevant policies of the *Placer County General Plan* (2013) with respect to hazards are listed below:

- ▲ **Policy 8.A.1.** The county shall require the preparation of a soils engineering and geologic seismic analysis prior to permitting development in areas prone to geological or seismic hazards (i.e., ground shaking, landslides, liquefaction, critically expansive soils, and avalanche);
- ▲ **Policy 8.A.2.** The county shall require submission of a preliminary soils report, prepared by a registered civil engineer and based upon adequate test borings, for every major subdivision and for each individual lot where critically expansive soils have been identified or are expected to exist;
- ▲ **Policy 8.A.7.** In areas subject to severe ground shaking, the county shall require that new structures intended for human occupancy be designed and constructed to minimize risk to the safety of occupants;

⁴¹ Ascent Environmental, *Draft Environmental Impact Report, Village at Squaw Valley Specific Plan*, May 2015, page 12-15.

⁴² Ascent Environmental, *Draft Environmental Impact Report, Martis Valley West Parcel Specific Plan*, October 2015, page 18-13.2015, page 14-4.

- ▲ **Policy 8.A.9.** The county shall require that the location and/or design of any new buildings, facilities, or other development in areas subject to earthquake activity minimize exposure to danger from fault rupture or creep;
- ▲ **Policy 8.A.10.** The county shall require that new structures permitted in areas of high liquefaction potential be sited, designed, and constructed to minimize the dangers from damage due to earthquake induced liquefaction;
- ▲ **Policy 8.A.11.** The county shall limit development in areas of steep or unstable slopes to minimize hazards caused by landslides or liquefaction.

3.2.3 Martis Valley Community Plan

The Martis Valley community Plan contains the following policies related to seismic hazards:

Goal 9.A: To minimize the loss of life, injury, and property damage due to seismic and geological hazards.

Policies

- 9.A.1. The County shall require the preparation of a soils or geologic investigation prior to permitting development in areas of known or suspected geological or seismic hazards (i.e., seismically induced ground shaking, landslides, liquefaction, critically expansive soils, avalanche).

3.3 Avalanche Regulations

There are no federal or State laws governing development in avalanche zones. The relevant county policies and regulations are provided below.

3.3.1 Placer County General Plan

The relevant policies of the *Placer County General Plan* (2013) with respect to seismic and geologic hazards are listed below.

- ▲ **Policy 8.A.1.** The county shall require the preparation of a soils engineering and geologic-seismic analysis prior to permitting development in areas prone to geological or seismic hazards (i.e., ground shaking, landslides, liquefaction, critically expansive soils, and avalanche);
- ▲ **Policy 8.A.12 and 8.H.3 (the same language is in each policy).** The county shall not issue permits for new development in potential avalanche hazard areas (PAHA) as designated in the Placer County Avalanche Management Ordinance unless project proponents can demonstrate that such development will be safe under anticipated snow loads and conditions of an avalanche;
- ▲ **Policy 8.H.2.** The county shall require new development in areas of avalanche hazard to be sited, designed, and constructed to minimize avalanche hazards.

3.3.2 Martis Valley Community Plan

The Martis Valley Community Plan contains the following policies regarding avalanches:

Policies

- 1.I.1. The County shall require that areas hazardous to public safety and welfare be retained as open space. This category includes:
 - a. Areas subject to avalanche, landslide, or with severe slope stability problems.

- 4.B.6. The County shall require that new development on hillsides employ design, construction, and maintenance techniques that:
 - c. Minimize risk to life and property from slope failure, landslides, avalanches, and flooding;

Goal 9.A: To minimize the loss of life, injury, and property damage due to seismic and geological hazards.

Policies

- 9.A.1. The County shall require the preparation of a soils or geologic investigation prior to permitting development in areas of known or suspected geological or seismic hazards (i.e., seismically induced ground shaking, landslides, liquefaction, critically expansive soils, avalanche).

Goal: 9.B. To minimize the risk of loss of life, injury, and damage to property due to avalanche.

- 9.B.1. The County shall maintain maps of potential avalanche hazard areas.
- 9.B.2. The County shall require new development in areas of avalanche hazard to be sited, designed, and constructed to minimize avalanche hazards.
- 9.B.3. The County shall not issue permits for new development in potential avalanche hazard areas (PAHA) as designated in the Placer County *Avalanche Management Ordinance* unless project proponents can demonstrate that such development will be safe under anticipated snow loads and conditions of an avalanche.

3.3.3 Avalanche Management Ordinance

Article 12.40 of the Placer County Code addresses Avalanche Management Areas and establishes the Placer County Avalanche Management Ordinance. The Article describes PAHAs as those areas where, after investigation and study, the county finds that an avalanche potential exists because of steepness of slope, exposure, snow pack composition, wind, temperature, rate of snowfall, and other interacting factors. PAHA zones are established to identify those areas with avalanche potential based on approved studies that designate a minimum probability of occurrence greater than one in 100 per year, or where avalanche damage is documented.

Placer County limits construction in PAHAs and will not issue a building permit for construction in a PAHA without certifying that the structure will be safe under the anticipated snow loads and conditions of an avalanche.

3.4 Flood Regulations

3.4.1 National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from and mitigating against disasters. Formed in 1979 to merge many of the separate disaster related responsibilities of the federal government into one agency, FEMA is responsible for coordinating the federal response to floods, earthquakes, hurricanes, and other natural or man-made disasters and providing disaster assistance to states, communities and individuals. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that provide assistance for mitigating future damages from natural hazards. Established in 1968 with the passage of the National Flood Insurance Act, the NFIP is a federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the federal government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the federal government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods. Placer County participates in the NFIP by adopting and enforcing floodplain management ordinances to reduce future flood damage.

3.4.2 Placer County General Plan

The Placer County General Plan includes the following flood-related policies:

- ▲ **Policy 4.E.11.** The county shall require new development to adequately mitigate increases in stormwater peak flows and/or volume. Mitigation measures should take into consideration impacts on adjoining lands in the unincorporated area and on properties in jurisdictions within and immediately adjacent to Placer County;
- ▲ **Policy 4.F.1.** The county shall require that arterial roadways and expressways, residences, commercial land industrial uses and emergency facilities be protected, at a minimum, from a 100-year storm event;
- ▲ **Policy 4.F.2.** The county shall recognize floodplains as a potential public resource to be managed and maintained for the public's benefit;
- ▲ **Policy 4.F.4.** The county shall require evaluation of potential flood hazards prior to approval of development projects. The county shall require

proponents of new development to submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully developed, unmitigated runoff conditions;

- ▲ **Policy 4.F.5.** The county shall attempt to maintain natural conditions within the 100-year floodplain of all rivers and streams except under the following circumstances:
Where work is required to manage and maintain the stream's drainage characteristics and where such work is done in accordance with the Placer County Flood Damage Prevention Ordinance, California Department of Fish and Wildlife regulations, and Clean Water Act provisions administered by the U.S. Army Corps of Engineers.
- ▲ **Policy 4.F.8.** The county shall, where possible, view flood waters as a resource to be used for waterfowl habitat, aquifer recharge, fishery enhancement, agricultural water supply, and other suitable uses;
- ▲ **Policy 4.F.10.** The county shall preserve or enhance the aesthetic qualities of natural drainage courses in their natural or improved state compatible with flood control requirements and economic, environmental, and ecological factors;
- ▲ **Policy 4.F.13.** The county shall continue to implement and enforce its Grading, Erosion and Sediment Control Ordinance and Flood Damage Prevention Ordinance;
- ▲ **Policy 4.F.14.** The county shall ensure that new storm drainage systems are designed in conformance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the county's Land Development Manual.

3.4.3 Martis Valley Community Plan

The Public Facilities and Services Element (Section VI) of the MVCP addresses flood protection in (Policies 6.F.1 through 6.F.12).

Goal 6.F: To protect the lives and property of the citizens of Placer County from hazards associated with development in flood plains and manage flood plains for their natural resource values.

Policies

- 6.F.1. The County shall require that arterial roadways and expressways, residences, commercial and industrial uses and emergency facilities be protected, at a minimum, from a 100-year storm event.
- 6.F.2. The County shall recognize flood plains as a potential public resource to be managed and maintained for the public's benefit.
- 6.F.3. The County shall continue to work closely with the U.S. Army Corps of Engineers, the Resource Conservation District, the Federal Emergency Management Agency, the State Department of Water Resources, and the Placer County Flood Control District, in defining

existing and potential flood problem areas.

- 6.F.4. The County shall require evaluation of potential flood hazards prior to approval of development projects. The County shall require proponents of new development to submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully developed, unmitigated runoff conditions.
- 6.F.5. The County shall maintain natural conditions within the 100-year floodplain of all rivers and streams except under the following circumstances:
 - a. Where work is required to manage and maintain the stream's drainage characteristics and where such work is done in accordance with the *Placer County Flood Damage Prevention Ordinance*, California Department of Fish and Game regulations, and Clean Water Act provisions administered by the U.S. Army Corps of Engineers; or
 - b. For the construction of bridges or other similar drainage crossings.
 - c. Where recreational facilities can be safely and sensitively located.
- 6.F.6. The County shall continue to coordinate efforts with local, state, and federal agencies to achieve adequate water quality and flood protection.
- 6.F.7. The County shall cooperate with the Placer County Flood Control and Water Conservation District, surrounding jurisdictions, the cities in the county, and other public agencies in planning and implementing regional flood control improvements.
- 6.F.8. The County shall, where possible, view flood waters as a resource to be used for waterfowl habitat, aquifer recharge, fishery enhancement, landscape irrigation, and other suitable uses.
- 6.F.9. The County shall continue to implement floodplain zoning and undertake other actions required to comply with FEMA requirements, and to maintain the County's eligibility under the National Flood Insurance Program.
- 6.F.10. The County shall preserve or enhance the aesthetic qualities of natural drainage courses in their natural or improved state compatible with flood control requirements and economic, environmental, and ecological factors.
- 6.F.11. The County shall promote the use of natural or non-structural flood control facilities, including off-stream flood control basins, to preserve and enhance creek corridors.
- 6.F.12. The County shall ensure that new storm drainage systems are designed

in conformance with the Placer County Flood Control and Water Conservation District's *Stormwater Management Manual* and the County's *Land Development Manual*.

3.4.4 Placer County Flood Control and Water Conservation District

The Placer County Flood Control and Water Conservation District (PCFCWCD) was formed by legislative resolution on Senate Bill 1312 and made effective on August 23, 1984. Formulation and guidance of the PCFCWCD was made by consensus of other participating local government agencies, including the Placer Resource Conservation District and Soil Conservation Service. The objective of PCFCWCD is to reduce the effects of flooding by maintenance of drainage basins and the use of detention/retention basins; offer technical support; perform studies, advise, and collect data; and coordinate with adjacent jurisdictions. The PCFCWCD's Stormwater Management Manual (1990) includes standards and methods for the planning and design of drainage and flood control infrastructure.

3.4.5 MVWPSP EIR Mitigation Measures

The MVWPSP EIR includes mitigation to ensure that drainage facilities are designed to County standards, and the risk of flooding is minimized. The text of the mitigation measures is provided below:

Mitigation Measure 15-5a: Prepare and implement a final drainage report

As part of the Improvement Plan submittal process, the preliminary Drainage Report provided during environmental review shall be submitted in final format. The final Drainage Report may require more detail than that provided in the preliminary report, and will be reviewed in concert with the Improvement Plans to confirm conformity between the two. The report shall be prepared by a Registered Civil Engineer and shall, at a minimum, include: A written text addressing existing conditions, the effects of the proposed improvements, all appropriate calculations, watershed maps, changes in flows and patterns, and proposed on- and off-site improvements and drainage easements to accommodate flows from the MVWPSP project. The report shall identify water quality protection features and methods to be used during construction, as well as long-term post-construction water quality measures. The final Drainage Report shall be prepared in conformance with the requirements of Section 5 of the Land Development Manual and the Placer County Storm Water Management Manual that are in effect at the time of Improvement Plan submittal.

Mitigation Measure 15-5b: Reduce runoff to pre-project conditions

The Improvement Plan submittal and final Drainage Report shall provide details showing that stormwater run-off shall be reduced to pre-project conditions through the installation of retention/detention facilities. Retention/detention facilities shall be designed in accordance with the requirements of the Placer County Stormwater Management Manual that are in effect at the time of submittal, and to the satisfaction of the Engineering and Surveying Department (ESD), and shall be shown on the Improvement Plans. The ESD may, after review of the project final drainage report, delete this requirement if it is determined that drainage conditions do not warrant installation of this type of facility. In the event onsite detention requirements are waived, this project may be subject to payment of any in-lieu fees

payable before Improvement Plan approval as prescribed by County Ordinance. Maintenance of detention facilities by the homeowner's association, property owner's association, property owner, or entity responsible for project maintenance shall be required. No retention/detention facility construction shall be permitted within any identified wetlands area, floodplain, or right-of-way, except as authorized by project approvals.

Mitigation Measure 15-6a: Delineate 100-year floodplain on subdivision maps

On the Improvement Plans and Informational Sheet(s) filed with the appropriate Large Lot or Small Lot Final Subdivision Map(s), show the limits of the future, unmitigated, fully-developed 100-year floodplain (after grading) for Middle Martis Creek and designate same as a building setback line, unless greater setbacks are required by other conditions contained herein.

Mitigation Measure 15-6b: Demonstrate that all building pad elevations are a minimum of 2 feet above the 100-year floodplain line

The Improvement Plans and Informational Sheet(s) filed with the appropriate Large Lot or Small Lot Final Subdivision Map(s) shall show finished building pad elevations to be a minimum of two feet above the 100-year floodplain line (or finished floor three feet above the 100-year floodplain line). The final pad elevation shall be certified by a California registered civil engineer or licensed land surveyor and submitted to the Engineering and Surveying Department. This certification shall be done before construction of the foundation or at the completion of final grading, whichever comes first. No construction is allowed until the certification has been received by the Engineering and Surveying Department and approved by the floodplain manager. Benchmark elevation and location shall be shown on the Improvement Plans and Informational Sheet (s) to the satisfaction of Development Review Committee.

Mitigation Measure 15-6c: Construct Middle Martis Creek Bridge to span 100-year floodplain limits

The Improvement Plans for the construction of the main access road shall include the construction of a roadway bridge spanning the 100-year floodplain limits of Middle Martis Creek near the encroachment with SR 267.

Mitigation Measure 15-6d: Prohibit activities or construction that would increase the 100-year floodplain water surface elevation

The project applicant shall prepare a final drainage report at the time of submittal of the project's initial improvement plans that demonstrates that the project will not increase the limits or water surface elevation of the 100-year floodplain of Middle Martis Creek upstream or downstream of the project site. The report shall be submitted with the project's initial Improvement Plans, and shall be reviewed and approved by the Engineering and Surveying Department and the Placer County Flood Control District. The floodplain analysis shall be prepared in conformance with the Placer County Stormwater Management Manual that is in effect at the time of submittal.

Mitigation Measure 15-6e: Maintain or construct adequate flood storage within the 100-year floodplain of Middle Martis Creek

The applicant shall maintain or construct adequate flood storage within the 100-year floodplain of Middle Martis Creek to the satisfaction of the ESD and the Placer County Flood Control District. This replacement storage shall only be associated with the construction fills associated with the roadway infrastructure required for development of the project.

The applicant shall prepare an analysis to demonstrate the amount of storage to be replaced, the effect on flood flows of the replacement area, any effects on flood conveyance and methods to minimize any maintenance of the replacement storage. The size (volume) of this replacement shall be based on the volume of storage lost by project construction.

Any required storage area shall be designed and shown on the applicable set of Improvement Plans for the project after the above analysis is approved by ESD and the Flood Control District. It shall be constructed concurrent with any grading taking place within the existing 100-year floodplain.

Mitigation Measure 15-6f: Prohibit grading within the 100-year floodplain

To protect site resources, no grading activities of any kind may take place within the 100-year floodplain of the stream/drainage way unless otherwise approved as a part of this project. All work shall conform to provisions of the County Flood Damage Prevention Regulations (Section 15.52, Placer County Code). A standard note to this effect shall be included on the Improvement Plans. The location of the 100-year floodplain shall be shown on the Improvement Plans.

4.0 FIRE PREVENTION AND EMERGENCY PLANNING

This chapter addresses steps to be taken in the planning, design and construction of MVWPSP development to minimize hazards and to facilitate access for emergency service providers. In addition, ongoing measures to reduce the risk of fire and other hazards are identified. The measures identified below are based on California state law, MVWPSP policies, Placer County regulations, MVWPSP EIR mitigation, Northstar Fire Department (NFD)/Northstar Community Services District (NCSD) codes and ordinances and best practices.

4.1 MVWPSP Policies

The MVWPSP establishes policies and development standards for development of the plan area including development requirements for specific land uses, community and building design, circulation, open space, services and utilities. Goals and policies addressing fire protection and emergency response include:

- Policy PU-5: Maintain water supply and pressure sufficient to serve annual and daily peak demand, including fire flows.
- Policy PSU-21: Incorporate design features that meet or exceed applicable safety regulations, including NCSD Ordinance 28-13.
- Policy PSU-22: Require that property owners maintain defensible space around structures, as defined by the NFD/NCSD.
- Policy PSU-23: Design and site all structures in a manner that minimizes risk from fire hazards.
- Policy PSU-24: Encourage and practice fuel reduction methods consistent with the NCSD Defensible Space Ordinance (26-09).
- Policy PSU-25: A Fire Protection Plan (FPP) for the MVWPSP shall be prepared prior to the recordation of the first small lot tentative map to the satisfaction of Placer County and the NFD. The FPP shall be updated to include new development areas as subsequent small lot tentative maps are submitted. The FPP shall comply with applicable State law and regulations and NFD ordinances, including California Public Resource Code Sections 4290 and 4291 and NFD Ordinances 26-09 and 28-13. The FPP shall include, at a minimum, the following:
- Identification of emergency evacuation routes;
 - Emergency access road standards;
 - Standards for signs identifying evacuation routes;
 - Compliance with NFD/NCSD fire flow requirements;
 - Defensible space measures;
 - Provisions for Fuel Reduction Zones;
 - Vegetation placement, maintenance, removal and disposal; and
 - Program for disseminating public safety information.

- Policy PSU 26: The MVWPSP water supply system shall be adequate to provide reasonable protection of assets from wildfire without disruption of domestic water use, comparable to similar projects in the region.
- Policy ER-F5: Each property owner shall maintain defensible space as defined by the Northstar Fire Department, and abide by the NFD codes and ordinances.
- Policy ER-AG1: Tree removal on slopes 2:1 or greater support avalanche activity shall be conducted in consultation with a qualified avalanche consultant to ensure that a substantial avalanche hazard is not created.
- Policy ER-AG2: Residential buildings shall not be located in the non-development areas shown in Figure 3-3 and/or on sites with slopes that predominately exceed 25%.
- Policy ER-AG3: Any development located in the approximate area of the ancient landslide (Figure 2A of the December 3, 2013, Addendum No. 1 to the Geotechnical Review) shall be engineered to protect buildings from potential slope instability.
- Policy ER-AG4: If any development is proposed within 100 feet of the fault trace (identified on Figure 3A of the December 3, 2013, Addendum No. 1 to the Geotechnical Review), the fault location will be evaluated for its presence, precise location and potential activity. If the fault is found to be potentially active, structures shall be set back an appropriate amount and engineered to withstand a seismic event based on the potential strength of the fault.

4.2 Fire Protection Plan

This Fire Protection Plan (FPP) is intended to implement MVWPSP Policy PSU-25 by addressing provisions for fire preparedness planning and response.

4.2.1 Water Supply and Fire Flow

MVWPSP infrastructure will be designed and constructed to provide adequate pressure for peak water demand, including fire flows. The project water distribution system, including fire hydrants, shall be designed to meet NFD/NCSD standards for peak pressure and fire flows, as described in NCSD Water Ordinance 21-05. Groundwater pumps shall be capable of providing 125% of the engineered requirement for peak flows, including fire flows. It is anticipated that two 350,000 gallon water storage tanks will be constructed at an elevation of approximately 7,750 feet mean sea level (msl).

4.2.2 Emergency Access and EVA Standards

The MVWPSP identifies a primary EVA that would provide ingress and egress for emergency vehicles, and that could be used as an evacuation route by residents, employees and guests during an emergency. The MVWP EVA would be incorporated into the Northstar Fire Department's EVA plan (as shown in Appendix B).

Emergency Vehicle Access Road Alignment and Standards

In addition to the main road to the plan area, the MVWPSP provides for a primary emergency vehicle access (EVA) road which will connect the plan area to SR 267 (see

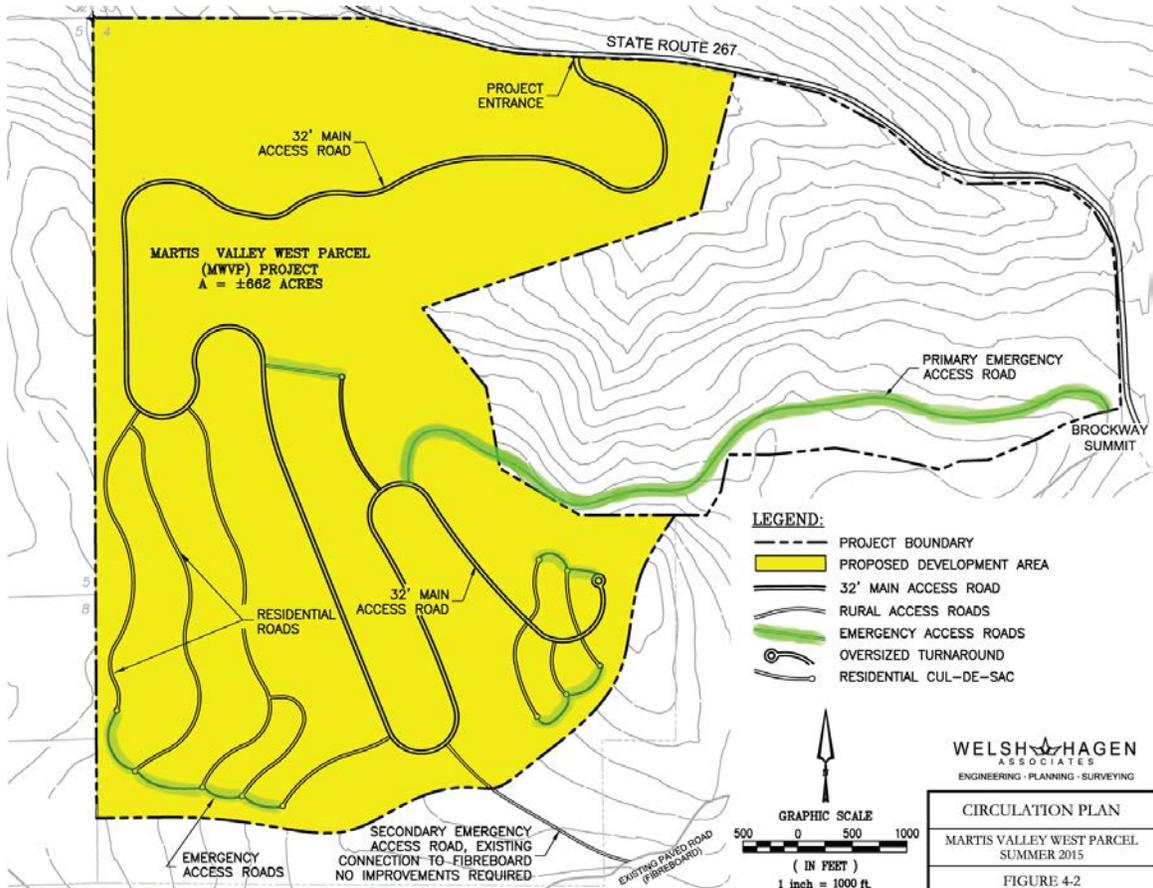
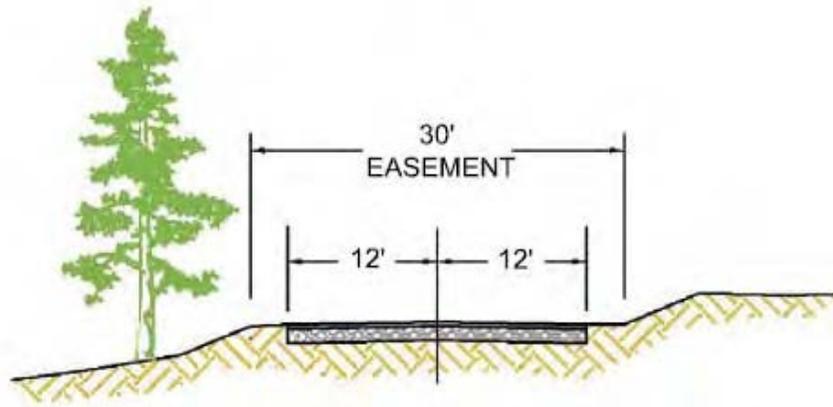


Figure 4-1 Circulation Plan

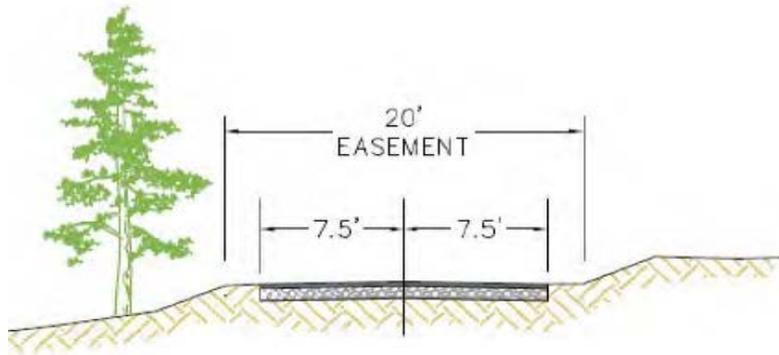
Figure 4-1). The primary EVA will be a 24' paved, year-round access for emergency vehicles and evacuation only, as shown in Figure 4-2. The NFD shall review the final design of the primary EVA. Except during evacuation, the primary EVA will only be used by emergency vehicles and service vehicles.

In addition, as shown Figure 4-1, there will be internal emergency access roads that connect cul-de-sacs and dead-end streets, so that every parcel has two routes for ingress and egress in an emergency.

Finally, during the non-winter months, secondary emergency access may be provided via Fibreboard Freeway, which is connected to the plan area by dirt roads. No improvements to Fibreboard Freeway or the connecting roads are planned, and this connection is not intended to serve as the required EVA. Rather, it provides an additional option if needed during an emergency.



Primary EVA Cross-Section



Internal EVA Cross-Section

Figure 4-2, EVA Road Cross-Sections

Signage

Signs identifying the EVAs shall be posted at central community facilities, e.g. post office boxes and the bus stop. Sign design and text shall be prepared in consultation with the NFD.

During the erection of the entry to the MVWP development or upon the sales of the 200 unit, the Developer shall install a permanent variable message sign (VMS) near the entry to be seen by vehicular traffic exiting the project. The sign should be no smaller than 36" x 24". The developer upon completion will deed over the VMS to the master HOA for their use and maintenance. The VMS sign is not intended for marketing, rather for community messaging pertaining to Fire-life Safety, e.g. "burn piles active", phone numbers and websites to use during an emergency.

Gates

Regular access to the primary EVA will be restricted by automatic gates with Click-to-Enter or comparable software will be placed at both ends of the EVA. The primary EVA will only be used by emergency vehicles and service vehicles, except during evacuation. The internal EVA leading to Fibreboard will not have automatic gates, rather it will remain with US Forest Service (USFS) manual locked gates. Coordination in a catastrophic event to open these gates will be coordinated by the NFD with the USFS, Tahoe Basin division.

One or more neighborhoods may have security gates prohibiting unauthorized access. All security gates shall meet California Fire Code Section 503.6. All security gates shall have an approved means of emergency operation, and shall be operational at all times.

Address Identification

All buildings within the plan area shall have approved address numbers, building numbers and/or building identification placed in a position that is plainly legible and visible from the street or road fronting the property.

4.2.3 Building Fire and Ignition Resistance and Fire Protection Systems

MVWPSP buildings will be constructed in compliance with all applicable and current local and state building and fire codes and their associated amendments, as adopted by Placer County. Currently, Placer County has adopted the 2013 California Building Code, Title 24 of the California Code of Regulations, and the 2013 Fire Code (Sections 15.04.700 and 15.04.710 Fire Code Amendment).

Consistent with the California Building and Fire Code, the following measures will be used to minimize the potential for structure ignition:

- ignition and ember resistant building materials;
- fire protection systems; interior sprinklers;
- spark arrestors on all chimneys and vents, outdoor fireplaces;
- private charcoal burning barbeques will be prohibited. Mobile charcoal barbeques may be used for special events;
- designated sheltering structure(s); and
- compliance with all other applicable California Building Code requirements.

4.2.4 Defensible Space/Fuel Maintenance

All residential and commercial space parcels and all common areas maintained or owned by condominium or townhome developments or homeowners associations shall comply with PRC Code Sections 4291 and the NCSD/NFD Ordinance 26-09 regarding defensible space. Parcels that are designated/zoned Forest, and that are within 300 feet of residential or commercial parcels, shall comply with the NCSD fuel reduction measures. Ordinance 26-09 is summarized in Chapter 2 and provided in full in Appendix A. Key provisions include the following:

- Maintain the following minimum specifications within 100 feet of any structures on the property:
- Five feet of clearance (the "Buffer") of all combustible ground fuels around the perimeter of any structure.
- Beyond the Buffer, and up to 100 feet or to the property line, whichever is less, maintain an average pine needle/forest duff depth of one inch, and in no case exceed a maximum depth of two inches.
- Remove any tree limbs that are within ten feet horizontally or vertically of any structure.
- Maintain shrubs on the entire property according to the minimum horizontal spacing between edges of shrubs based on the slope of the property.
- Remove all standing dead or dying trees on the entire property.
- Remove all of the lower tree limbs to a minimum of eight feet high (for shorter trees remove limbs on the bottom third of the tree). This distance shall be measured from the lowest hanging portion of the drip line to the ground.

The master CC&Rs for development within the West Parcel shall also specify requirements for landscape placement and maintenance and vegetation removal and disposal. These provisions shall comply with State and NCS&D/NFD requirements. The MVW&PSP Master CC&Rs must be reviewed and approved by the County prior to occupancy of the first residential unit.

4.2.5 Wildfire Education and Public Communication

The NFD *Emergency Preparedness and Evacuation Guide* (provided in Appendix C) shall be provided to every property owner at the initial closing for a parcel via the closing title company. The *Guide* shall be referenced in the CC&Rs.

Because the MVW&PSP will be made up of single-family homes, townhomes and condominium-style development, rather than hotels and lodging with a single owner, the master Homeowners Associations (HOA) will be primary organizations that coordinate with the NFD and other emergency service providers and that disseminate information to homeowners and businesses within the MVW&P.

The master HOA will encourage residents, business owners and employees to subscribe to Placer Alert (www.placer-alert.org) and Nixle Connect (www.nixle.com). Placer Alert provides notifications to recipients via phone calls, text messaging and email, including notices about threats to public health and safety. Nixle Connect is a free community information service that allows the fire department to communicate directly with the public via text and email at no cost. Communications can include emergency alerts, such as evacuation orders, and public safety information.

The master HOA shall encourage residential property owners to keep the NFD *Guide* in a convenient location and with other materials provided to renters and guests. Business owners will be encouraged to provide a copy of the *Guide* to their employees, and to

discuss fire prevention measures and evacuation routes and procedures as part of their employee orientation.

The master HOA shall direct the HOA manager to provide public safety updates and fire-related information on the HOA website, in the HOA newsletter and at HOA meetings, as needed.

Each HOA is also encouraged to do the following:

- Request that NFD and Placer County Sheriff attend annual homeowner meetings to inform all owners of ongoing concerns or new programs (e.g. defensible space, burn days and likes). Currently, HOAs in the Northstar region routinely invite representatives of the fire department and sheriff's office to attend meetings.
- Distribute NCSD's annual monthly meeting list with monthly reminders. NCSD's monthly meeting has a section where NFD speaks to the community on programs, initiatives and/or concerns.
- Maintain an up-to-date electronic distribution system for notices with current member email and/or text addresses per regulations in the Davis-Sterling Act for California HOAs.
- Encourage the HOA to maintain an official website, as well as having a plan in place to trigger notice (e.g. pop-up or screen background change) during an emergency.
- Meet with the NCSD/NFD staff when issues arise, e.g. drought/wild fire, in order to be proactive with a community response.

4.3 Forestry Management Plan

A Forestry Management Plan shall be prepared prior to approval of the first small lot tentative map, and shall address the following:

- Detailed specifications for forest thinning on all lands within the West Parcel, pursuant to NCSD code requirements.
- Detailed specifications for forest thinning within the wildland/urban interface fuel reduction zones to be implemented with each phase of development.
- Funding for ongoing forest thinning and maintenance.

The Forestry Management Plan shall be prepared by a qualified third party in consultation with the NFD.

4.4 Evacuation Plan

The MVWP will be annexed into the NCSD, and will thereafter be incorporated into the evacuation plan for the NFD service area. All evacuation procedures will be conducted according to the provisions of the East Side Evacuation Plan, and/or NFD/NCSD procedures. Therefore, this plan does not specify additional steps to be taken prior to or during an evacuation. Instead, the emphasis is on preparation and coordination with the NFD/NCSD and other emergency service providers.

As discussed above, the HOAs will take an active role in communicating public safety information to homeowners and businesses. The Board chair/president shall act as or appoint a designee to be the Emergency Coordinator for the master HOA, responsible for coordination with service providers in the event of an emergency. This will not supplant direct notifications of property owners and guests through Nixle, Placer Alert, and local fire department and law enforcement staff when an evacuation order is in place, but should augment the dissemination of information during a fire or other potential emergency. Further, the Master CC&Rs shall include a requirement that upon purchase of the 200th unit within the master HOA, the HOA shall form an emergency preparedness committee responsible for keeping emergency preparedness documents up to date, and working with the Emergency Coordinator on procedures for informing master HOA members of potential emergencies, working with emergency service providers, and so on.

An analysis prepared for the MVWPSP EIR found that evacuation of the entire West Parcel, assuming 100 percent occupancy, could be accomplished in 1.3 hours under existing conditions and 1.2 hours under cumulative conditions (the reduced time is due to the assumption that planned improvements for SR 267 have been constructed under cumulative conditions). Residents and guests would be directed by the entity acting as Incident Command (e.g., Sheriff) to the area around the Truckee-Tahoe Airport or one or more of the shelters identified in the East Side Evacuation Plan. The airport is located less than 5.1 miles from the West Parcel main entrance, and has parking areas that are sufficient to accommodate a large influx of vehicles. The analysis prepared for the MVWPSP EIR indicates that there should be adequate time to evacuate the West Parcel during a fire or other emergency.

Shelter-in-Place

In the unlikely event of an emergency wherein time necessary for proper valley evacuation is considered insufficient, it may be safer to “shelter-in-place”, rather than to leave the West Parcel. The Master CC&Rs shall include a requirement that an HOA amenity that is designed and constructed to serve as a shelter-in-place location shall be constructed prior to the 200 unit. In an emergency where shelter-in-place is required, this amenity would be open to the public, not just owners, as an area of refuge.

4.5 Avalanche Protection Measures

As discussed in Chapter 2, avalanche hazards are not expected to occur within the West Parcel, because steep slopes are heavily vegetated. As required by MVWPSP Policy ER-AG1, any tree removal on slopes that are steep enough to support avalanche activity must be conducted in consultation with a qualified avalanche consultant to ensure that an avalanche hazard is not created.

Because avalanches are not expected to occur within the West Parcel, no avalanche response provisions are included in this plan.

4.6 Seismic Protection Measures

All buildings within the West Parcel will be constructed in compliance with building code standards that address seismic activity. For the most part, these standards will ensure that risks associated with seismic activity are minimized.

As discussed in Chapter 2, there are two geologic conditions that could present constraints to development—a fault trace on the ridge that divides the West Parcel and an ancient landslide. Development is restricted on steep slopes, as shown in Figure 1-4. In addition, MVWPSP Policy ER-AG4 requires that if any buildings are proposed within 100 feet of the fault trace, the fault must be evaluated for precise location and potential activity. If it is found to be potentially active, then structures must be set back and engineered to withstand a potential seismic event on that fault. Similarly, any structures located near the ancient landslide must be engineered to protect buildings from potential slope instability.

4.7 Flood Protection Measures

As shown in Figure 2-6, a small portion of the West Parcel is within the 100-year floodplain for Martis Creek. No development would be allowed within the floodplain, except for improvements related to the primary access. Therefore, no other flood-related measures are required of the MVWPSP.

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