IV. ENVIRONMENTAL IMPACT ANALYSIS
F. HAZARDS AND HAZARDOUS MATERIALS

INTRODUCTION

This section of the Draft Supplemental Environmental Impact Report (Draft SEIR) considers potential risks associated with hazards and hazardous materials resulting from the proposed development of the Upper Road Land Division Project ("proposed project"), potential existence of hazardous materials sites in the vicinity of the project site, and potential risks to residents and visitors to this area from on-site and off-site sources of hazards and hazardous materials.

ENVIRONMENTAL SETTING

Hazardous materials can threaten human health and/or the environment through routine emissions and/or accidental releases. Hazardous materials include materials that are toxic, corrosive, flammable, reactive, irritating, and strongly sensitizing. According to the State of California, a hazardous material is defined as a substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either: 1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating irreversible illness; or 2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of or otherwise managed. Hazardous waste (a subset of hazardous material) refers to a hazardous material that is to be abandoned, discarded or recycled.

The following section summarizes identified hazards and potentially hazardous materials existing or considered likely to occur on the project site and which could therefore impact the proposed development. This includes a description of the history of hazardous materials at the site; and consideration of the threat to future occupants, workers, and the surrounding environment that would result as the development has been proposed. This includes consideration of risk from exposure to hazards or hazardous materials during earthwork and grading, construction, and during the course of normal operations at the proposed project.

Surrounding Land Uses

As discussed in Section III (Project Description) of this DSEIR, four residential parcels abut the site. The smallest is 1.0 acre; the others are 2.1, 2.8, and 4.0 acres respectively. Of these, the site shares 769 feet of common boundary with the 7 Upper Road parcel (Weisel), 383 feet with 31 Upper Road (Ryan), 233 feet with 27 Upper Road (Greenberg), and 191 feet of common boundary with 25 Upper Road (Wais). The entire 35.97-acre parcel has only one point of access to the public road system, and the total length of the Upper Road frontage is 130 feet.

Along most of its eastern boundary, the site abuts Natalie Coffin Greene Park, a 1,118 foot long common boundary. The park is a Town of Ross facility. The southwestern and northwestern

sides of the park border Marin Municipal Water District (MMWD) lands (2,243 of common boundary) and an open space parcel owned by the Town (995 feet of common boundary). There is no vehicular access to the site from the park, MMWD, or Town lands.

Project Site

The project site is located in the western area of the Town of Ross and is comprised of an approximately 36-acre parcel of sloped, hillside land on the southeastern section of Bald Hill, which is located on the northern slope of Mount Tamalpais in the Town of Ross (APN: 073-011-26). The project site, as described in the Town of Ross General Plan, is designated Very Low Density (VL). The site is zoned R-1:B-10A, Single Family Residential, 10-acre minimum lot size.

The site is heavily wooded with native oak, redwood, and other trees and non-native Scotch and French Broom shrubs. The site also contains a large rock outcropping and two creeks. Two non-habitable dilapidated small cabins, a greenhouse, deck, and wooden water tanks exist on the site. Access to the site is from Upper Road in the Town of Ross. Upper Road is a local street, providing access to Glenwood Avenue and Lagunitas Road for traffic to and from the east and south and to Bolinas Avenue for traffic to and from the north and west. Local roads, including Upper Road, are narrow, windy and steep. Refer to Figure III-2 for an aerial photograph of the project site and Figure III-3 for an existing conditions exhibit of the site. Existing views of the site are shown in Figures III-4 and III-5. A more detailed description of the topographic setting is provided in Section IV.E (Geology and Soils) of this DSEIR.

Sensitive Receptors

Sensitive receptors are individuals that may have a significantly increased sensitivity or exposure to contaminants by virtue of their age, health, or proximity to the contamination (e.g. childcare centers, schools, hospitals, nursing or retirement homes, residences, playgrounds, athletic fields, parks, etc.). The location of sensitive receptors must be identified in order to evaluate the potential impact of the contamination on public health and the environment. Appendix G to the State *CEQA Guidelines* considers a significant impact to occur if a project would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

For the purpose of this analysis, the nearest off-site sensitive receptors to the project site that could be affected by hazardous materials exposure would include single-family residential uses that abut the property. Natalie Coffin Greene Park is located southwest/northwest of the project site as well.

Wildland Fire Hazards

Fire Hazard Severity

The California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas in Marin County with significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Very High Fire Hazard Severity Zones, are classified by the CAL FIRE Director in accordance with Government Code Sections 51175-51189 to assist responsible local agencies identify measures to reduce the potential for losses of life, property, and resources from wildland fire. According to CAL FIRE, the project site is not located within a Very High Fire Hazard Severity Zone (VHFHSZ) but the site is located directly adjacent to a VHFHSZ and there is great concern over wildfire in the project area. [1]

Defensible Space

Despite the efforts of the fire services, many homes are lost each year due to wildland and wildland urban interface fires. The Ross Valley Fire Department (RVFD) instructs all residents to protect homes from wild fires through defensible space. Defensible space does not mean removing all vegetation from around the home. Defensible space means modifying and maintaining vegetation to reduce the intensity and speed of a wildfire when it reaches a home.[2] Fire risk in Ross is high due to vegetation, steep topography and climactic conditions. Due to the high fire hazard in the steeper areas of Town, special planting and maintenance programs are required to reduce fire hazards in the hills and wildland areas, including removal of invasive non-native vegetation such as broom, acacia and eucalyptus (Town of Ross 2007b).

The Wildland Fire code enforcement component is aimed at the enforcement of California Public Resource Code 4291 that insures citizens provide defensible space around dwelling structures. As the 1995 Mt. Vision Fire proved, the two best predictors of structure survival are clearance around structures (i.e., defensible space), and the composition of the roof material. Defensible space has been proven to be an immediate benefit.[3] Furthermore, the Town of Ross' General Plan requires that buildings be designed to be fire defensive. Designs should minimize risk of fire by a combination of factors including, but not limited to, the use of fire-resistant building materials, fire sprinklers, noncombustible roofing and defensible landscaping space (Town of Ross 2007b).

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1 *CAL FIRE, 2007. Marin County Very High Fire Hazard Severity Zones in SRA.*

2 *Ross Valley Fire Department's Defensible Space webpage located at http://rossvalleyfire.org/prevention/defensible-space and accessed on November 29, 2012.*

3 *County of Marin, Fire Department – Fire Prevention webpage located at http://www.co.marin.ca.us/depts/FR/main/fire/actionplan.cfm#_Toc481902205 and accessed on November 29, 2012.*

The RVFD suggests that homeowners (1) create a "clean" zone with few or no combustibles within 30 feet of a home and (2) create a fuel-reduction zone from 30 – 100 feet (or to the property line, if closer) to slow the spread of an approaching wildfire. The RVFD adds the following suggestions that would apply to the proposed project[4]:

- Cut dry grass regularly within 100 feet of a home. Gas powered tools can start fires when fire danger is high, so work early in the morning on a cool, moist day, if possible. Rake and remove clippings.
- Use irrigated fire-resistant plants where possible. Rock, stone, and other materials can be used to create an attractive, fire-safe landscape.
- Keep trees limbed up 10' from the ground or from the tops of plants below (or 1/3 the height of trees shorter than 30'), and cut back at least 10' from a chimney and roof. Remove all dead limbs.
- Clean all needles and leaves from the roof and rain gutters regularly during fire season.
- Maintain landscaping by mowing, watering, weeding and removing dead needles and leaves.
- Maintain fire engine access to a home by clearing vegetation ten feet from the sides of roads and driveways and 14' feet vertically.
- Make your address visible from the street in both directions, with 4-inch (minimum) reflective numbers on a contrasting background

In addition to the Department's guidelines for defensible space, the Kentfield Fire Protection District has adopted the 2003 edition of the California Urban-Wildland Interface Code and requires a Vegetation Management Plan per Fire District Standards for projects located within its jurisdiction. The proposed project is located outside of the District's jurisdiction but the District has a mutual aid agreement with the Ross Valley Fire Department. In the event of a fire, the District currently has 14 suppression volunteer firefighters and six support volunteer firefighters while employing one full time administrative assistant.[5]

Climate

The Town of Ross is located in eastern Marin County, part of the 9-county San Francisco Bay Air Basin. Marin County is bounded on the west by the Pacific Ocean, on the east by San Pablo Bay, on the south by the Golden Gate and on the north by the Petaluma Gap. Ross is partially sheltered from prevailing northwesterly winds from off the Pacific Ocean by elevated terrain.

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[4] *Ross Valley Fire Department's Defensible Space webpage located at http://rossvalleyfire.org/prevention/defensible-space and accessed on November 29, 2012. The RVFD website includes additional suggestions for creating defensible spaces.*

[5] *Letter from Paul D. Smith, Kentfield Fire Protection District, Fire Chief (refer to Appendix C of this Draft SEIR). December 5, 2012.*

The prevailing wind directions are northwesterly and southeasterly reflecting the influence of marine air flows through the Golden Gate to the south and the Petaluma Gap to the northwest.

The eastern side of Marin County has warmer weather than the western side because of its distance from the ocean and because the hills that separate eastern Marin from western Marin occasionally block the flow of marine air. Temperatures in Ross are moderated by the cooling effect of the bay in summer and the warming effect of the by winter.

Weather Conditions

Due to the semi-arid climate, the natural grassland, brush and woodland vegetation in Ross is extremely flammable during the late summer and fall (Town of Ross 2007a). Fire behavior is dramatically influenced by weather conditions. Large costly fires are frequently associated with severe fire weather conditions. High temperatures, low humidity, and strong surface winds typify fire weather. Weather is a very dynamic event in California. There are several weather influences that are in constant conflict. Factors such as a marine influence, solar radiation on numerous slopes, and inversion layers, alter the weather in different ways. In Marin County, strong north or northeast winds drive severe fire weather. Under these circumstances, the entire county is at risk. These winds may happen several times a fire season, or not at all.[6]

Vegetation

Scrub and grassland vegetation occurs along the spur ridge at the western edge of the site, continuing as an open oak savanna on the MMWD lands further west. Scrub vegetation occurs on the steep east facing slopes, composed of bush monkeyflower *(Mimulus aurantiacus),* coyote brush *(Baccharis pilularis),* toyon *(Heteromeles arbutifolia),* and poison oak (*Toxicodendron diversilobum*). Native and introduced grasses and forbs occur in the grassland and savanna, and extend into the understory of the woodland on the site, dominated by wild oat *(Avena* sp.), brome *(Bromus* sp.), quaking grass *(Briza minor),* California fescue *(Festuca californica),* Idaho fescue *(Festuca idahoensis),* purple needlegrass *(Stipa pulchra),* dogtail *(Cynosurus echinatus),* brodiaea *(Brodieaea* sp.), iris *(Iris* sp.), filaree *(Erodium* sp.), vetch *(Vicia* sp.) soap plant *(Chlorogalum* sp.), and California poppy *(Eschscholzia californica).*

Appropriate fuel management strategies and tactical actions (including vegetation management, resource management, assistance to landowners, prevention, and more) are being developed and implemented by fire departments throughout Marin County. The potential of a home being destroyed is related to its surrounding fuels. Marin County uses advanced fuel models to mathematically express how fast and how hot a fire will burn. The County's model has determined the most hazardous fuel location is the Marin Municipal Water District watershed,

[6] *County of Marin, Fire Department – Fire Weather webpage located at http://www.co.marin.ca.us/depts/FR/main/fire/weather.cfm and accessed on November 29, 2012.*

which interfaces with the communities of Mill Valley, Larkspur, San Anselmo, Ross, Fairfax, and Woodacre.[7]

Also, dead coast live oaks and tanbark oaks contribute to the fire problem. The oaks are changing from a fire resistive species into a vegetation type that will readily burn. Openings in the closed canopy forest change the fire dynamics. Areas that were once sheltered will now support grass, fir trees, French broom and the Scotch broom species. Without sheltering, fuels will be heated by solar radiation and react to changes in wind speed. This transition is evident on-site as Sudden Oak Death has infected trees within the Project Area.

Slope and Topography

Topography influences wildfire to such an extent that slope conditions often become the critical fire factor in landscapes. Conditions such as the length of slopes, slope steepness, and directional exposure (slope aspect), and/or the overall ruggedness of terrain each influence the potential intensity of and/or rates at which wildfire may spread. Terrain surface configuration also affects wind speed and direction. Most importantly, slope steepness influences the speed of fire spread. Up-slope fires move significantly faster than down-slope fires because of an up-slope "wind effect" which accelerates the spread of fire.

Slope steepness and the ruggedness of terrain also affect fire-fighting accessibility and response times. As slope gradients increase, the ability to utilize fire trucks and bulldozers to directly attack fires decreases. Hand crews are likewise less likely to establish fire- containment lines in areas of excessively steep slopes due to lack of easy accessibility and safety concerns. Development of spot fires ahead of fire-lines and the hazards of rolling and blowing firebrands become progressively more serious as slope increases. Slopes over 40 percent may contribute significantly to the fire hazard when they impede the ability of the responding fire-fighting agencies to effectively contain fires on them.

Also solar energy heats ground surfaces it "builds" or "accumulates" throughout the course of the day so that energy build-up peaks during the afternoons rather than at noon when the sun is at its zenith in the mid-day sky. One consequence of this process is that easterly-facing slope aspects that are struck by the morning sun will be warmed from their cooler nighttime surface conditions during the morning hours. Westerly-facing slopes, on the other hand, are warmed throughout the morning hours indirectly and are typically "warmed up" when the incoming angles of sunlight shift to hit them directly throughout the afternoon hours when daily temperatures reach their peak. Correspondingly, there is likely also to be an observable difference in vegetation species composition and stature on slopes with easterly and westerly

[7] *County of Marin, Fire Department – Fire Prevention webpage located at http://www.co.marin.ca.us/depts/FR/main/fire/actionplan.cfm#_Toc481902205 and accessed on November 29, 2012.*

aspects, as well as between northerly and southerly aspects. Slope aspect, therefore, may influence both the accumulation of biomass, and levels of moisture stress exhibited by vegetation during periods with critical "fire weather" conditions.

Fire Behavior

In extreme fire weather, wildfires readily spread through vegetation of almost any age. Embers blow far ahead of the main flaming front and have a very high probability of starting spotfires anywhere they land on receptive fuels that can easily catches fire. Because of embers and spotfires, weather-driven wildfires can jump across almost any natural or manmade barrier. Spotfires starting more than a mile beyond the main flaming front have been observed on many large wildfires. Modern wildfires commonly spot across freeways, rivers, lakes, and neighborhoods. Firefighters sometimes describe urban intermix wildfire behavior as "hopscotching," by which they mean fire skips and jumps through neighborhoods, burning surface fuels wherever embers find receptive fuelbeds.[8]

Typically, winds during extreme fire weather are from the northwest or northeast; wildfires in this area generally travel in a southerly direction. When a wildfire passes from a wildland area into the urban fringe, the likelihood of loss of life and major property losses increase dramatically. The 1991 Oakland Hills fire was ignited in the wildland-urban interface area and spread into denser urban neighborhoods resulting in the loss of 25 lives and thousands of homes (Town of Ross 2006c).

Fire History

The date when the project site was last burned in a wildfire is not known. However, the large 1923 Bolinas Ridge fire burned 30 - 50 square miles, extending from Bolinas Ridge as far south as Phoenix Lake, and may have affected portions of the project site. Also, the September 1945 Carson Canyon (Kent Lake) fire burned 40,000 acres but did not bum as far east as San Anselmo, Ross or Kentfield (Town of Ross 2006c).

Fire Prevention

Fire engineering, code enforcement, and public education are the main components of fire prevention. In general, these programs have been shown to be highly effective at reducing the incidence of fire. Fire engineering is a means to control wildfire by building in control measures. Before a wildfire is controlled, it must be contained. Fuel breaks and fire roads are pre-suppression measures that greatly assist with containing a fire. Fuel breaks are strategically placed strips of low volume fuels designed to provide attack points, safe access, and reduced fire behavior. Flanking and backing fires are often controlled using fuel breaks as lines for

[8] *National Park Service – Historic Fire Behavior. Website: http://www.nps.gov/samo/parkmgmt/historicfirebehavior.htm. Accessed November 29, 2012.*

indirect attack. Fire roads allow access into areas for rapid initial attack. The faster a fire engine can gain access to a fire, the greater the chance for successful suppression action.[9]

Emergency Evacuation

As required by law, Ross has established emergency preparedness procedures to respond to a variety of natural and man-made disasters that could occur within the area. The Town is included in the Marin Operational Area. Emergency response procedures are outlined in the Marin County Emergency Operations Plan (EOP), adopted in May 1999. The EOP establishes the Standardized Emergency Management System (SEMS) as required by state law, and includes information on mutual aid agreements, hierarchies of command and different levels of response in emergency situations.

The Town also has an emergency plan based on SEMS, which provides an effective flow of information and tracking of resources. The Town has designated Town Hall for centralized management of coordinated emergency response by the Town's staff. The emergency response may be activated upon the direction of the Town Manager or, in his absence, his designee. The magnitude of the emergency or unusual occurrence will dictate the Town's response. Town employees participate in drills to prepare and train for responding to an emergency.

In the event of an emergency, Ross employees, including Fire, Police and Public Works staff, will assess the situation and the damage and respond according to the emergency plan, coordinating with other agencies as necessary. The Town has identified St. John's Parish, St. Anselm's Church, Branson School, Ross School, and the Marin Art & Garden Center as emergency housing shelters to be used in case of disaster. Possible emergency evacuation routes have also been identified (Town of Ross 2007a).

[9] *County of Marin, Fire Department – Fire Prevention webpage located at http://www.co.marin.ca.us/depts/FR/main/fire/actionplan.cfm#_Toc481902205 and accessed on November 29, 2012.*

REGULATORY SETTING

A variety of laws and regulations at the federal, state, and local levels affect the management and control of hazardous substances. These regulations are intended to protect both the environment and public health from improper use, handling, storage, transport, and disposal of hazardous materials. The following section describes the regulatory framework for hazardous materials, worker health and safety requirements and potentially hazardous materials associated with the proposed construction.

Federal and State Requirements

Hazardous Materials

In California, the U.S. Environmental Protection Agency (EPA) has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (Cal EPA). In California, regional agencies are responsible for programs regulating emissions to the air, surface water, and groundwater. At the project site, the Bay Area Air Quality Management District (Air District) has oversight over air emissions, and the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB) has jurisdiction over the City, and regulates discharges and releases to surface and groundwater. Oversight for investigation and remediation of sites affected by hazardous materials releases can be performed by state agencies, such as the California EPA Department of Toxic Substances Control (DTSC) or the State Water Resource Control Board, and in the case of landfills, the Integrated Waste Management Board. The Resource Conservation and Recovery Act (RCRA) is the United States' primary law governing the handling and disposal of solid hazardous waste. The RCRA, which passed into law in 1976, set out to accomplish the following main goals: ensure that wastes are managed in an environmentally sound manner, protect human health and the environment from the potential hazards of waste disposal, reduce the amount of waste generated, and conserve energy and natural resources.

Hazardous Materials Transportation

Transportation of hazardous materials on highways is regulated through the Federal Department of Transportation (DOT) and the California Department of Transportation (Caltrans). This includes a system of placards, labels, and shipping papers required to identify the hazards of shipping each class of hazardous materials. Existing federal and state laws address risks associated with the transport of hazardous materials. These laws include regulations outlined in the Hazardous Materials Transportation Act administered by DOT. Caltrans is mandated to implement the regulations established by DOT, which is published as the Federal Code of Regulations, Title 49, commonly referred to as 49 CFR. The California Highway Patrol (CHP) enforces these regulations. Regulations of hazardous materials and wastes include the manufacture of packaging and transport containers; packing and repacking; labeling, marking or

placarding; handling; spill reporting; routing of transports; training of transport personnel; and registration of highly hazardous material transport. General Information is found in Section 177.800 of 49 CFR, Transportation, Part 177—Carriage by Public Highway Subpart A. The purpose and scope of this part prescribes requirements that are applicable to the acceptance and transportation of hazardous materials by private, common, or contract carriers by motor vehicle. Each carrier is required to perform the duties specified and comply with all applicable requirements in this part to ensure its hazmat employees receive training in relation thereto. A carrier may not transport a hazardous material by motor vehicle unless each of its hazmat employees involved in that transportation is trained as required by this part.

Hazardous Materials Storage, Handling, and Disposal

The California Health and Safety Code (HSC 25500 et seq.) requires that all California facilities that store hazardous materials in quantities that, cumulatively for a site, exceed 55 gallons of a liquid or 500 pounds of a solid or 200 cubic feet of a gas at standard temperature and pressure or, for radioactive materials, the quantity for which an emergency response plan is required under federal or state regulations, are subject to hazardous material inventory and reporting regulations. The regulations require preparation of a Hazardous Material Management Plan (HMMP), also known as a California Business Plan under the statute. The HMMP sets forth prescribed practices for storage, use, and containment of hazardous materials to be used at the facility. All facilities that exceed the HMMP thresholds shall submit the HMMP and chemical inventory at the next reporting period (January 1 of each year) per the requirements of HSC 25504 and 25505.

Generally, hazardous waste would be required to be handled in accordance with the California Health and Safety Code and California Code of Regulations. These regulations (22 CCR 66260 et seq.) include specific requirements for hazardous waste determination, obtaining an identification number, accumulation, labeling, emergency procedures/contingency plans, training, shipment, and reporting. The specific requirements under these regulations would vary depending on the amount of waste generated.

Worker Health and Safety Regulations

Worker health and safety in California is regulated by the California Department of Industrial Relations, Division of Occupational Safety and Health (California OSHA). California OSHA conducts on-site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices.

Injury and Illness Prevention Plan

The California General Industry Safety Order requires that all employers in California shall prepare and implement an Injury and Illness Prevention Plan, which should contain a code of

safe practice for each job category, methods for informing workers of hazards, and procedures for correcting identified hazards.

Emergency Action Plan

The California General Industry Safety Order requires that all employers in California prepare and implement an Emergency Action Plan. The Emergency Action Plan designates employee responsibilities, evacuation procedures and routes, alarm systems, and training procedures.

Fire Prevention Plan

The California General Industry Safety Order requires that all employers in California prepare and implement a Fire Prevention Plan. The Fire Prevention Plan specifies areas of potential hazard, persons responsible for maintenance of fire prevention equipment or systems, fire prevention housekeeping procedures, and fire hazard training procedures.

Stormwater Management

The State Water Resources Control Board (State Water Board), Water Quality Order No. 97-03-DWQ, which is the National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 (General Permit), titled *Waste Discharge Requirements (WDRs) for Discharges of Storm Water Associated with Industrial Activities* requires that stormwater associated with industrial activity that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit. Municipalities covered under this permit must implement the stormwater requirements as per the General Permit.

These stormwater requirements only apply where stormwater has the potential to carry pollutants off-site and deliver them to state waters. Facilities that do not discharge stormwater to waters of the United States are exempt from the stormwater requirements cited above. This includes facilities where stormwater is captured and treated and/or disposed of with the facility's NPDES permitted process wastewater, and where stormwater is disposed of to evaporation ponds, percolation ponds, or combined sewer systems. These facilities are not required to obtain a stormwater permit.

Additional NPDES stormwater requirements are associated with construction activities that involve land disturbance of more than one acre. These requirements include the preparation of a construction-specific Storm Water Pollution Prevention Plan (SWPPP) for the period of project construction as well as filing a Notice of Intent with the RWQCB. The SWPPP must include a detailed description of best management practices to be installed within the proposed project to ensure that pollutants do not discharge to waters of the United States. The General Permit also requires implementation of a monitoring program, which includes visual observation of stormwater flows and collection of samples and analysis of stormwater for likely contaminants.

The Town of Ross participates in the Marin County Stormwater Pollution Prevention Program (MCSTOPPP), a joint effort of Marin's cities, towns and unincorporated areas to prevent stormwater pollution, protect and enhance water quality, and comply with State and federal regulations pertaining to water quality. MCSTOPP activities include the stenciling of catch basins and the distribution of stormwater prevention information relating to hazardous waste disposal, pesticide use, exterior surface cleaning, and the illegal discharge of pollutants into waterways (Town of Ross 2007a). Stormwater prevention requirements are described in greater detail in Section IV.G (Hydrology and Water Quality) of this Draft SEIR.

Fire Protection Regulations

The 2010 California Building Code (CBC) applies to all occupancies throughout the State of California; however, city, county, or city and county may establish more restrictive building standards reasonably necessary because of local climatic, geological, or topographic conditions. Furthermore, local fire jurisdictions may identify additional fire hazard areas, especially in communities adjacent to wildlands. Development of new buildings located within an area designated by the enforcing agency to be at significant risk from wildfires, for which an application for a building permit and/or plan approval for construction is submitted, shall meet the intent of CBC Chapter 7A, Materials and Construction Methods for Exterior Wildfire Exposure. The proposed project is located adjacent to a Very High Fire Hazard Severity Zone.

Regulations require that building products and construction methods comply with applicable codes and ordinances of the local authority having jurisdiction, compliance must be submitted to the building official having jurisdiction for final approval.

Regional and Local Requirements

Local responsibility for hazardous materials oversight, permitting, and regulation is through the Certified Unified Program Agencies (CUPA). These programs were developed when the State of California delegated responsibility to local jurisdictions. Each CUPA is responsible for writing and updating a Hazardous Materials Area Plan (for the public safety response in the jurisdiction) and providing guidelines for the Hazardous Materials Business Plan (for local businesses designated as handlers of hazardous materials.) CUPA programs include the Hazardous Materials Business Plan Program, Hazardous Waste Program, Underground Tank Program, Accidental Release Program, and the portions of the Uniform Fire Code that address hazardous materials. This program includes inspections of businesses and review of permit conditions and procedures for the handling, storage, use and disposal of hazardous materials. The Hazardous Materials Business Plan is used to keep track of the use of hazardous materials by businesses in accordance with both state and federal laws. The Hazardous Waste Generator Program is based on the Hazardous Waste Control Law found in the California Health and Safety Code Division 20, Chapter 6.5 and regulations found in the California Code of Regulations, Title 22, Division 4.5.

Town of Ross General Plan

Goal 5: Protecting Community Health and Safety, and Preparing for Emergencies

Policy 5.1 Location of Future Development. Development will only be permitted in areas where risks to residents can be adequately mitigated.

Policy 5.2 Geologic Review Procedures. At the time a development is proposed, Ross geologic and slope stability maps should be reviewed to assess potential geologic hazards. In addition, suitability for development must be based onsite-specific geotechnical investigations.

Policy 5.3 Fire Resistant Design. Buildings should be designed to be fire defensive. Designs should minimize risk of fire by a combination of factors including, but not limited to, the use of fire-resistant building materials, fire sprinklers, noncombustible roofing and defensible landscaping space.

Policy 5.4 Maintenance and Landscaping for Fire Safety. Ensure that appropriate fire safety and landscaping practices are used to minimize fire danger, especially in steeper areas. Due to the high fire hazard in the steeper areas of Town, special planting and maintenance programs will be required to reduce fire hazards in the hills and wildland areas, including removal of invasive non-native vegetation such as broom, acacia and eucalyptus.

Policy 5.5 Fire Safety in New Development. New construction will adhere to all safety standards contained in the Building and Fire Code. Hazards to life and property shall be minimized by such measures as fire preventive site design, fire resistant landscaping and building materials, and the use of fire suppression techniques and resources.

Policy 5.11 Hazardous Materials Storage and Disposal. Require the proper use, storage, and disposal of hazardous materials to prevent leakage, contamination, potential explosions, fires or the escape of harmful gases, and to prevent individually innocuous materials from combining to form hazardous substances, especially at the time of disposal.

Policy 5.12 Access for Emergency Vehicles. New construction shall be denied unless designed to provide adequate access for emergency vehicles, particularly firefighting equipment.

Town of Ross Municipal Code

Fire Prevention

The 2010 California Building Code (CBC) applies to all occupancies throughout the State of California; however, city, county, or city and county may establish more restrictive building standards reasonably necessary because of local climatic, geological, or topographic conditions. Furthermore, local fire jurisdictions may identify additional fire hazard areas, especially in communities adjacent to wildlands. Development of new buildings located within an area designated by the enforcing agency to be at significant risk from wildfires, for which an application for a building permit and/or plan approval for construction is submitted, shall meet the intent of CBC Chapter 7A, Materials and Construction Methods for Exterior Wildfire Exposure. The proposed project is not located within or adjacent to a Very High Fire Hazard Severity Zone.

Regulations require that building products and construction methods comply with applicable codes and ordinances of the local authority having jurisdiction, compliance must be submitted to the building official having jurisdiction for final approval. In addition to the CBC, the proposed project is subject to all codes listed under Chapter 14.04 (Uniform Fire Code), Chapter 15.18 (California Fire Code), and Chapter 9.24 (Interference with Fire Department) of the Town's Municipal Code.

ENVIRONMENTAL IMPACTS

Thresholds of Significance

In accordance with Appendix G to the State *CEQA Guidelines* and the Regulatory Setting requirements, the proposed project could have a significant environmental impact if it would:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area.

f) For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Hazards and Hazardous Material Issues not Further Analyzed

The following issues were addressed in the Initial Study (see Appendix A) and Section IV.A of the Draft SEIR, and were determined to result in no impact or a less-than-significant impact and not warrant further analysis:

- Transport, Use, or Disposal of Hazardous Materials
- Release of Hazardous Materials to the Environment
- Hazardous Emissions or Hazardous Materials within ¼ mile of a School
- Located on Site Included on a List of Hazardous Materials Sites
- Located Within 2 Miles of an Airport
- Within the Vicinity of a Private Airstrip

Project Impacts and Mitigation Measures

Impact HAZ-1: Emergency Response Plan

An impact would be considered significant if it impaired the implementation of or physically interfered with an adopted emergency response plan or emergency evacuation plan. The Town of Ross' General Plan states that the health and safety of the community are critical concerns. The Town has worked to prepare and practice emergency response and to minimize risks of fire danger by emphasizing responsible landscaping practices (especially in the steeper, less accessible areas of the Town). The project would be located in an area as having steeper slopes and therefore is subject to additional design criteria listed in the Hillside Lot Ordinance and Special Hazard District requirements. These regulations are further described in Section IV.E, Geology and Soils, of this Draft SEIR. In addition to the requirements of the Hillside Lot Ordinance and Special Hazard District, the proposed project would also be subject to the General Plan policies described above in the Regulatory Setting section.

Potentially, a fire starting near the project site, especially downslope in Natalie Coffin Green Park, or near Phoenix Lake, could spread so rapidly that there would not be time for residents of the project site to safely evacuate. A more likely scenario is that a wildfire would move toward

Ross from a more distant ignition point and that the advancing smoke, public safety official warnings and media coverage would alert residents and afford sufficient time for evacuation. Extreme fire hazard days ("red flag warnings"1) are predictable and widely publicized. On these days, recreational access to open space areas and parks is typically restricted and residents of high fire hazard areas are alerted to the heightened risks through a variety of informational sources (Town of Ross 2006c).

The project has been designed to accommodate emergency vehicle access per Policy 5.12 of the General Plan. General Plan Policy 5.13 requires that the Town (or projects approved by the Town) undertake emergency preparedness planning in cooperation with other public agencies and local organizations. Furthermore, Action 5.A directs the Town to coordinate with the Marin Municipal Water District to evaluate water pressure and water lines to ensure adequate fire protection. In addition to meeting the Town's General Plan requirements, the proposed project is also subject to the requirements of the Ross Valley Fire Department. These requirements include but are not limited to: fire hydrant placement, defensible space pursuant to PRC 4291, driveway length, and overall site development restrictions such as limiting the number of structures per site.[10]

Implementation of the proposed project would result in the eventual construction of three new single family homes on an undeveloped site that is located adjacent to a Very High Fire Hazard Severity Zone. While the future population of the project would only consist of approximately 9 to 15 residents, only one ingress and egress location for the project is proposed at Upper Road. Also, the proposed driveway has an average slope of 15 percent, a consistent width of 20 feet, and curve radii that comply with applicable County road standards (the Town of Ross has no such standards). One fire truck turnaround (also referred to as a "hammerhead turnaround") area is proposed at end of the common road. Additional fire truck turnarounds would be required if the individual driveways were not longer than 150 feet.[11] However, all three private driveways are less than 150 long.

The future development of the project site was included in the General Plan 2007-2025 analysis. The General Plan Initial Study states that the anticipated maximum increase in development planned during the twenty-year lifetime of the General Plan is consistent with regional growth projections used for determining the Emergency Response Plan and is not expected to be significant enough to result in evacuation problems during an emergency since growth will be limited and dispersed throughout the community (Town of Ross 2007a). Provided all applicable codes and policies are followed and required project specific mitigation measures described below are carried out, the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, impacts related to emergency response plans would be ***less than significant***.

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[10] *Phone correspondence with Rob Bastianon, Ross Valley Fire Department Fire Inspector on December 18, 2012.*

[11] *ibid*

Impact HAZ-2: Wildland Fires

As stated previously, according to CAL FIRE, the project site is not located within a Very High Fire Hazard Severity Zone (VHFHSZ) but the site is located directly adjacent to a VHFHSZ and there is concern over wildfire in the project area. Sudden Oak Death (SOD) is also contributing to significant changes in vegetative cover at the project site, exacerbating hazardous fire conditions; however, the project proposes to remove SOD trees and replace them with healthy natives species that are either more resistant to SOD or are not subject to the disease.

The proposed project is subject to the goals and policies of the General Plan. Several General Plan policies, as listed above, would reduce wildland fire risk. Specifically, Policy 5.1 restricts new development to areas where risks can be adequately mitigated. Policy 5.3 states that buildings should be designed to be fire defensive by using fire-resistant building materials, fire sprinklers, noncombustible roofing and defensible landscaping space. Policy 5.4 ensures that appropriate fire safety and landscaping practices, including special planting and maintenance programs, are used to minimize fire danger, especially in the steeper areas of the town. Policy 5.5 requires new construction to adhere to all safety standards contained in the Building and Fire Code, including fire preventive site design, fire resistant landscaping and building materials, and the use of fire suppression techniques. Finally, Policy 5.12 requires new construction to provide adequate access for emergency vehicles, particularly firefighting equipment.

The proposed project would lead to the construction of three high-value estate homes in a high fire hazard area, where none presently exist. These structures would be at risk of loss in the event of a wildfire, increase the number of residents in the high fire hazard zone area, and hence the risks of human harm, all ***potentially significant*** impacts.

Catastrophic fires are rare - the site has not burned in over 50 years - and the chances that the residents of any of these particular homes would be injured or lose their lives in a wildfire is considered to be low. The risks to residents are moderated, but not eliminated, by the existing early warning systems and the availability of evacuation routes.

The proposed project also includes features that would enhance the ability to suppress wildfires or structure fires on and in the vicinity of the site. These features, which include water storage and improved access, new fire hydrants and a reduction of the existing fuel load as described below:

Water Storage and Improved Access. Provision of additional water storage in two detention ponds and extension of a main and secondary driveways to serve the residences and provide fire safety access at the urban wildland interface.

Fire Hydrants. Upgrade the existing 4-inch water main along the frontage of the project site to a 6-inch diameter pipe, install a new main within the project, and install fire hydrants along both mains to improve the ability of local agencies to combat a major fire which might otherwise spread and threaten homes in the Town of Ross.

Fuel Load. Reduction of fire fuel loads, with corresponding mitigation, at a level intended to reduce significant biological and forestry impacts. Specifically, implementation of the proposed project would result in hazardous broom and dead vegetation being removed from the project site.

These facilities, considered together, would provide a good level of firefighting capability on the site and would support fire fighter's ability to control structure fires at the respective homes and increase the chances of saving the homes (and other nearby homes on Upper Road) from destruction in a wildland fire.

The Kentfield Fire Protection District (District) has stated that the proposed project would result in minimal impacts and affirmed that the District has a mutual aid/automatic aid resource with/for the RVFD.[12] The RVFD stated that after implementation of mitigation and conformance with required design criterion, the proposed project would have less than significant impacts related to wildfire.[13]

As discussed above, the number of wildfires that have occurred in the Ross Valley is minimal but the threat has risen with increased development and human activities. Therefore, it can be expected that the effect of additional development in this area could further increase the occurrence of wildfires. This effect is ***potentially significant*** but would be mitigated to less-than-significant levels by project-specific mitigation measures including but not limited to implementation of fire prevention measures such as brush clearance.

Mitigation Measure HAZ-2: Wildland Fires

MM HAZ-2a The proposed project components shall comply with all applicable Uniform Fire Code (UFC), California Fire Code (CFC), the California Urban-Wildland Interface Code (2003 ed.), and all Town and RVFD ordinance requirements for residential development located in high fire danger areas regarding the following: building construction methods and materials; the ease of site access; the adequacy of water mains, namely of fire-flow pressures and volumes; and the re-vegetation of all manufactured slopes with fire retardant (native) landscaping; and strict and timely adherence to RVFD-mandated fire-safety brush clearance regulations. Fire retardant plant species are detailed in the *Pyrophytic vs. Fire Resistant Plants* guide prepared by the University of California Cooperative Extension and FIRE Safe Marin (UCCE 1998).

MM HAZ-2b The project sponsor shall develop and implement a Fuel Reduction Plan designed to reduce the downed tree limbs, flammable duff, low shrubs, low tree

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[12] *Letter from Paul D. Smith, Kentfield Fire Protection District, Fire Chief (refer to Appendix C of this Draft SEIR). December 5, 2012.*

[13] *Phone correspondence with Rob Bastianon, Ross Valley Fire Department Fire Inspector on December 18, 2012.*

limbs and other built-up fuels pursuant to PRC 4291 and within a 200-foot wide zone along the access road/common driveway. The Plan shall be approved by a qualified arborist or fire safety consultant.

MM HAZ-2c The project sponsor shall review and revise the tree replacement component (Preliminary Landscape Plan) of the proposed Vesting Tentative Map, as necessary to ensure that new tree plantings will not compromise the effectiveness of the fuel reduction zone (Measure HAZ-2b, above) as they grow and mature. Proposed trees that would be within the defensible space around individual homes, and tree clusters necessary for visual screening that would be within 30 feet of the common driveway should be relocated, to the extent practicable.

MM HAZ-2d The Town shall require the landowner to conduct follow-up broom removal as required by the RVFD.

MM HAZ -2e Easily visible street signs and house numbers shall be posted at Upper Road and at each driveway.

MM HAZ-2f Fire extinguishers shall be maintained at the project site during construction.

MM HAZ-2g Flammable construction debris and trash shall be removed as it accumulates, but not less than weekly. No trash shall be burned on-site.

MM HAZ-2h No outdoor construction work shall be undertaken on "Red Flag Days."

CUMULATIVE IMPACTS

The related projects listed in Section III, Project Description, Table III-1, primarily consist of bridge and existing school facility improvements and the implementation of a vegetation management plan and two new water tanks on MMWD lands. With the exception of the MMWD projects, none of the related projects are located adjacent to the project site. Project impacts related to hazards and hazardous materials would be limited to the project site and areas immediately surrounding the site. As the building sites for all related projects are outside of the proposed project vicinity, the hazards and hazardous materials impacts of the related projects would not contribute to the hazards and hazardous materials impacts to the project site. Overall, cumulative impacts to hazards and hazardous materials would be ***less than significant*** and no mitigation measures are required.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Hazards and hazardous materials impacts associated with the proposed project would be ***less than significant***.

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