

## **4.18 WILDFIRE**

This chapter describes the potential impacts associated with the adoption and implementation of the proposed project that are related to wildfire. A summary of the relevant regulatory framework and existing conditions is followed by a discussion of potential impacts and cumulative impacts from implementation of the proposed project.

### **4.18.1 ENVIRONMENTAL SETTING**

#### **4.18.1.1 REGULATORY FRAMEWORK**

This section summarizes key State and local regulations set forth to identify wildfire hazard areas and to reduce wildfire risks to new and existing structures. There are no federal regulations related to wildfires that are applicable to the Environmental Impact Report (EIR) Study Area.

#### **State Regulations**

##### *California Department of Forestry and Fire Protection*

The California Department of Forestry and Fire Protection (CAL FIRE) is dedicated to the fire protection and stewardship of over 31 million acres of California's wildlands. The Office of the State Fire Marshal supports CAL FIRE's mission to protect life and property through fire prevention engineering programs, law and code enforcement, and education. The Office of the State Fire Marshal provides for fire prevention by enforcing fire-related laws in State-owned or-operated buildings; investigating arson fires in California; licensing those who inspect and service fire protection systems; approving fireworks for use in California; regulating the use of chemical flame retardants; evaluating building materials against fire safety standards; regulating hazardous liquid pipelines; and tracking incident statistics for local and State government emergency response agencies. The California Fire Plan is the State's road map for reducing the risk of wildfire through planning and prevention to reduce firefighting costs and property losses, increase firefighter safety, and contribute to ecosystem health. The California Fire Plan is a cooperative effort between the State Board of Forestry and Fire Protection and CAL FIRE.

##### *Fire Hazard Severity Zones and Responsibility Areas*

CAL FIRE publishes maps recommending fire hazard severity zones for every California county. The maps identify lands in California as falling within one of the following management areas: local responsibility area (LRA), state responsibility area (SRA), and federal responsibility area (FRA). Within each of these areas, a single agency has direct responsibility: in LRAs, local fire departments or fire protection districts are responsible; in SRAs, CAL FIRE is responsible; in FRAs, federal agencies such as the United States Forest Service, National Park Service, Bureau of Land Management, United States Department of Defense,

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United States Fish and Wildlife Service, and Department of the Interior are responsible.<sup>1</sup> Within the LRA, CAL FIRE designates lands as being within a Very High Fire Hazard Severity Zone (VHFHSZ) or non-VHFHSZ.

### *State Responsibility Areas Fire Safe Regulations*

Section 4290, Hazardous Fire Areas, of the California Public Resources Code (PRC) includes fire safety regulations that apply to development in San Rafael to decrease the risk of wildfire events. Section 4290 establishes minimum standards for roads for fire equipment access; standards for signs identifying streets, roads, and buildings; private water supply resources for emergency fire use; fuel breaks and greenbelts; basic emergency access; and wildland fuel modification. Section 4290 works in conjunction with current and new building construction development standards in SRAs, defined by the State Board of Forestry and Fire Protection as an area in which the State has primary financial responsibility for preventing and suppressing fires. Section 4291, Mountainous, Forest-, Brush- and Grass-Covered Lands, of the PRC requires annual defensible space of 100 feet to be provided around all structures in or adjoining any mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material, including land with such characteristics in portions of the EIR Study Area. SRA Fire Safe Regulations do not supersede local regulations that equal or exceed minimum State regulations.

### *California Office of Emergency Services*

The California Office of Emergency Services (Cal OES) was established on January 1, 2009, and created by Assembly Bill (AB) 38, which merged the duties, powers, purposes, and responsibilities of the former Cal OES with those of the Governor's Office of Homeland Security. Cal OES is responsible for the coordination of overall state agency response to major disasters in support of local government. It is responsible for ensuring the State's readiness to respond to and recover from all hazards—natural, man-made, emergencies, and disasters—and for assisting local governments in their emergency preparedness, response, recovery, and hazard mitigation efforts. In 2018, Cal OES completed a *State Hazard Mitigation Plan*, which designated fire hazard severity zones and wildland-urban interface (WUI) areas.<sup>2</sup>

### *Senate Bill 1241*

SB 1241 requires that the fire hazard severity zone maps prepared by CAL FIRE be included in each general plan in the state. Each map sets the foundation for subsequent policies, usually in a general plan's safety element, to address fire prevention and protection in areas with a High or VHFHSZ. SB 1241 additionally requires that General Plan Safety Elements get reviewed by CAL FIRE prior to adoption to ensure policies provide adequate wildfire protection.

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<sup>1</sup> Association of Bay Area Governments and Metropolitan Transportation Commission, 2018, *White Paper: Bay Area Wildland Urban Interface Review of Risks, Plans, and Strategies*, page 7; and Contra Costa County, 2018, *Contra Costa County Hazard Mitigation Plan*, page 13-1.

<sup>2</sup> California Office of Emergency Management. 2018. *California State Hazard Mitigation Plan*, [https://www.caloes.ca.gov/HazardMitigationSite/Documents/002-2018%20SHMP\\_FINAL\\_ENTIRE%20PLAN.pdf](https://www.caloes.ca.gov/HazardMitigationSite/Documents/002-2018%20SHMP_FINAL_ENTIRE%20PLAN.pdf), accessed on April 25, 2019.

## *California Building Code*

### Building Design Standards

The California Building Code (CBC), Part 2 of 24 California Code of Regulations, identifies building design standards, including those for fire safety. The CBC is updated on a three-year cycle. It is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions under specific amendment rules prescribed by the State Building Standards Commission. Commercial and residential buildings are plan checked by local city and county building officials for compliance with the CBC and any applicable local edits. Typical fire safety requirements of the CBC include the installation of sprinklers in all high-rise buildings and other facilities; the establishment of fire-resistance standards for fire doors, building materials, and particular types of construction in high fire hazard severity zones; requirements for smoke-detection systems; exiting requirements; and the clearance of debris. The City of San Rafael regularly adopts each new CBC update under the San Rafael Municipal Code (SRMC) Chapter 12.100, Adopted Codes.

### Materials and Methods for Exterior Wildfire Exposure

Chapter 7A of the CBC, Materials and Methods for Exterior Wildfire Exposure, prescribes building materials and construction methods for new buildings in a fire hazard severity zone. Chapter 7A contains requirements for roofing; attic ventilation; exterior walls; exterior windows and glazing; exterior doors; decking; protection of underfloor, appendages, and floor projections; and ancillary structures.

## *California Fire Code*

The California Fire Code incorporates, by adoption, the International Fire Code of the International Code Council, with California amendments. This is the official fire code for the state and all political subdivisions. It is found in California Code of Regulations Title 24, Part 9 and, like the CBC, it is revised and published every three years by the California Building Standards Commission. Also like the CBC, the California Fire Code is effective statewide, but a local jurisdiction may adopt more restrictive standards based on local conditions. The City of San Rafael regularly adopts each new fire code update under SRMC Title 4, Fire. The California Fire Code is a model code that regulates minimum fire safety regulations for new and existing buildings; facilities; storage; processes, including emergency planning and preparedness; fire service features; fire protection systems; hazardous materials; fire flow requirements; and fire hydrant locations and distribution. Typical fire safety requirements include installation of sprinklers in all high-rise buildings; the establishment of fire resistance standards for fire doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas.

### Wildland-Urban Interface Areas

Chapter 49 of the California Fire Code, Requirements for WUI Fire Areas, prescribes construction materials and methods in fire hazard severity zones; requirements generally parallel CBC Chapter 7A.

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### Defensible Space

California PRC Sections 4291 et seq. require that brush, flammable vegetation, or combustible growth within 100 feet be removed around all buildings on or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land covered in flammable materials. Requirements regarding hazardous vegetation and fuel management are also contained in Sections 4906 and 4907 of the California Fire Code.

### *2018 Strategic Fire Plan for California*

CAL FIRE produced the *2018 Strategic Fire Plan for California*, which contains goals, objectives, and policies to prepare for and mitigate the effects of fire on California's natural and built environments.<sup>3</sup> The *2018 Strategic Fire Plan for California* focuses on fire prevention and suppression activities to protect lives, property, and ecosystems in addition to providing natural resource management to maintain state forests as a resilient carbon sink to meet California's climate change goals. This plan provides State Responsibility Fire Safe Regulations, which requires that all parcels 1 acre or larger provide a minimum 30-foot setback for buildings from all property lines and/or the center of the road. A key component of the *2018 Strategic Fire Plan for California* is the collaboration between communities to ensure fire suppression and natural resource management is successful.<sup>4</sup>

### *California Public Utilities Commission*

In 2007, wildfires in southern California were ignited by overhead utility power lines and aerial communication facilities near power lines. In response, the California Public Utilities Commission (CPUC) began considering and adopting regulations to protect the public from fire hazards due to overhead power lines and nearby aerial communication facilities. The CPUC published a Fire Threat Map under Rulemaking 15-05-006, following procedures in Decision 17-01-009, revised by Decision 17-06-024, which adopted a work plan for the development of a utility High Fire Threat District where enhanced fire safety regulations in Decision 17-12-024 apply.<sup>5</sup> The fire regulations require electric utilities to:<sup>6</sup>

- Prioritize the correction of safety hazards.
- Correct nonimmediate fire risks in "Tier 2" (elevated fire threat) areas on the CPUC High Fire-Threat District within 12 months, and in "Tier 3" (extreme fire threat) areas within 6 months.
- Maintain increased clearances between vegetation and power lines within the High Fire Threat District.
- Maintain stricter wire-to-wire clearances for new and reconstructed facilities in Tier 3 areas.
- Conduct annual inspections of overhead distribution facilities in rural areas of Tier 2 and Tier 3 areas.
- Prepare a fire prevention plan annually if overhead facilities exist in the High Fire Threat District.

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<sup>3</sup> California State Board of Forestry and Fire Protection. 2019. *2019 Strategic Fire Plan for California*, <https://www.fire.ca.gov/media/5504/strategicplan2019-final.pdf>, accessed on April 25, 2019.

<sup>4</sup> California State Board of Forestry and Fire Protection. 2019. *2019 Strategic Fire Plan for California*, <https://www.fire.ca.gov/media/5504/strategicplan2019-final.pdf>, accessed on April 25, 2019

<sup>5</sup> California Public Utilities Commission, <http://www.cpuc.ca.gov/firethreatmaps/>, accessed on March 23, 2020.

<sup>6</sup> California Public Utilities Commission, press release: CPUC Adopts New Fire-Safety Regulations, <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M201/K352/201352402.PDF>, accessed on March 23, 2020.

## **Regional Regulations**

### *Marin Community Wildfire Protection Plan*

The *Marin Community Wildfire Protection Plan*<sup>7</sup> (CWPP), adopted in July 2016, is intended to provide a foundation for and facilitate continued collaboration between the multiple agencies providing fire protection within Marin County. The CWPP has five goals: (1) continue to identify and evaluate wildland fire hazards; (2) articulate and promote the concept of land use planning related to fire risk; (3) support and continue to participate in the collaborative development and implementation of wildland fire protection plans; (4) increase awareness, knowledge, and actions implemented by individuals and communities to reduce human loss and property damage from wildland fires; and (5) integrate fire and fuels management practices.

### *Marin County Operational Area Emergency Recovery Plan*

The *Marin County Operational Area Emergency Recovery Plan* (ERP), adopted in November 2012, establishes procedures and assigns responsibility to ensure the effective management of emergency recovery operations within the Marin County Operational Area, which includes San Rafael. The ERP describes operational concepts relating to recovery, identifies components of recovery organization, and describes general responsibilities of the Marin County Office of Emergency Services (Marin OES). Recovery operations in a multi-jurisdictional incident are coordinated and managed by the Marin OES in accordance with the California Emergency Services Act.

### *Marin Operational Area Emergency Operations Plan*

The *Marin OES Emergency Operations Plan*, adopted in October 2014, establishes emergency management policies and procedures, in addition to assigning responsibilities to ensure the effective management of emergency operations within the Marin Operational Area. Cities and towns within the county participate in the Marin OES coordination of emergency management activities. Emergency operations are split into four phases: (1) Preparedness Phase, (2) Response Phase, (3) Recovery Phase, and (4) Prevention/Mitigation Phase. The City of San Rafael coordinates with Marin OES to ensure emergency management functions meet the expectation of the City.

### *Local Wildfire Prevention and Mitigation Initiative / Marin Wildfire Prevention Authority*

The San Rafael Fire Department (SRFD) has partnered with FireSafe Marin and all of the neighboring cities and towns to develop a countywide wildfire prevention strategy. In September 2019, the SRFD introduced a proposed plan to create a new joint powers authority agreement (countywide coalition) named the Marin Wildfire Prevention Authority (MWPA). The MWPA would be a multi-agency authority that would include the cities and towns of Marin County, the County of Marin, and fire protection districts in Marin County to fund, coordinate, and oversee wildland fire detection, fuel reduction, public education, defensible space evaluations, and local agency wildfire prevention efforts.

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<sup>7</sup> Marin County Fire Department. 2016. *Community Wildfire Protection Plan*, <https://drive.google.com/file/d/0Bx15pyv0JoJZZ0tVR1pXOV9vTGRQVTRrQWxER0VOeVQxd2xz/view>, accessed on April 25, 2019.

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The proposed new revenue measure for sustained support of wildfire prevention activities (Measure C) was approved by voters in March of 2020 and will accomplish key initiatives:

- Improving emergency alert and warning systems to enhance early alert for organized evacuations.
- Expanding coordinated efforts to reduce combustible plants and vegetation.
- Improving evacuation routes and infrastructure to enhance traffic flow and promote safe evacuations.
- Expanding and enhancing defensible space and home evaluations and educating homeowners about how to reduce the vulnerability of their home and neighborhood to wildfire.
- Providing grants and support to seniors, persons with disabilities, and low-income homeowners who need assistance maintaining defensible space, making homes fire resistant, reducing combustible vegetation, and preparing for emergencies.
- Creating and sustaining a coordinated local wildfire public safety and disaster preparedness program.
- Supporting residents to establish Firewise USA programs in neighborhoods through ongoing public education.

### *Marin County Multi-Jurisdictional Local Hazard Mitigation Plan.*

The Marin County Multi-Jurisdictional Local Hazard Mitigation Plan (MCM LHMP) was completed in November 2018 to assess risks posed by natural hazards and to develop a mitigation strategy for reducing the County's risks. Several jurisdictions and special districts participated in the creation of the MCM LHMP, including the City of San Rafael. The risks and mitigations in the MCM LHMP are broad and encompassing of the entirety of Marin County. The MCM LHMP incorporates each local jurisdiction's individual LHMP as appendices to ensure jurisdiction-specific information supplements the vulnerability mitigation in the MCM LHMP. The City of San Rafael LHMP is incorporated into the MCM LHMP as Appendix P.

### *Marin County Code of Ordinances*

The Marin County Code of Ordinances (MCCO) is organized by title, chapter, and section. It contains all ordinances for the County. Most provisions relating to fire protection services are included in Title 16, Fire, which establishes the jurisdiction of the Marin County Fire Department (MCFD). Services of the MCFD include response to all types of fires and other emergencies in County unincorporated areas, fire prevention, investigation, emergency medical services, and management of the WUI, including areas within the EIR Study Area. Title 16, Fire, of the MCCO includes the following two chapters related to adoption of and amendments to adopted codes:

- **Chapter 16.16:** Adoption of California Fire Code and International Fire Code, which adopts prescriptions regulating governing conditions hazardous to life and property from fire or explosion. This includes the 2019 Fire Code, which consists of portions of the 2018 International Fire Code as amended by the California Building Standards Commission.
- **Chapter 16.17:** Urban-Wildlife Interface Code, which adopts the 2003 edition of the International Urban-Wildland Interface Code. This code governs the mitigation of wildfire hazards to life and property from the intrusion of fire from wildland exposures.

MCCO Title 19, Marin County Building Code, adopts the 2019 CBC and the 2018 International Building Code to promote healthy, safe, and sustainable communities. Title 19 includes building regulations related to the fire resistance of buildings.

## Local Regulations

### *San Rafael General Plan 2020*

The City of San Rafael 2020 General Plan goals, policies, and programs relevant to the wildfire are primarily in the Safety and Resilience Element. As part of the proposed project, some existing General Plan goals, policies, and programs would be amended or substantially changed and new policies would be added. A comprehensive list of policy changes is provided in Appendix B, Proposed General Plan Goals, Policies, and Programs, of this Draft EIR. Applicable goals, policies, and programs are identified and assessed for their effectiveness and potential to result in an adverse physical impact under Section 4.18.3, Impact Discussion, later in this chapter.

### *San Rafael Municipal Code*

The SRMC includes various directives to minimize adverse impacts associated with wildfires in San Rafael. The SRMC is organized by title, chapter, and section. Most provisions related to wildfire prevention are included in Title 4, Fire, Title 12, Building Regulations, and Title 14, Zoning:

- **Chapter 4.08, Fire Code.** This chapter adopts the California Fire Code in its entirety except for portions that are changed or modified by Section 4.08.120 of the chapter. Section 4.08.010 of this chapter recognizes that the adoption of the California Fire Code is to prescribe regulations and building standards in order to protect life and property from fire, explosion, earthquake, and other disasters and to provide for permits. Flammable and combustible liquids materials are regulated in Sections 4.08.060 through Section 4.08.100.
- **Chapter 4.12, Wildland-Urban Interface, Vegetation Management Standards.** Section 4.12.010 establishes a WUI zone in the city, described in the city of San Rafael WUI map, dated July 2, 2007. The WUI is an area where structures and other human development are within a short distance of wildland vegetation that is prone to wildfires. WUI areas are managed by specific combustible vegetation management standards required in order to create defensible space around structures that will minimize the spread of fires from wildlands to structures, from structures to wildlands, and from structures to structures. Chapter 4.12 requires homeowners living within designated WUI zones to maintain up to 100 feet of defensible space around structures or to their property line, whichever is closer. Section 4.12.030 includes the vegetation management standards. Section 4.12.032 describes the exceptions to the vegetation management standards for creeks, drainage ways, and wetlands. Section 4.12.035 describes the exceptions to vegetation management standards for protected plants and wildlife.
- **Chapter 12.100, Adopted Codes.** This chapter adopts the CBC in its entirety except for portions that are changed or modified by Section 12.12.020 of the chapter.
- **Chapter 14.16, Site and Regulations.** Section 14.16.170, Geotechnical Review, requires that geotechnical reports consistent with the geotechnical matrix in the General Plan appendices to assess such hazards as potential seismic hazards, liquefaction, landsliding, mudsliding, erosion, sedimentation, and settlement and hazardous soils conditions to determine the optimum location for structures, to advise of special structural requirements, and to evaluate the feasibility and desirability of a proposed facility in a specific location.

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### *San Rafael Local Hazard Mitigation Plan*

The *San Rafael Local Hazard Mitigation Plan* (LHMP), adopted in November 2017, is a guide to hazard mitigation within the EIR Study Area and serves as a tool to help decision makers direct hazard mitigation activities and resources. In the context of an LHMP, mitigation is an action that reduces or eliminates long-term risk to people and property from hazards, including wildfire. Table 4.18-1 contains the hazard mitigation actions in the LHMP that reduce the risk of damage or injury from wildfire.

**TABLE 4.18-1 LOCAL HAZARD MITIGATION PLAN ACTIONS RELEVANT TO EMERGENCY RESPONSE AND WILDFIRE**

Number	Actions
<b>Emergency Response Mitigation Actions</b>	
<b>Action 1</b>	Integrate LHMP into Safety Element of General Plan.
<b>Action 2</b>	Identify the locations, then subsequently equip, stock, and train staff in order to establish emergency evacuation shelters to temporarily house people during major emergencies.
<b>Action 3</b>	Plan, prepare, conduct community outreach, and deploy emergency evacuation exercises in neighborhoods prone to wildfire or tidal flooding during extreme wet weather periods.
<b>Wildfire Mitigation Actions</b>	
<b>Action 42</b>	Funding for vegetation management coordinator position.
<b>Action 43</b>	Create a San Rafael-specific community wildfire protection plan.
<b>Action 44</b>	Create new strategic fuel interruption zones in WUI areas and maintain and expand existing fuel interruption zones.
<b>Action 45</b>	Juniper and bamboo clearing program from residential properties in the WUI.
<b>Action 46</b>	Create new point-specific wildfire prevention programs targeting areas where homeless encampments are known to be.
<b>Action 47</b>	San Rafael Measure A project implementation.

Source: City of San Rafael Local Hazard Mitigation Plan, adopted June 2017.

### *San Rafael Wildfire Prevention and Protection Action Plan*

The *San Rafael Wildfire Prevention and Protection Action Plan* (WPPAP)—conditionally approved in March 2019 and formally adopted in August 2020 following review by a steering committee—provides a series of prescriptions, programs, and ordinance updates to make the city more fire and disaster resistant. The WPPAP is designed to serve as a master plan and framework to address all phases of disaster response: mitigation, preparedness, response, and recovery. The WPPAP considers and incorporates local, county, regional, and national findings and best practices. The WPPAP defines fuel, vegetation management plan, wildfire, and the WUI in the city. Table 4.18-2 summarizes the objectives of the WPPAP that are comprehensive in nature and reflect the need for a cohesive approach to reducing wildfire risk in the EIR Study Area. Objectives are organized into three categories: (1) Vegetation Management; (2) Wildfire Prevention and Protection; and (3) Notifications and Evacuation.

**TABLE 4.18-2 WILDFIRE PREVENTION AND PROTECTION ACTION PLAN OBJECTIVES**

Number	Objectives
<b>Section 1: Vegetation Management</b>	
<b>Objective 1</b>	Eliminate highly flammable vegetation near structures and roadways throughout San Rafael.
<b>Objective 2</b>	Apply vegetation management and defensible space standards citywide.



**TABLE 4.18-2 WILDFIRE PREVENTION AND PROTECTION ACTION PLAN OBJECTIVES**

<b>Number</b>	<b>Objectives</b>
<b>Objective 3</b>	Reduce ember ignitions within immediate zones to prevent structure ignitions through enhanced standards and support.
<b>Objective 4</b>	Expand goat grazing for vegetation maintenance.
<b>Objective 5</b>	Establish additional fuel interruption zones.
<b>Objective 6</b>	Improve public education regarding fire-safe landscaping and living with wildfire.
<b>Objective 7</b>	Establish more fire-wise communities in San Rafael.
<b>Objective 8</b>	Reduce hazardous fuels through an abatement process on privately owned unimproved lots and within 200 feet of a structure or 20 feet of a roadway.
<b>Objective 9</b>	Effectively coordinate the removal of vegetative debris from public and private property.
<b>Objective 10</b>	Engage Community Emergency Response Team members, neighborhood response groups, and other volunteers in fire prevention.
<b>Objective 11</b>	Reengage volunteer “broom pull days.”
<b>Objective 12</b>	Review and update WUI map.
<b>Objective 13</b>	Adopt PRC Sections 4290 and 4291.
<b>Objective 14</b>	Develop new efforts, solutions, and resources dedicated to wildfire prevention and protection.
<b>Section 2: Wildfire Prevention and Protection</b>	
<b>Objective 15</b>	Immediately seize ignition sources at encampments and remove encampments in open space as quickly as possible.
<b>Objective 16</b>	Reduce likelihood of ignition in undeveloped land.
<b>Objective 17</b>	Explore opportunities in Fire and Building Code updates to increase use of fire-resistant materials and application of CA Fire Code 7A.
<b>Objective 18</b>	Eliminate fire hazard associated with shake and wooden roofs.
<b>Objective 19</b>	Develop comprehensive San Rafael hazardous vegetation study and mitigation measures.
<b>Objective 20</b>	Complete an analysis of fire roads and strategic fuel breaks.
<b>Objective 21</b>	Increase the number of hardened homes in San Rafael.
<b>Objective 22</b>	Improve development and implementation of vegetation management plans and create new resilient landscape templates.
<b>Objective 23</b>	Increase the number of completed vegetation management plans and resilient landscape templates.
<b>Objective 24</b>	Improve the public’s fire risk awareness with sign improvements and installation.
<b>Objective 25</b>	Reduce fire risk and keep visitors using short-term rentals safe.
<b>Objective 26</b>	Hire additional staff dedicated to vegetation management and disaster mitigation.
<b>Objective 27</b>	Increase police ranger staffing.
<b>Section 3: Notifications and Evacuations</b>	
<b>Objective 28</b>	Reduce fuels along roadways.
<b>Objective 29</b>	Establish a residential hillside “parking box” program.
<b>Objective 30</b>	Improve public emergency alerting capabilities and policies.
<b>Objective 31</b>	Increase capability for early fire warnings and detection.
<b>Objective 32</b>	Review and expand evacuation plans, incorporating areas of refuge, and support neighborhood evacuation drills.
<b>Objective 33</b>	Ensure safe and resilient critical infrastructure.
<b>Objective 34</b>	Ensure that appropriate staff can send and receive emergency alerts.
<b>Objective 35</b>	Ensure that City staff can communicate during an emergency.
<b>Objective 36</b>	Ensure that residents can evacuate through garage doors if power is out.
<b>Objective 37</b>	Prevent potential entrapments by requiring two gates in any fence in designated areas.
<b>Objective 38</b>	Maintain and expand coordination of wildfire prevention and response planning with Marin County, other Marin jurisdictions, Marin County Fire, FireSafe MARIN, and neighboring landowning partners.

Source: City of San Rafael *Wildfire Prevention and Protection Plan*, adopted March 2019.

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### 4.18.1.2 EXISTING CONDITIONS

#### Wildfire Background

##### *Types of Wildfire*

There are three basic types of wildland fires:

- **Crown fires** burn trees to their tops and are the most intense and dangerous wildland fires.
- **Surface fires** burn surface litter and duff and are known for being the easiest fires to extinguish and to cause the least damage. Brush and small trees enable surface fires to reach treetops, and so are referred to as *ladder fuels*.
- **Underground fires** occur underground in deep accumulations of dead vegetation. These fires move very slowly and can be difficult to extinguish due to limited access.<sup>8</sup>

Wildfires burn in many types of vegetation—forest, woodland, scrub (including chaparral, sage scrub, and desert scrub), and grassland.<sup>9</sup> Many species of native California plants are adapted to fire. Chaparral shrubs recover from fire in one of two ways: (1) woody root crowns or burls below the soil surface that survive a fire and resprout; and (2) shrubs (various species of *Manzanita* and *Ceanothus*) that are killed by fire and produce seeds requiring intense heat from a fire to germinate.<sup>10</sup> Additionally, many species of conifers have seed cones that require fire to open in order for them to reproduce.<sup>11</sup> Between 2010 and 2017, wildfires in California burned about 265,000 acres of forest land, 207,000 acres of scrub vegetation, 99,000 acres of grassland, 18,000 acres of desert vegetation, and 14,000 acres of other vegetation types.<sup>12</sup> Wildfires have been observed to be more frequent and growing in intensity the past several years, particularly in the State of California where prolonged drought and hot, dry temperatures have been common.

##### *Wildfire Causes*

Although the term *wildfire* suggests natural origins, a 2017 study that evaluated 1.5 million wildfires in the United States between 1992 and 2012 found that humans were responsible for igniting 84 percent of

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<sup>8</sup> Natural Resources Canada. 2018. Fire Behavior, <https://www.nrcan.gc.ca/forests/fire-insects-disturbances/fire/13145>, accessed on December 21, 2018.

<sup>9</sup> California Department of Forestry and Fire Prevention (CAL FIRE). 1999. Learning to Live with Fire, [http://www.fire.ca.gov/communications/downloads/live\\_w\\_fire.pdf](http://www.fire.ca.gov/communications/downloads/live_w_fire.pdf), accessed on April 8, 2019.

<sup>10</sup> Rundel, Philip, and Gustafson, Robert. 2005. *Introduction to the Plant Life of Southern California*. Berkeley and Los Angeles, California: University of California Press.

<sup>11</sup> California Department of Forestry and Fire Prevention (CAL FIRE). 1999. Learning to Live with Fire, [http://www.fire.ca.gov/communications/downloads/live\\_w\\_fire.pdf](http://www.fire.ca.gov/communications/downloads/live_w_fire.pdf), accessed on April 8, 2019.

<sup>12</sup> State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention (CAL FIRE). 2018. *2018 Strategic Fire Plan for California*, <http://cdfdata.fire.ca.gov/pub/fireplan/fpupload/fpppdf1614>. Pdf, accessed on April 8, 2019.

wildfires, accounting for 44 percent of acreage burned.<sup>13</sup> The three most common types of human-caused wildfires are debris burning (logging slash, farm fields, trash, etc.); arson; and equipment use.<sup>14</sup> Power lines can also ignite wildfires through downed lines, vegetation contact, conductors that collide, and equipment failures.<sup>15</sup> CAL FIRE determined that 16 wildfires in northern California in October 2017 were caused by electric power and distribution lines, conductors, and the failure of power poles.<sup>16,17</sup> Lightning is the most common cause of nature-induced wildfire.<sup>18</sup>

An analysis of US Forest Service wildfire data from 1986 to 1996 determined that 95 percent of human-caused wildfires and 90 percent of all wildfires was within 0.5 mile of a road, and that about 61 percent of all wildfires and 55 percent of human-caused wildfires occurred within approximately 650 feet (200 meters) of a road. The study concluded that the increase in human-caused ignition greatly outweighs the benefits of increased access for firefighters.<sup>19</sup>

There are three primary methods of wildfire spread:

- **Embers.** Embers are the most prolific cause of home ignition, at a rate of two out of every three homes destroyed. Embers are glowing or burning pieces of vegetation or construction debris that are lofted during a wildfire and can move up to a mile ahead of a firestorm. These small embers or sparks may fall on the vegetation near a home (on dry leaves, needles, or twigs on the roof) and subsequently ignite the home. Ember storms place at potential risk all structures without fire-resistant landscaping and construction that are within miles of the fire.
- **Direct Flame Contact.** Direct flame impingement refers to the transfer of heat by direct flame exposure. Direct contact will heat the building materials of the home, and if the time and intensity of exposure is severe enough, windows will break and materials will ignite.
- **Radiant Heat.** A house can catch fire from the heat that is transferred to it from nearby burning objects, even in the absence of direct flames or embers. By creating defensible space around homes,

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<sup>13</sup> Balch, Jennifer; Bradley, Bethany; Abatzoglou, John, et. al. 2017, March 14. Human-Started Wildfires Expand the Fire Niche Across the United States. Proceedings of the National Academy of Sciences (PNAS): Volume 114 No. 11, <https://www.pnas.org/content/pnas/114/11/2946.full.pdf>, accessed on December 20, 2018.

<sup>14</sup> Pacific Biodiversity Institute. 2007. Roads and Wildfires, [http://www.pacificbio.org/publications/wildfire\\_studies/Roads\\_And\\_Wildfires\\_2007.pdf](http://www.pacificbio.org/publications/wildfire_studies/Roads_And_Wildfires_2007.pdf), accessed on April 12, 2019.

<sup>15</sup> Texas Wildfire Mitigation Project. 2018. How Do Power Lines Cause Wildfires? <https://wildfiremitigation.tees.tamus.edu/faqs/how-power-lines-cause-wildfires>, accessed on April 12, 2019.

<sup>16</sup> California Department of Forestry and Fire Prevention (CAL FIRE). 2018, June 1. CAL FIRE Investigators Determine Causes of 12 Wildfires in Mendocino, Humboldt, Butte, Sonoma, Lake, and Napa Counties, [https://calfire.ca.gov/communications/downloads/newsreleases/2018/2017\\_WildfireSiege\\_Cause.pdf](https://calfire.ca.gov/communications/downloads/newsreleases/2018/2017_WildfireSiege_Cause.pdf), accessed on April 12, 2019.

<sup>17</sup> California Department of Forestry and Fire Prevention (CAL FIRE). 2018, May 25. CAL FIRE Investigators Determine Cause of Four Wildfires in Butte and Nevada Counties, [https://calfire.ca.gov/communications/downloads/newsreleases/2018/2017\\_WildfireSiege\\_Cause%20v2%20AB%20\(002\).pdf](https://calfire.ca.gov/communications/downloads/newsreleases/2018/2017_WildfireSiege_Cause%20v2%20AB%20(002).pdf), accessed on April 12, 2019.

<sup>18</sup> Balch, Jennifer; Bradley, Bethany; Abatzoglou, John, et. al. 2017, March 14. Human-Started Wildfires Expand the Fire Niche Across the United States. Proceedings of the National Academy of Sciences (PNAS): Volume 114 No. 11. <https://www.pnas.org/content/pnas/114/11/2946.full.pdf>, accessed on December 20, 2018.

<sup>19</sup> Pacific Biodiversity Institute. 2007. Roads and Wildfires, [http://www.pacificbio.org/publications/wildfire\\_studies/Roads\\_And\\_Wildfires\\_2007.pdf](http://www.pacificbio.org/publications/wildfire_studies/Roads_And_Wildfires_2007.pdf), accessed on April 12, 2019.

## **WILDFIRE**

the risk from radiant heat is significantly reduced. A home with 100 feet of clearance from forest or shrubs will usually have minimal impact from radiant heat or direct flame.<sup>20</sup>

Wildfire season in the Western US recently has lengthened from an average of between five and seven months to year-round. The number of large wildfires in California (i.e., greater than 1,000 acres) has increased from approximately 25 to 55 per year since the 1960s.<sup>21</sup> At the same time, the average annual temperature in the Western US has risen by nearly two degrees Fahrenheit since the 1970s, and the winter snowpack has declined.<sup>22</sup> The encroachment of urban development into wildland areas has been another contributing factor.

Frequent wildfires reduce recovery of shrubs and trees—especially shrubs and trees that must produce seeds to regenerate. Wildfires also increase invasion of nonnative grasses, resulting in the conversion of native shrublands to nonnative grassland.<sup>23</sup> Nonnative grasses are generally more flammable than the chaparral and sage scrub vegetation that is replaced; thus, such conversion exacerbates wildfire hazards.<sup>24</sup>

### *Secondary Effects*

Secondary effects of wildfire include debris flows postfire and air pollution from the smoke generated by fires. The following sections describe the hazardous conditions created by these secondary wildfire effects.

### Debris Flows

Postfire landslide hazards include fast-moving, highly destructive debris flows that can happen soon after wildfires in response to high intensity rainfall events, and flows that are generated over a longer time because of root decay and loss of soil strength. Fires increase the potential for debris flows by increasing the imperviousness of soil so that it repels water, and by destroying vegetation that would slow and absorb rainfall, and whose roots would help stabilize soil.<sup>25</sup> The burning of vegetation and soil on slopes more than doubles the rate that water will run off into watercourses.<sup>26</sup> Postfire debris flows are particularly hazardous because they can occur with little warning, exert great impulsive loads on objects in their paths, strip vegetation, block drainage ways, damage structures, and endanger human life. Debris flows differ from mudflows in that debris flows are composed of larger particles. Postfire debris flows are

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<sup>20</sup> City of San Rafael. 2019. Wildfire Prevention and Protection Action Plan.

<sup>21</sup> State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention (CAL FIRE). 2018. 2018 Strategic Fire Plan for California, page 7.

<sup>22</sup> State Board of Forestry and Fire Protection and California Department of Forestry and Fire Prevention (CAL FIRE). 2018. 2018 Strategic Fire Plan for California.

<sup>23</sup> US Geological Survey. 2012. Fire-Driven Alien Plant Invasion in a Fire-Prone Community, [http://www.californiachaparral.com/images/Fire\\_driven\\_alien\\_plants\\_Brief.pdf](http://www.californiachaparral.com/images/Fire_driven_alien_plants_Brief.pdf), accessed on April 12, 2019.

<sup>24</sup> See University of California Division of Agriculture and Natural Resources (ANR). 2009. Invasive Plants and Wildfires in Southern California, <https://anrcatalog.ucanr.edu/pdf/8397.pdf>, accessed on April 12, 2019.

<sup>25</sup> US Geological Survey. 2018. New post-wildfire resource guide now available to help communities cope with flood and debris flow danger, [https://www.usgs.gov/center-news/post-wildfire-playbook?qt-news\\_science\\_products=1#qt-news\\_science\\_products](https://www.usgs.gov/center-news/post-wildfire-playbook?qt-news_science_products=1#qt-news_science_products), accessed on December 27, 2018.

<sup>26</sup> California Geological Survey. 2018. Post-Fire Debris Flow Facts, <https://www.conservation.ca.gov/index/Pages/Fact-sheets/Post-Fire-Debris-Flow-Facts.aspx>, accessed on December 20, 2018.

most common in the two years after a fire; they are usually triggered by heavy rainfall. It takes much less rainfall to trigger debris flows from burned basins than from unburned areas.

Debris flows are considered a type of landslide, which is defined as a mass-movement process that generates a down-slope movement of mud, soil, rock, and/or vegetation.<sup>27</sup> Debris flows occur when surface soils become completely saturated by intense rainstorms and break away from the hillside. These flows are highly fluid, and therefore follow the gulches and creek canyons to the base of the slope.<sup>28</sup> Areas with steep slopes are typically within debris flow areas.

### Air Pollution

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic materials burn. The biggest health threat from smoke is from fine particles (PM<sub>2.5</sub>), which are microscopic particles that can penetrate the lungs and cause a range of health problems, from burning eyes and a runny nose to aggravated chronic heart and lung diseases. Exposure to particulate pollution is even linked to premature death. Some populations are more sensitive than others to smoke—for instance, people with heart or lung diseases, the elderly, children, people with diabetes, and pregnant women.<sup>29</sup>

## **Fire Protection Resources**

The SRFD provides fire protection and prevention services in the EIR Study Area and operates six fire stations and one fire administration office. The SRFD, along with a vegetation management specialist, vegetation management inspector, and two open-space rangers with the San Rafael Police Department, manage fire prevention efforts throughout the city. Existing programs include monthly chipper days, WUI home inspections, and removal of dangerous items at encampments that pose immediate fire risks.<sup>30</sup> In addition, because wildfires do not respect jurisdictional boundaries, the SRFD recently introduced a proposed plan to create a new joint powers authority with the MWPA to improve regional wildfire prevention efforts. A description of fire protection resources in San Rafael as it relates to the impacts to the SRFD is provided in Chapter 4.15, Public Services and Parks and Recreation, of this Draft EIR.

## **EIR Study Area**

### *Wildfire History*

The City of San Rafael 2017 LHMP describes two wildfire disaster declarations in Marin County and eight wildfires in the county from 1919 to 2016. Two of the eight wildfires were within close proximity to the city of San Rafael (Kent Woodlands Wildfire, 1972; Sorich Park Wildfire, 1976).

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<sup>27</sup> Foster Morrison. 2017. *City of San Rafael Local Hazard Mitigation Plan*.

<sup>28</sup> Foster Morrison. 2017. *City of San Rafael Local Hazard Mitigation Plan*.

<sup>29</sup> Airnow. 2018. How Smoke from Fires Can Affect Your Health, <https://airnow.gov/index.cfm?action=smoke.index>, accessed on December 21, 2018.

<sup>30</sup> City of San Rafael. 2019. *Wildfire Prevention and Protection Action Plan*.

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The LHMP also describes three structural fires that in the city, including the Downtown Fire in July 1957, the Courthouse Fire in May 1971, and the Marin History Museum Fire in July 1990.<sup>31</sup> CAL FIRE's *Historic Wildfire Perimeters (1950–2017)* database shows three additional fires within the city limits: Margarita Drive Fire in 1968, San Rafael Assist Fire in 1975, and the San Rafael Hill fires in 2000 and 2001.<sup>32</sup> One additional fire occurred in June 2018 on lands within Boyd Park and burned approximately 13 acres.

### *Wildfire Hazards*

The EIR Study Area is not in an FRA but contains land in an SRA and LRA, as shown on Figure 4.18-1. The SRA includes approximately 6,457 acres in the Sun Valley, Santa Venetia, China Camp, and Lucas Valley neighborhoods.<sup>33</sup> The LRA covers the remaining acreage within the city, approximately 14,169 acres.<sup>34</sup>

As shown on Figure 4.18-1, the approximately 6,457 acres within the SRA are designated as a moderate fire hazard severity zone. The land in the LRA has 8,315 acres that are not within a fire hazard severity zone, 3,467 acres in a moderate fire hazard severity zone, and 2,387 acres in a high fire hazard severity zone.<sup>35</sup> There is no acreage in the EIR Study Area classified by the State of California as being a VHFHSZ.

According to Cal OES, a WUI is defined as any area where structures and other human development meet or intermingle with wildland vegetation.<sup>36</sup> Developments in the WUI exacerbate fire occurrence and fire spread in several ways, including:

- Increased numbers of human-caused wildfires.
- Wildfires become harder to fight.
- Firefighting resources are diverted from containing the wildfire to protecting lives and homes.
- Letting natural fires burn becomes impossible, leading to buildup of fuel and increasing wildfire hazard further.<sup>37</sup>

Increased fire frequency tends to eliminate and replace native shrubs with weedy, highly flammable annual grasslands.<sup>38</sup>

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<sup>31</sup> Foster Morrison. 2017. *City of San Rafael Local Hazard Mitigation Plan*, pages 4-91 to 4-100.

<sup>32</sup> California Department of Forestry and Fire Protection. 2018. *Historic Wildfire Perimeters (1950-2017) Database*. <http://www.arcgis.com/home/item.html?id=853e0aa557e54adc95c9e9c68b585889>, accessed April 12, 2019.

<sup>33</sup> Marin County. 2017. *Fire Hazard Severity Zone*. <http://www.arcgis.com/home/item.html?id=0683285b35354c18a93de194a8e3b70d>, accessed April 17, 2019.

<sup>34</sup> Marin County. 2017. *Fire Hazard Severity Zone*. <http://www.arcgis.com/home/item.html?id=0683285b35354c18a93de194a8e3b70d>, accessed April 17, 2019.

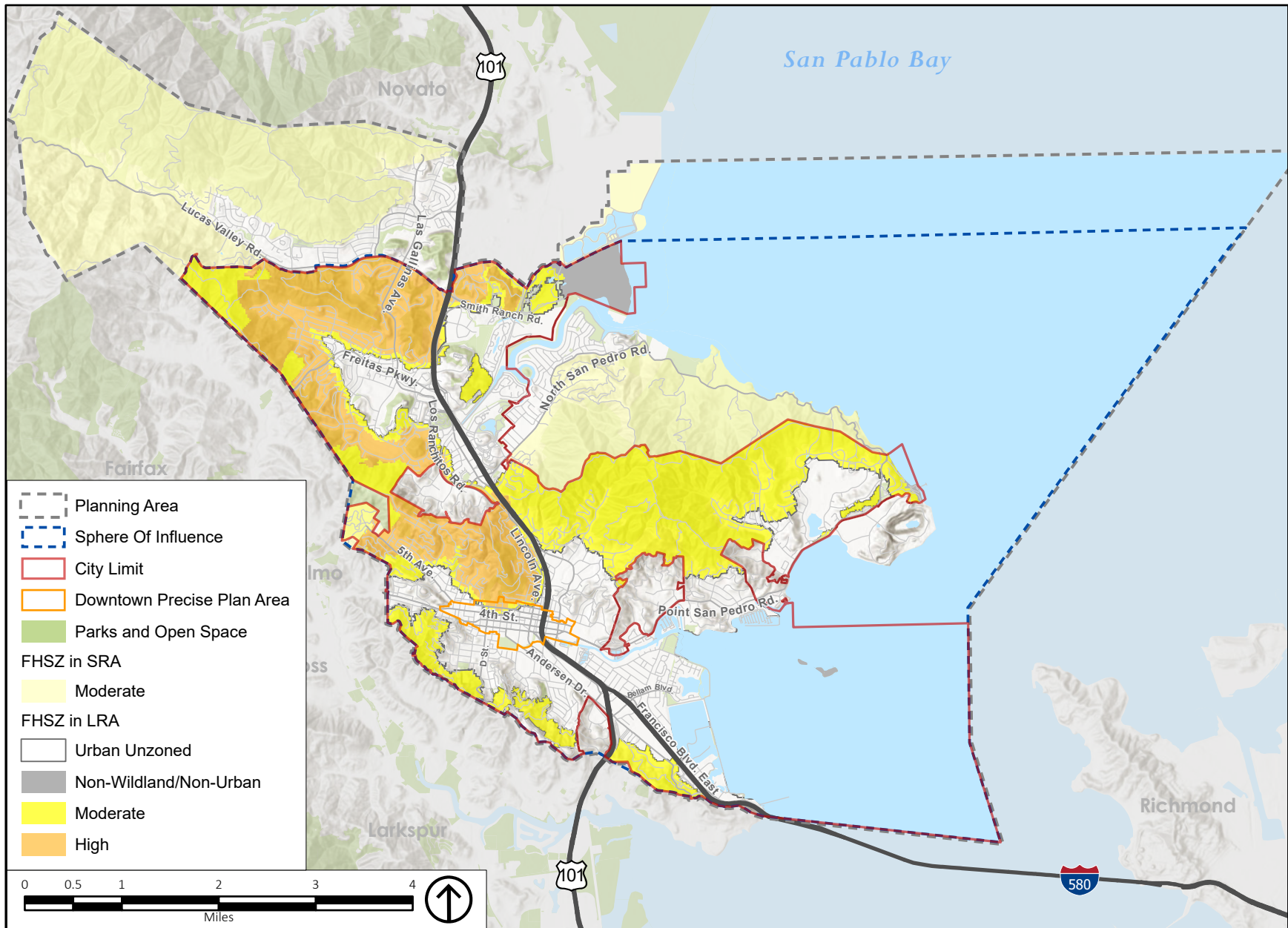
<sup>35</sup> Marin County. 2017. *Fire Hazard Severity Zone*. <http://www.arcgis.com/home/item.html?id=0683285b35354c18a93de194a8e3b70d>, accessed April 17, 2019.

<sup>36</sup> Cal OES. 2018. *California State Hazard Mitigation Plan*.

<sup>37</sup> Radeloff, Volker; Helmers, David; Kramer, H., et al. 2018. Rapid Growth of the US Wildland-Urban Interface Raises Wildfire Risk. *Proceedings of the National Academy of Sciences (PNAS)*: Volume 115 No. 13, <https://www.pnas.org/content/pnas/115/13/3314.full.pdf>, accessed on April 18, 2019.

<sup>38</sup> US Geological Survey. 2012. Why Are Biologists Studying Housing Loss from Wildfires? <https://www.usgs.gov/center-news/why-are-biologists-studying-housing-loss-wildfires>, accessed on April 18, 2019.

**WILDFIRE**



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.18-1

**Wildfire Responsibility Areas and Fire Hazard Severity Zones**

## **WILDFIRE**

Approximately 6,000 acres of land within San Rafael is in the WUI, as shown on Figure 4.18-2.<sup>39</sup> Land uses in the WUI consist of approximately 3,960 acres of residential uses and approximately 2,025 acres of industrial, commercial, and open space uses. According to the WPPAP, the City's current wildfire prevention efforts are focused on the WUI.<sup>40</sup>

The unincorporated portion of the EIR Study Area is primarily within moderate fire hazard severity zones, as shown previously on Figure 4.18-1, and is under the County's jurisdiction and therefore regulated under the Marin CWPP, the Local Wildfire Prevention and Mitigation Initiative and Marin Wildfire Prevention Authority, and CAL FIRE.

### Landcover and Vegetation

As described in more detail in Chapter 4.4, Biological Resources, of this Draft EIR, the EIR Study Area contains 12 vegetation communities, but nearly 38 percent of the plantings consist of urban and barren vegetation communities. The dominant nonurban vegetation types in the remaining 62 percent of the EIR Study Area consist of oak woodland (26 percent), annual grassland (14 percent), hardwood-conifer (11 percent), and saline marsh (6 percent). The remaining 5 percent of vegetation consists of coastal scrub, mixed chaparral, riparian woodland, lacustrine, freshwater marsh, eucalyptus, and cropland.

### Slopes

Slope is a measure of land steepness, and wildfire intensity and rate of spread increase as slope increases due to the tendency of heat to rise via convection.<sup>41</sup> For example, as slope increases from 20 to 40 percent, flame heights can double, and rates of fire spread can increase fourfold; from 40 to 60 percent, flame heights can become three times higher, and rates of spread can increase eightfold.<sup>42</sup> The arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes. The topography in the EIR Study Area is diverse, with rolling hills, valleys, and ridges that trend from the northwest to the southeast. Areas with steep slopes in the EIR Study Area include Terra Linda and Sleepy Hollow Open Space Area in the northwest corner of the EIR Study Area, Southern Heights Ridge on the southwestern edge of the EIR Study Area, and Black Canyon and San Pedro Mountain in the eastern portion of the EIR Study Area. These areas would also be more susceptible to debris flow after a fire.

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<sup>39</sup> County of Marin. 2019. Urban-Wildland Interface. <http://www.marinmap.org/dnn/DataServices/GISDataDownload.aspx>, accessed April 17, 2019.

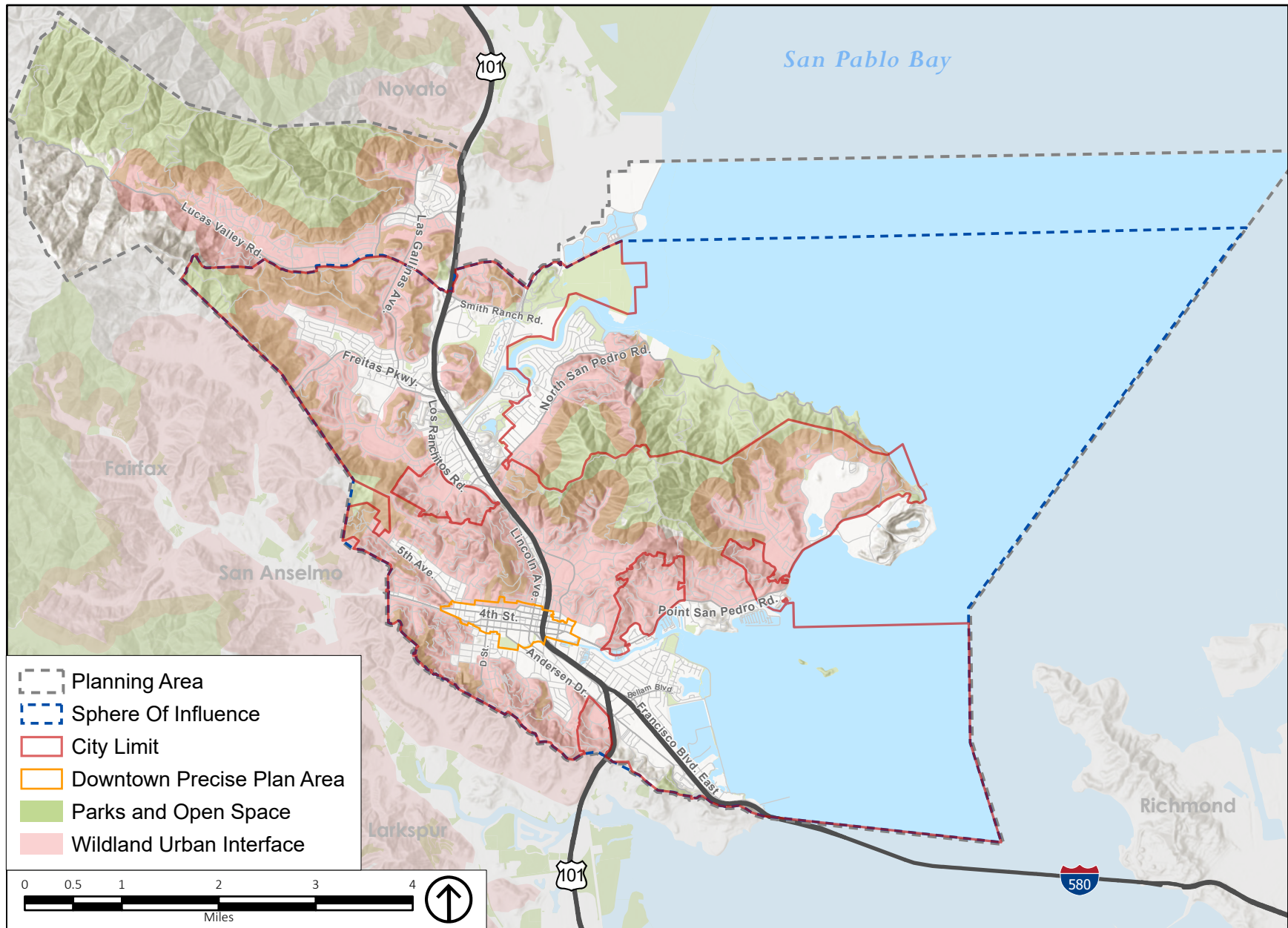
<sup>40</sup> City of San Rafael. 2019. *Wildfire Prevention and Protection Action Plan*.

<sup>41</sup> Foster Morrison. 2017. *City of San Rafael Local Hazard Mitigation Plan*.

<sup>42</sup> Marin County Fire Department. 2016. *Community Wildfire Protection Plan*.



WILDFIRE



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.18-2  
Wildland Urban Interface

## **WILDFIRE**

### Prevailing Winds

Prevailing winds are considered the wind pattern from the direction that is predominant at a place or season. Winds in the EIR Study Area can be characterized as nontornadic (straight-line) winds, which can exacerbate fire conditions by drying out the vegetation, increasing fuel in the region, and increasing the intensity of existing fires.<sup>43</sup> Prevailing wind patterns consist of wind from the west from February to November, and winds from the north from November to February.<sup>44</sup> The windier part of the year is from February to July, with average wind speeds of 8.0 miles per hour, and the calmer wind months are from July to February, with an average wind speed of 6.9 miles per hour.<sup>45</sup>

## **Downtown Precise Plan Area**

### *Wildfire History*

There are no known wildfires that have occurred in the Downtown Precise Plan Area.

### *Wildfire Hazards*

As shown on Figure 4.18-3, the Downtown Precise Plan Area contains both high and moderate fire hazard severity zones along the northern edge of the boundary. As shown on Figure 4.18-4, the northern, western, and southwestern portions of the Downtown Precise Plan Area are in the WUI.

### Landcover and Vegetation

The Downtown Precise Plan Area is designated as an urban, built-out portion of San Rafael. As such, there is little existing natural vegetation within the Downtown Precise Plan Area boundary. Vegetation in the Downtown Precise Plan Area is primarily associated with street trees and associated landscaping. Natural vegetation does exist on San Rafael Hill, which sits on the northern boundary of the Downtown Precise Plan Area. As described in Chapter 4.4, Biological Resources, of this Draft EIR, the vegetation cover of San Rafael Hill consists entirely of oak woodland.

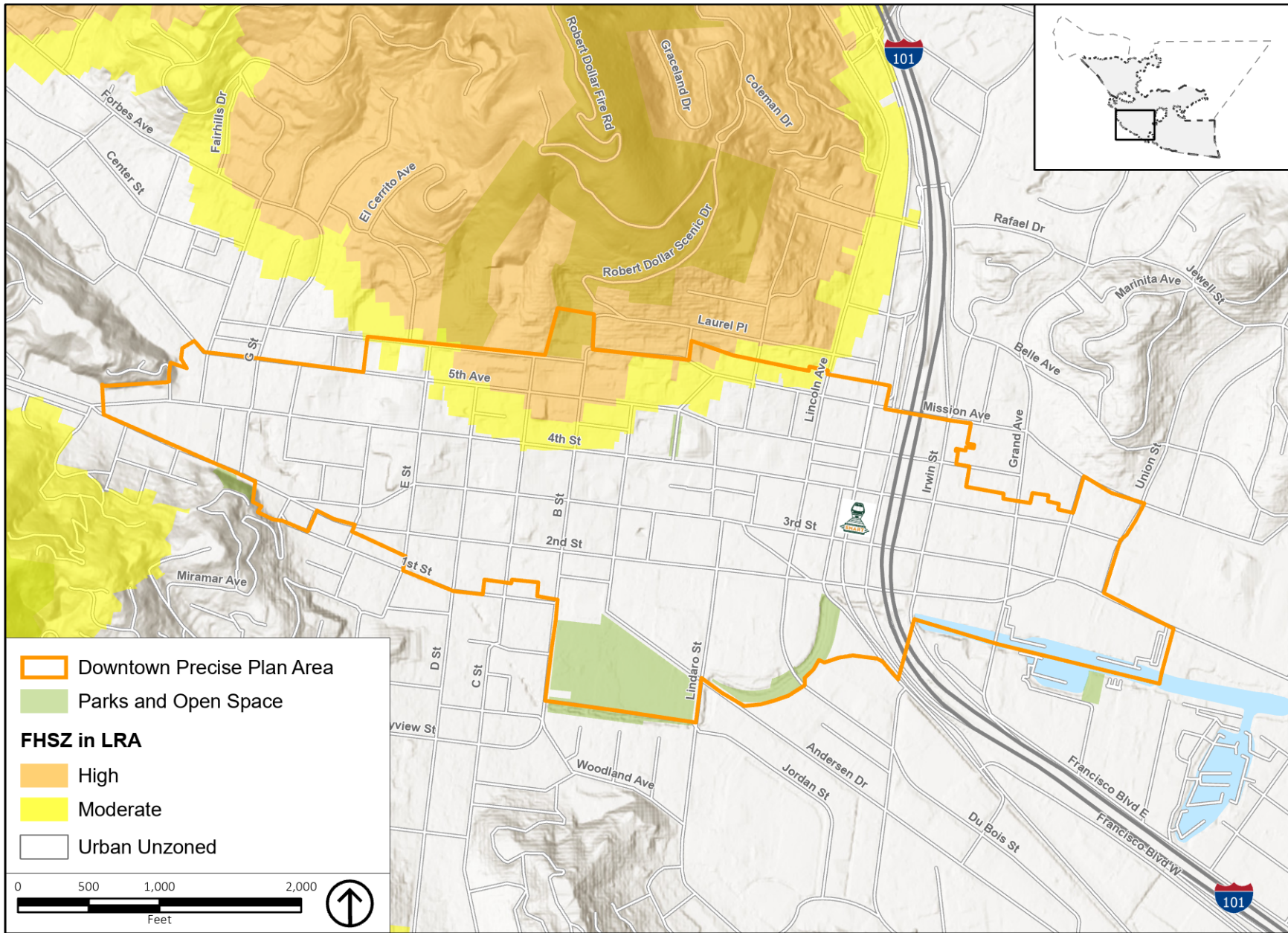
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<sup>43</sup> Foster Morrison. 2017. *City of San Rafael Local Hazard Mitigation Plan*.

<sup>44</sup> Weather Spark. 2016. Average Weather in San Rafael California, United States. <https://weatherspark.com/y/562/Average-Weather-in-San-Rafael-California-United-States-Year-Round>, accessed on April 18, 2019.

<sup>45</sup> Weather Spark. 2016. Average Weather in San Rafael California, United States. <https://weatherspark.com/y/562/Average-Weather-in-San-Rafael-California-United-States-Year-Round>, accessed on April 18, 2019.

**WILDFIRE**



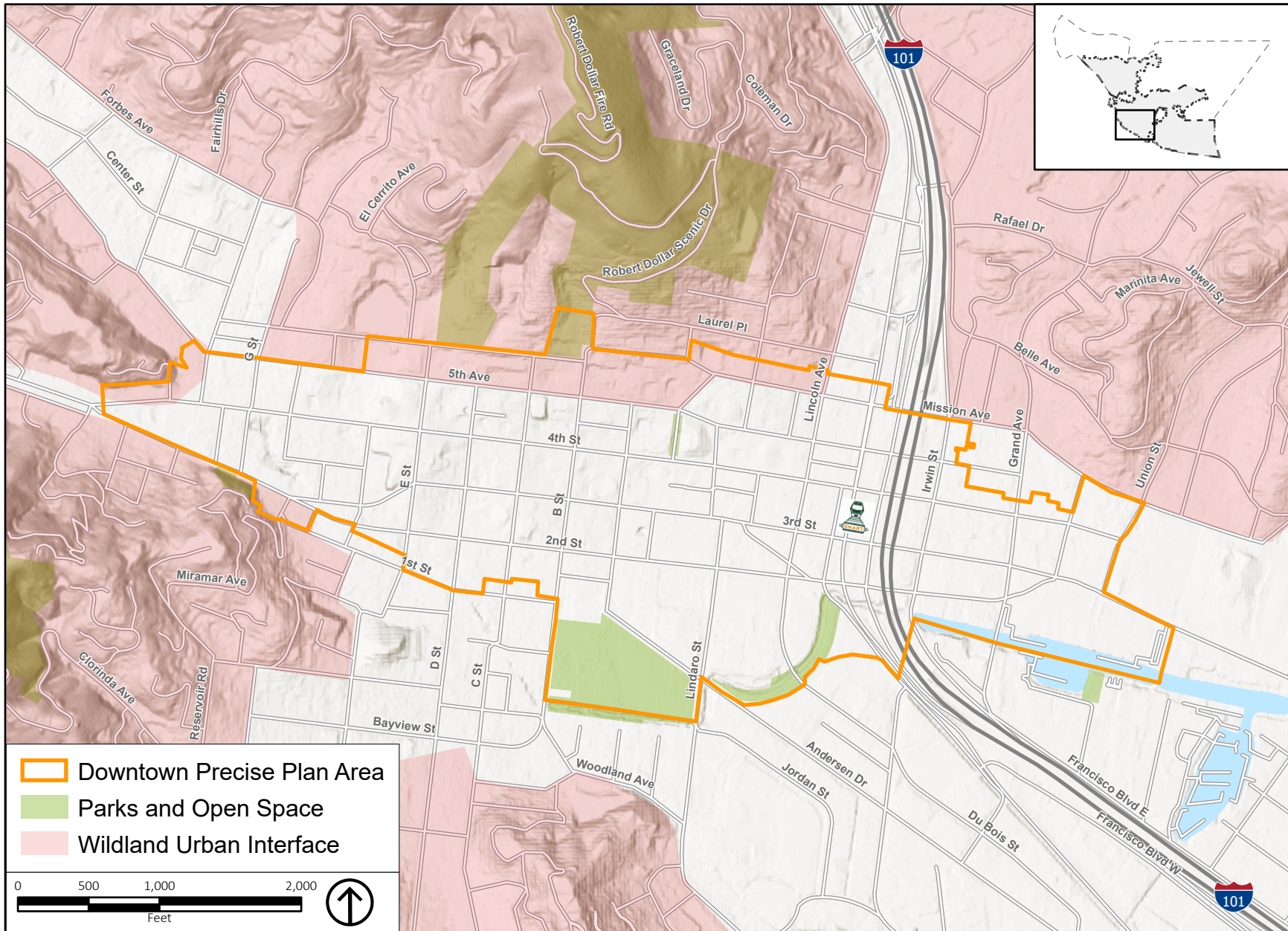
Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.18-3

**Downtown Wildfire Responsibility Areas and Fire Hazard Severity Zones**



WILDFIRE



Source: ESRI, 2017; County of Marin, 2009; City of San Rafael, 2019; PlaceWorks, 2019.

Figure 4.18-4  
Downtown Wildland Urban Interface

### Slopes

The Downtown Precise Plan Area has zero to gentle slopes.<sup>46</sup> Approximately 92 percent of the Downtown Precise Plan Area contains slopes ranging from 0 to 9 percent to the south between First Street on the southern boundary and Fourth Street towards the north. The additional 8 percent of the Downtown Precise Plan Area ranges from 15 to 50 percent.<sup>47</sup> The northern boundary of the Downtown Precise Plan Area sits at the base of the San Rafael Hill, which has a slope of 50 percent or more at Boyd Park. Therefore, the portion of the Downtown Precise Plan Area which slopes between 15 and 50 percent is concentrated north of Fourth Street until reaching the base of San Rafael Hill.

### Prevailing Winds

Wind patterns are uniform for the entire EIR Study Area. As discussed above, prevailing wind patterns consist of wind from the west or north with average wind speeds between 6.9 and 8.0 miles per hour.

## **4.18.2 STANDARDS OF SIGNIFICANCE**

Pursuant to Appendix G, Environmental Checklist Form, of the California Environmental Quality Act (CEQA) Guidelines, implementation of the proposed project, if located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would result in significant wildfire impacts if it would:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan.
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.
5. Result in significant cumulative impacts related to wildfire.

## **4.18.3 IMPACT DISCUSSION**

The standards of significance listed in Section 4.18.2, apply to projects that are within or near lands within the SRA or lands that are within a VHFHSZ. As shown on Figure 4.18-1, the EIR Study Area is within the SRA, and as shown on Figure 4.18-2, a large portion of the EIR Study Area is within the WUI. Therefore, the standards of significance in Section 4.18.2 apply to the proposed project.

<sup>46</sup> USDA, Natural Resource Conservation Service. 2017. Web Soil Survey (WSS). <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>, accessed on April 22, 2019.

<sup>47</sup> USDA, Natural Resource Conservation Service. 2017. Web Soil Survey (WSS). <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>, accessed on April 22, 2019.

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### **FIRE-1                    Implementation of the proposed project could substantially impair an adopted emergency response plan or emergency evacuation plan.**

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#### **General Plan 2040**

As discussed in Section 4.18.1.1, Regulatory Framework, the Marin OES provides emergency management and recovery services through the Marin ERP and the Marin Emergency Operations Plan (EOP). All cities and towns within Marin County participate in the regional coordination of emergency management activities by Marin OES. As described in Impact Discussion HAZ-6 in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR, implementation of the proposed General Plan 2040 would not impair implementation of or physically interfere with either the Marin ERP or the Marin EOP.

At the local level, San Rafael is responsible for managing emergency preparedness, response, and evacuation through the LHMP. As discussed above in Section 4.18.1.1, Regulatory Framework, the City of San Rafael LHMP includes actions that support emergency response in the event of a disaster, including wildfire. LHMP Action 1 requires the integration of the LHMP into the Safety and Resilience Element of the General Plan 2040, and Actions 2 and 3 instruct the City to adequately prepare both first responders and the community on emergency evacuations in the event of a natural disaster.

LHMP Action 43 instructs the City to adopt a WPPAP and this was accomplished in August 2020 as described above in Section 4.18.1.1, Regulatory Framework. The WPPAP is San Rafael's master plan and framework to address all phases of a wildfire disaster: mitigation, preparedness, response, and recovery. The framework of the WPPAP is outlined through a series of objectives organized into three categories. Category 3, Notifications and Evacuation, includes several objectives that are focused on maintaining clear routes for emergency vehicle access, improving public emergency alerting capabilities, supporting neighborhood evacuation drills, reviewing and expanding evacuation plans as needed, ensuring safe and resilient critical infrastructure, and limiting design review provisions. Action 32 of the WPPAP specifically states that the City shall review Countywide evacuation plans and expand existing plans to address San Rafael's unique needs which would establish additional transportation network redundancies and potentially reduce the burden on a single egress artery during an emergency. Further, as stated in Section 4.18.1.1, Marin County residents approved Measure C to fund proactive state-of-the-art wildfire prevention and preparedness efforts in Marin County which includes a key initiative aimed to improve evacuation routes and infrastructure to enhance traffic flow and promote safe evacuations.

The proposed Safety and Resilience (S) Element contains goals, policies, and programs that require local planning and development decisions to take into account existing plans related to wildfire. The following General Plan goals, policies, and programs would serve to ensure that future development takes existing plans into account:

**Goal S-1: A Safer, More Resilient City.** Minimize San Rafael's vulnerability to the impacts of environmental hazards and public health emergencies.

- **Policy S-1.1: Local Hazard Mitigation Plan (LHMP).** The San Rafael LHMP is adopted by reference into the General Plan. Policies and actions throughout the General Plan shall be consistent with the LHMP and support its goals and objectives.

- **Program S-1.1A: LHMP Mitigation Action Plan.** Implement the Mitigation Action Plan in the LHMP. The City will consider opportunities to advance each action through operating procedures, development approvals, budgets, public education, and capital improvement projects.
- **Program S-1.1B: Mitigation Program Funding.** Develop an overall funding strategy to prioritize and pursue mitigation projects, including identification and tracking of grants and regular coordination with FEMA and State hazard mitigation agencies.
- **Program S-1.1C: LHMP Updates.** Periodically update the Local Hazard Mitigation Plan to reflect new data, technology, available resources, partnership opportunities, and state and federal requirements.
- **Program S-1.4A: LHMP Amendments.** Amend local emergency preparedness documents as needed to address public health emergencies, including communication protocol, emergency operating procedures, and provisions for sheltering-in-place.

**Goal S-4: A Fire-Safe Community.** Minimize injury, loss of life, and damage to property resulting from wildland fire hazards.

- **Policy S-4.1: Wildfire Hazards.** Continue vegetation management and maintenance programs to reduce the destructive potential of wildfires.
  - **Program S-4.1A: Wildfire Prevention and Protection Action Plan.** Implement the Wildfire Prevention and Protection Action Plan (August 2020) in a manner consistent with the direction provided by the San Rafael City Council.

Additional General Plan 2040 policies and programs related to emergency response and evacuation are included in the Land Use (LU), Mobility (M), and Community Services and Infrastructure (CSI) Elements. Such policies and programs address emergency access, adequate emergency facilities and response times, and the density of development to ensure growth in San Rafael does not block emergency services access in the event of an emergency. Such policies and programs include:

**Goal LU-1: Well-Managed Growth.** Grow and change in a way that serves community needs, improves fiscal stability, and enhances the quality of life.

- **Policy LU-1.8: Density of Residential Development.** Use the density ranges in the Land Use Element to determine the number of housing units allowed on properties within the Planning Area. The following provisions apply:
  - The density “range” includes a maximum and minimum. A given General Plan designation may have multiple corresponding zoning districts, including at least one district in which the maximum density may be achieved. Other zoning districts may have maximum densities that are less than the maximum indicated by the General Plan.
  - The number of units permitted on a given parcel may be affected by site resources and constraints, potentially hazardous conditions, climate-related factors (sea level rise, fire hazards, etc.), traffic and access (including wildfire evacuation constraints), the adequacy of infrastructure, City design policies, and prevailing densities in adjacent areas.
  - The maximum net density shown on the General Plan excludes density bonuses that may be provided for affordable housing or other community benefits, in accordance with State law and local housing policies.

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- As required by State law, an accessory dwelling unit (ADU) or junior ADU shall not be counted as a dwelling unit for the purposes of calculating net density.
- Areas in the “Downtown” General Plan category shall be exempt from the requirements of this policy and are instead subject to standards defined by the Downtown San Rafael Precise Plan.
- **Policy LU-1.10: Intensity of Non-Residential Development.** Use the Floor Area Ratio limits on Figure 3-2 to determine the square footage of building space allowed on properties with non-residential General Plan designations. The following provisions apply:
  - As with density, FAR is calculated on a “net” basis, and is based on the area of each parcel excluding streets and easements.
  - The maximum FAR stated by the General Plan is not guaranteed. The square footage permitted on a given parcel may be affected by site resources and constraints, potentially hazardous conditions, climate-related factors (sea level rise, fire hazards, etc.), traffic and access (including wildfire evacuation constraints), the adequacy of infrastructure, and City design policies.
  - The maximum FARs shown in Figure 3-2 exclude any residential development on the property. In the event that residential uses or mixed use projects are proposed on these sites, the maximum area is the sum of the FAR allowance plus the residential density allowance for the property. This Clause does not apply to Downtown San Rafael, which is regulated by the Downtown Precise Plan.

**Goal M-2: Improved Transportation Efficiency and Access.** Sustain an efficient, cost-effective transportation network that continuously improves mobility and accessibility for all users.

- **Policy M-2.8: Emergency Access.** Identify alternate ingress and egress routes (and modes of travel) for areas with the potential to be cut off during a flood, earthquake, wildfire, or similar disaster.

**Goal CSI-3: Exceptional Public Safety Services.** Provide and maintain exceptional fire, public safety, and paramedic services.

- **Policy CSI-3.2: Mitigating Development Impacts.** Engage the Police and Fire Departments in the review of proposed development and building applications to ensure that public safety, fire prevention, and emergency access and response needs are considered and effectively addressed.
  - **Program CSI-3.1B: Capital Facilities.** Complete improvements to essential public safety facilities made possible by voter-approved measures. Conduct periodic evaluations of facility and technology needs in the future to ensure that the Police and Fire Departments are equipped to respond to emergencies and deliver quality services.
  - **Program CSI-3.2B: Emergency Response Time.** Use the development review process to identify appropriate measures to reduce fire hazards and ensure adequate emergency response capacity.
- **Policy CSI-3.6: Mutual Aid.** Maintain mutual aid agreements for police and fire service with other jurisdictions and community service districts to ensure that the capacity exists to adequately respond to local emergencies.

As discussed in Section 4.18.1.1, Regulatory Framework, there are various local, regional, and State agencies that have adopted plans relevant to emergency response and evacuation. Implementation of General Plan 2040 would include the requirement to comply with all existing adopted regulations, which include the 2019 California Fire Code and the 2019 California Building Code regulations, the Marin ERP, the Marin EOP, the SRMC, the LHMP, and the WPPAP. Each of these documents incorporate emergency



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response and evacuation provisions to ensure existing and future development comply with best management practices. As discussed in Chapter 3, Project Description, of this Draft EIR, potential future development is expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels in the form of infill/intensification on sites already developed and/or underutilized and/or in close proximity to existing residential and residential-serving development. All future development, regardless of the location, is required to comply with adopted local, regional, and State plans and regulations addressing emergency response and evacuation. As such, and as determined in Impact Discussion HAZ-6 in Chapter 4.9, Hazards and Hazardous Materials, of this Draft EIR, implementation of General Plan 2040 would not substantially impair an adopted emergency response or emergency evacuation plan, and the impact would be *less than significant*.

**Significance without Mitigation:** Less than significant.

### Downtown Precise Plan

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to wildfires. Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area would be required to comply with adopted local, regional, and State plans and regulations addressing emergency response and evacuation. Therefore, the impacts described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, like the General Plan 2040, implementation of the Downtown Precise Plan would not substantially impair an adopted emergency response or emergency evacuation plan, and the impact would be *less than significant*.

**Significance without Mitigation:** Less than significant.

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<b>FIRE-2</b>	<b>Implementation of the proposed project could, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.</b>
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### General Plan 2040

Pursuant to the 2015 *California Building Industry Association v. Bay Area Air Quality Management District* case, CEQA applies to a project's impacts on the environment and not the environment's impacts on the project, unless the project would exacerbate the environmental hazard.<sup>48</sup> Implementation of General Plan 2040 would result in a significant impact if it would exacerbate wildfire risks due to site characteristics such as slope, prevailing winds, or vegetation.

The proposed Safety and Resilience (S) Element and the Conservation and Climate Change (C) Element contain goals, policies, and programs that require local planning and development decisions to consider

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<sup>48</sup> California Supreme Court, 2015, *California Building Industry Association v. Bay Area Air Quality Management District*, Opinion No. S213478, date filed December 17, 2015.

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the risk of wildfire hazards. In addition to the goals, policies, and programs listed in Impact Discussion FIRE-1, the following General Plan goals, policies, and programs would serve to minimize potential adverse impacts from wildfire hazards:

**Goal S-4: Reduction of Wildfire Hazards.** Minimize injury, loss of life, and damage to property resulting from wildland fire hazards.

- **Policy S-4.1: Wildfire Hazards.** Continue vegetation management and maintenance programs to reduce the destructive potential of wildfires.
  - **Program S-4.1B: Fire Hazard Maps.** Maps identifying potential fire hazard areas in San Rafael. Use these maps for vegetation management and planning purposes.
  - **Program S-4.1C: Fire Protection Ordinance.** Continue to implement Municipal Code standards to reduce fire hazards in areas, including vegetation management requirements and the designation of a Wildland-Urban Interface (WUI) Zone. Periodically update these standards and the WUI map to implement Wildfire Action Plan measures and other programs to further reduce wildfire risks.
  - **Program S-4.1D: Wildfire Fuel Breaks.** Where necessary, create new fuel interruption zones in Wildland Urban Interface areas and maintain and expand zones that are already in place. Highly flammable exotic vegetation should be strategically removed in these areas to slow the spread of wildfire and reduce threats to homes.
  - **Program S-4.1E: Goat Grazing.** Continue the use of goat grazing on lands where native vegetation will not be harmed through cooperative relationships with contractors and public agencies.
  - **Program S-4.1F: Encampment-Related Hazards.** Work collaboratively with service providers for homeless residents and other partners to reduce fire hazards associated with illegal encampments and campfires. Consider partnerships to employ unsheltered residents in vegetation management work.
  - **Program S-4.1G: Open Space and Forestry Management.** Develop science-based open space and forest management plans to reduce fuel loads, maintain fuel breaks, replace highly flammable species with native species, and increase the health and carbon sequestration potential of open space lands.
- **Policy S-4.2: Fire Resilience in Developed Areas.** Improve the resilience of neighborhoods and business districts to wildfire hazards.
  - **Program S-4.2A: Reduction of Structure Hazards.** Implement measures to reduce wildfire hazards to existing structures, including fire-resistant landscaping and building materials, protected vents and gutters, phasing out wood shake roofs, vegetation management requirements around structures, limits on highly flammable plant materials, restricted parking on narrow streets, and enforcement and abatement programs. Focus on measures that provide the greatest fire safety benefits relative to their costs to the City and private sector.
  - **Program S-4.2B: Tree Maintenance.** Undertake a tree safety maintenance program to maintain the health and safety of trees along public roadways and minimize safety impacts from trees falling in road rights of way.
  - **Program S-4.2C: Public Education on Fire Resilience and Response.** Improve public education and awareness about fire-safe structures and landscaping. This should include demonstration projects (“Resilient Landscape Templates”) that help property owners understand what species to remove and what to plant, and how to make their homes more fire-resistant. Education programs also

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should address actions to be taken in the event a fire is approaching, including warnings, evacuation routes, shelters, and provisions for “go bags” and personal safety.

- **Policy S-4.3: New Development in Fire Hazard Areas.** Design new development to minimize fire hazards. Densities, land uses, and site plans should reflect the level of wildfire risk and evacuation capacity at a given location.
  - **Program S-4.3A: Fire Hazard Mitigation in New Development.** Through the development review process, require appropriate mitigation measures such as fire preventive site design, landscaping and building materials, and the use of fire suppression techniques such as interior and exterior sprinklers. Before adopting new Code standards and requirements, consider and disclose their potential costs to applicants relative to the benefits they may provide.
  - **Program S-4.3B: Development Review for Emergency Response.** Review development applications in fire prone areas to ensure adequate emergency vehicle access, and adequate water pressure and supply for fire-fighting purposes (see also Goal CSI-4).
  - **Program S-4.3C: Wildfire Prevention Funding.** Develop new partnerships, revenue opportunities, and funding avenues for wildfire prevention and hazard abatement.

**Goal C-1. Goal C-1: Supporting Our Natural Communities.** Protect, restore, and enhance San Rafael’s environment and natural communities.

- **Policy C-1.14: Control of Invasive Plants.** Remove and control undesirable non-native plant species from City-owned open space and road rights-of-way and encourage the removal and control of these species from non-City owned ecologically sensitive or fire-prone areas.
  - **Program C-1.14D: Wildfire Action Plan Implementation.** Implement the provisions of San Rafael’s Wildfire Action Plan (2020) relating to the control of invasive plants, including further limiting the sale or planting of highly flammable non-native plants in the city, supporting volunteer activities to remove Scotch and French broom, revising standards for Eucalyptus, providing fuel breaks on public property, and educating the public on fire-safe landscaping.

*Slope*

As discussed in Section 4.18.1.2, Existing Conditions, the EIR Study Area contains moderate to steep slopes as well as flatter valley areas. Construction on sloped project sites may require grading and site preparation activities, which could change the slope of a single parcel or site. Each development would be required to submit grading plans and construction drawings, which would be reviewed and approved by City staff based on the California Building Code and California Fire Code. Additionally, new development would be required to comply with General Plan 2040 goals, policies, and programs described in Impact Discussion FIRE-1 and in Impact Discussion FIRE-2.

New slopes created by potential future development would be minor and would not be expected to exacerbate the spread of wildfires within the EIR Study Area because future development is anticipated to occur in existing urban areas. Future development that may occur on sloped land in the greater EIR Study Area is not anticipated to change the overall characteristics of the city. Implementation of the proposed project would not involve new development or redevelopment within the SRA, and therefore would not involve the creation of substantial new slopes that would exacerbate wildfire risks. As described above, implementation of the proposed project would largely occur in existing urbanized areas and would not

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create new slopes in flat areas of the EIR Study Area. Therefore, significant risk of loss, injury, or death due to slopes would be *less than significant*.

### *Prevailing Winds*

The windier part of the year in the EIR Study Area is from February to July, with average wind speeds of over 8.0 miles per hour. During this time of year, prevailing winds are generally from the west. During the calmer part of the year, from July to February, the winds are generally from the north. Given prevailing wind patterns, the calmer part of the year aligns with the months of driest precipitation; during this time, prevailing winds are blowing from the north.

Implementation of the proposed project would not change prevailing winds. However, wildfires and fire-related air pollution hazards that could originate in the EIR Study Area could be spread by prevailing winds. Figure 4.18-1 shows that the EIR Study Area includes land within an SRA Moderate Fire Hazard Severity Zone, as well as in LRA Moderate and High Fire Hazard Severity Zones. Figure 4.18-2 shows that nearly half of the EIR Study area is within the WUI. Of particular concern would be a wildfire during the dry season that spread due to prevailing winds toward the adjacent cities and SRA-designated areas.

Section 4.18.1.1, Regulatory Framework, describes plans, policies, regulations, and procedures that help to reduce wildfire risks. The Marin CWPP, the Local Wildfire Prevention and Mitigation Initiative, and Marin Wildfire Prevention Authority would reduce wildfire hazards on a regional scale. Implementation of the proposed project and compliance with the San Rafael LHMP and the San Rafael WPPAP would reduce wildfire hazards to structures, residents, and businesses. SRMC Chapter 4.12, Wildland-Urban Interface, Vegetation Management Standards, would further reduce the risk of wildfire through defensible space standards. The proposed project would incorporate the goals, policies, and programs listed earlier in Impact Discussion FIRE-1, earlier in Impact Discussion FIRE-2, and below in Impact Discussion FIRE-3, which would reduce the risk of wildfire hazards in the EIR Study Area.

In addition, the Bay Area Air Quality Management District offers air quality alerts, advisories, and forecasts by email through <http://baaqmdsparetheair.enviroflash.info/>. The district also maintains an interactive online map to view current air quality conditions in the region.

The proposed Conservation and Climate Change (C) and Equity, Diversity, and Inclusion (EDI) Elements contain goals, policies, and programs that require local planning and development decisions to consider air quality impacts as a result of wildfire. The following General Plan goals, policies, and programs would serve to minimize potential adverse impacts on air quality due to wildfires:

**Goal C-2: Clean Air.** Reduce air pollution to improve environmental quality and protect public health.

- **Policy C-2.4: Particulate Matter Pollution Reduction.** Promote the reduction of particulate matter from roads, parking lots, construction sites, agricultural lands, wildfires, and other sources.
  - **Program C-2.4B: Wildfire Smoke.** Support efforts to reduce health hazards associated from wildfire smoke, such as limits on outdoor activities, access to respirators and air filtration systems, access to clean air refuge centers, and public education.

**Goal EDI-2: Healthy Communities and Environmental Justice.** Support public health and wellness through community design in all parts of the city.

- **Policy EDI-2.3: Community Health.** Increase community awareness about best practices for maintaining physical and mental health. Incorporate such practices in City-sponsored activities and programs.
  - **Program EDI-2.3C: Municipal Code Review.** Periodically evaluate City codes and ordinances for their impact on health, including provisions for tobacco, vaping, and smoke-free multi-family housing; standards for indoor air quality; and HVAC systems able to sustain safe living conditions during wildfires, power outages, and extreme weather events.

Prevailing regulatory requirements and policies, in addition to air quality response programs, would minimize the exposure of people to a significant risk of loss, injury, or death due to prevailing winds, and impacts would be *less than significant*.

### Vegetation

Nearly 38 percent of the EIR Study Area consists of urban and barren vegetation communities. The dominant nonurban vegetation types within the remaining 62 percent of the EIR Study Area consist of oak woodland, annual grassland, and hardwood-conifer. Grassland, oak woodland, and hardwood-conifer fires are easily ignited, and during late summer and fall, natural vegetation is extremely flammable, and wildfires are serious hazards in areas with extensive, unirrigated vegetation.

Although the EIR Study Area largely consists of nonurban vegetation, the proposed project would introduce management activities that would reduce wildfire hazards. These vegetation management measures would include those detailed in Impact Discussion FIRE-3, below. Additionally, new development is expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels, in the form of infill/intensification on sites already developed and/or underutilized and/or in close proximity to existing residential and residential-serving development.

Furthermore, the San Rafael LHMP and San Rafael WPPAP include a comprehensive and cohesive set of actions to reducing wildfire risks within the EIR Study Area, as shown in Table 4.18-1 and Table 4.18-2, above. These actions include maintaining and expanding fuel breaks, applying vegetation and defensible space standards throughout the EIR Study Area, reducing the likelihood of ignition of undeveloped land, and reducing fuels along roadways. Prevailing regulatory requirements and policies, in addition to vegetation management policies and programs in the proposed project, would minimize the exposure of people to a significant risk of loss, injury, or death due to vegetation characteristics, and impacts would be *less than significant*.

**Significance without Mitigation:** Less than significant.

### Downtown Precise Plan

As discussed in Chapter 3, Project Description, of this Draft EIR, roughly half of the potential future development in San Rafael throughout the horizon year of the General Plan 2040 would occur in the

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Downtown Precise Plan Area. Development would consist of infill or redevelopment in fully urbanized areas.

### *Slope*

As discussed in Section 4.18.1.2, Existing Conditions, the Downtown Precise Plan Area is primarily gently sloped. Similar to the rest of the EIR Study Area, development in the Downtown Precise Plan Area would require developers to submit grading plans and construction drawings, which would be reviewed and approved by City staff based on the California Building Code and California Fire Code, in addition to complying with general plan goals, policies, and programs described in Impact Discussion FIRE-1 and earlier in Impact Discussion FIRE-2.

New slopes created by potential future development would be minor and would not be expected to exacerbate the spread of wildfires within or beyond the Downtown Precise Plan Area because of the built-out and urban character of the Downtown Precise Plan Area. Future development that may occur on sloped land in the Downtown Precise Plan Area is limited to the northern edge of the Downtown Precise Plan Area. Such development is not expected to change the overall characteristics of the Downtown Precise Plan Area. Such development would not create new slopes in flat areas of the Downtown Precise Plan Area. Therefore, significant risk of loss, injury, or death due to slopes in the Downtown Precise Plan Area would be *less than significant*.

### *Prevailing Winds*

As discussed above, implementation of the proposed project, including the Downtown Precise Plan, would not change prevailing winds. However, wildfires and fire-related air pollution hazards that could originate in the greater EIR Study Area could be spread by prevailing winds and could reach the Downtown Precise Plan Area. Figure 4.18-3 shows that the Downtown Precise Plan Area has a small portion of land on the northern boundary that is located in LRA Moderate and High Fire Hazard Severity Zones. Figure 4.18-4 shows that only a small portion of the Downtown Precise Plan Area, particularly in the north, west, and southwest portions, are within the WUI. There is additional WUI land to the northeast and south that touch or are within one mile of the Downtown Precise Plan Area.

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to wildfires. Same as potential future development in the remainder of the city, the potential future development in the Downtown Precise Plan Area would be required to comply with adopted local, regional, and State plans and regulations addressing wildfires. Therefore, the impacts described for the proposed General Plan 2040 would also apply in the Downtown Precise Plan Area. Accordingly, these regulations, in addition to the General Plan 2040 air quality response programs, would minimize the exposure of people in the Downtown Precise Plan Area to a significant risk of loss, injury, or death due to prevailing winds, and impacts would be *less than significant*.

### *Vegetation*

The Downtown Precise Plan Area is characterized as built-out urban land that does not contain much natural vegetation. San Rafael Hill to the north of the Downtown Precise Plan Area does contain natural vegetation; however, that land is outside of the Downtown Precise Plan Area. Adoption of the proposed

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project and implementation of the Downtown Precise Plan would incorporate the same plans and policies as General Plan 2040, including provisions in the San Rafael LHMP and San Rafael WPPAP, as well as goals, policies, and programs in the General Plan 2040. Such regulatory requirements and policies, in addition to vegetation management policies and programs, would minimize the exposure of people to a significant risk of loss, injury, or death due to vegetation characteristics, and impacts would be *less than significant*.

As determined in Impact Discussion FIRE-1, potential future development in the Downtown Precise Plan Area would be required to comply with the local, regional, and State plans and regulations adopted to ensure that proposed development would not—due to slope, prevailing winds, or vegetation—expose project occupants to pollutant concentrations from a wildfire, and the impacts would be *less than significant*.

**Significance without Mitigation:** Less than significant.

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**FIRE-3**                    **Implementation of the proposed project could require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) but would not exacerbate fire risk or result in temporary or ongoing impacts to the environment.**

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### General Plan 2040

As discussed in Chapter 3, Project Description, of this Draft EIR, roughly half the projected buildout in San Rafael would occur outside of the Downtown Precise Plan Area. As described in Impact Discussion FIRE-2, the EIR Study Area includes land within an SRA Moderate Fire Hazard Severity Zone and LRA Moderate and High Fire Hazard Severity Zones. Such development is expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites already developed and/or underutilized and/or in close proximity to existing residential and residential-serving development, and would utilize existing infrastructure. Existing infrastructure in San Rafael, including roadways, emergency water sources, water infrastructure, power lines, and other utilities, are capable of accommodating an increase in development and population. Therefore, the proposed project does not propose installation of large-scale new infrastructure as part of General Plan 2040 buildout. However, the proposed project does include goals, policies, and programs that require the maintenance of infrastructure such as fuel breaks in the EIR Study Area, most of which are included to ensure achievement of the WPPAP objectives. Previously listed goals, policies, and programs that outline the creation and maintenance of fuel breaks include Goal S-4, Program S-4.1D, and Program 4.1G, along with Program C-1.14D, Wildfire Action Plan Implementation, which would implement fuel break objectives of the WPPAP detailed in Impact Discussion FIRE-2.

The proposed Community Services and Infrastructure (CSI) Element contains goals, policies, and programs that require local planning and development decisions to consider infrastructure maintenance to reduce the risk and impact of wildfires. The following General Plan policy and programs would serve to minimize potential adverse impacts related to wildfire:

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**Goal CSI-4: Reliable, Efficiently Managed Infrastructure.** Support reliable, cost-effective, well-maintained, safe and resilient infrastructure and utility services.

- **Policy CSI-4.14: Utility Undergrounding.** Continue to pursue undergrounding of overhead utility lines, and support maintenance and replacement programs to reduce wildfire hazards.
  - **Program CSI-4.14A: Funding for Undergrounding.** Explore funding opportunities and financing mechanisms to accelerate the undergrounding of utilities, including Rule 20A and B funds, private funding, and assessment districts.
  - **Program CSI-4.14B: Prioritizing of Undergrounding Projects.** Develop a process to prioritize utility undergrounding projects. Among the factors to be considered are aesthetics, visibility, fire hazards, and vulnerability to flooding and sea level rise.
  - **Program CSI-4.8C: Water Pressure and Storage.** Work with MMWD to ensure that water pressure and storage remains adequate for fire-fighting, and to implement standards for new development that ensure adequate water flow.

General Plan 2040 does not propose the installation of large infrastructure projects; however, several policies and programs encourage the City to pursue upgrades and maintenance of such infrastructure. New development would, however, require minor alterations of utility systems to connect water, natural gas, and sewer line piping to new buildings and facilities. Although General Plan 2040 does not anticipate such infrastructure being needed, such infrastructure, if necessary, would be required to comply with the adopted State and local regulations to mitigate the impact of infrastructure on the environment. Furthermore, any development or redevelopment within a fire hazard severity zone and the WUI would be required to comply with building design standards in the California Building Code, Chapter 49 of the California Fire Code, the CPUC's fire regulations for electric utilities, and the San Rafael WPPAP, which would reduce the risk of wildfire due to installation and maintenance of infrastructure. Therefore, the impact would be *less than significant*.

**Significance without Mitigation:** Less than significant.

### Downtown Precise Plan

The Downtown Precise Plan Area is designated as urban, built-up land, with Moderate and High Fire Hazard Severity Zones located to the north in the WUI. Potential future development in the Downtown Precise Plan Area would not require the installation of new roads, emergency water sources, or power lines, which already exist in the Downtown Precise Plan Area. Similar to development outside of the Downtown Precise Plan Area, new development would require minor alterations of utility systems to connect water, natural gas, and sewer line piping to new buildings and facilities. Such new development would be required to comply with the State regulations and the General Plan 2040 goals, policies, and programs related to the installation and maintenance of infrastructure, and the impact would be *less than significant*.

**Significance without Mitigation:** Less than significant.



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**FIRE-4                      Implementation of the proposed project could expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, postfire slope instability, or drainage changes.**

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Catastrophic wildfire can create favorable conditions for other hazards, such as flooding and landslides during the rainy season. A project would result in a significant impact if—due to slopes, drainage patterns, or post-fire slope instability—it would expose people or structures to significant risks from landslides, debris flows, or flooding.

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As discussed in Chapter 4.7, Geology and Soils, of this Draft EIR, the EIR Study Area contains areas susceptible to landslides and debris flows. The EIR Study Area varies, with rolling hills, valleys, and ridges that trend from the northwest to the southeast. Landslides have the potential to occur in the EIR Study Area, most notably on the steeper slopes on the western edge of the EIR Study Area, in addition to hilly areas surrounding China Camp State Park, Boyd Park, and Harry Barbier Memorial Park. There are both residential and commercial structures surrounding these landslide-prone areas in the EIR Study Area. With respect to flooding, and as described in Chapter 4.10, Hydrology and Water Quality, of this Draft EIR, there are several areas in the EIR Study Area that are within the 100-year and 500-year floodplain, primarily along the eastern edge and in the central area of the EIR Study Area. In the event that a catastrophic wildfire were to occur in these areas with existing landslide and flooding susceptibility, the risk of such a hazard could be exacerbated post-fire. In addition, areas without an existing risk of landslide or flooding hazards that abut areas with risk may become susceptible to such hazards in the wake of a catastrophic wildfire.

While potential future development as a result of the proposed project is primarily expected to occur in existing urban areas and would be concentrated on a limited number of vacant parcels and in the form of infill/intensification on sites already developed and/or underutilized and/or in close proximity to existing development, future projects could occur in areas either already prone to landslide or flooding hazards, or in areas which could be susceptible to landslide or flooding hazards post-fire. Therefore, potential future development in the EIR Study Area could contribute to postfire slope instability or drainage changes upstream. In the event that development is proposed downslope, the development proposal would have to comply with State and local regulations, such as the California Building Code and the SRMC building codes. For example, Section 1803 of the 2019 California Building Code requires a geotechnical investigation that must assess existing landslide susceptibility on a project site. Geotechnical review is also required as described in Section 4.18.1.1, Regulatory Framework, and as outlined in Appendix F, Geotechnical Review Matrix, of the proposed General Plan 2040. Recommendations of the geotechnical investigation, as they pertain to structural design and construction recommendations for earthwork, grading, slopes, foundations, pavements, and other necessary geologic considerations, must be incorporated into the design and construction of the development. Further, as identified in Impact Discussion FIRE-1, development in the EIR Study Area must also comply with best management practices regarding wildfire prevention, action, and recovery as outlined in the Marin ERP, the Marin EOP, the SRMC, the LHMP, and the WPPAP. All future development, regardless of the location, is required to comply with

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adopted local, regional, and State plans and regulations addressing wildfire prevention which would minimize risks of potential wildfires and post-fire hazards.

In addition, the National Resource Conservation Service's Emergency Watershed Protection program from the United States Department of Agriculture, exists to provide emergency technical and financial assistance to help local communities relieve imminent threats to life and property caused by floods, fires, windstorms and other natural disasters that impair a watershed. Standard practices of the Emergency Watershed Protection program include undertaking post-disaster emergency measures for runoff retardation and soil erosion prevention to safeguard lives and property from floods and the products of erosion on any watershed whenever a wildfire causes or has caused a sudden impairment of the watershed. Emergency Watershed Protection program funds address erosion related watershed impairments by supporting activities such as removing debris from stream channels, road culverts, and bridges; reshaping and protecting eroded banks; correcting damaged drainage facilities; repairing levees and structures; and reseeding damaged areas to establish vegetative cover on critically eroding lands.<sup>49</sup>

The primary purpose of the wildfire hazard policies discussed in this chapter, prevailing regulatory requirements, and the National Resource Conservation Service's Emergency Watershed Protection program, is to minimize risks from downslope or downstream flooding or landslides as a result of postfire slope instability. As such, compliance with these policies and regulatory requirements would ensure impacts from postfire instability would be *less than significant*.

**Significance without Mitigation:** Less than significant.

### **Downtown Precise Plan**

With respect to flooding, and as described in Chapter 4.10, Hydrology and Water Quality, of this Draft EIR, the majority of the Downtown Precise Plan Area is within the 100-year and 500-year floodplain, in the San Rafael Creek Watershed. This watershed begins in the surrounding mountain areas, which are within Moderate to High Fire Hazard Severity Zones, and drains down into the San Rafael Creek. The Downtown Precise Plan is not anticipated to create new slopes or be located downslope in such a manner that poses a risk to people or structures. Even though the Downtown Precise Plan Area does not have an existing risk of landslide hazards, it does abut areas with landslide risks (Boyd Memorial Park) that may become susceptible to such hazards in the wake of a catastrophic wildfire.

The proposed Downtown Precise Plan has no specific policies, and the Downtown Code has no specific regulations related to wildfires and post-wildfire hazards. Implementation of the Downtown Precise Plan is required to comply with prevailing regulatory requirements to minimize risks from downslope or downstream landslides or flooding as a result of postfire slope instability. Therefore, the impacts described for the proposed General Plan 2040 would also apply to Downtown Precise Plan and the impact from postfire instability would be *less than significant*.

**Significance without Mitigation:** Less than significant.

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<sup>49</sup> Natural Resources Conservation Service, Disaster Recovery Assistance, <https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/?cid=nrcseprd1361073>, accessed March 24, 2020.

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**FIRE-5 Implementation of the proposed project could result in a cumulatively considerable impact to wildfire impacts.**

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As discussed in Chapter 4, Environmental Analysis, of this Draft EIR, the cumulative setting includes growth within the EIR Study Area in combination with projected growth in the rest of Marin County and the surrounding region. Future development under the proposed project would not interfere with implementation of emergency response plans or result in significant wildfire-related impacts. Potential impacts associated with wildfires would be reduced through compliance with proposed policies and existing local, regional, and State regulations. Cumulative development in adjacent jurisdictions and unincorporated Marin County would be subject to the same State and regional regulations, as well as regional safety plans, such as the Marin CWPP and FireSafe Marin’s Local Wildfire Prevention and Mitigation Initiative.

With respect to the implementation of the proposed project, wildfire hazards and the WUI are addressed in the goals, policies, and programs detailed in Impact Discussion FIRE-1, FIRE-2, and FIRE-3. Future development in the WUI would be required to incorporate fuel breaks, fire-resistant landscaping, adequate vegetation clearances around structures, and other vegetation management measures in the EIR Study Area. Additionally, development review would occur for each proposed project. Cumulative projects would be required to comply with the requirements of the California Building Code Chapter 7A, California Fire Code Chapter 49, PRC Sections 4291 et seq., and the SRA Fire Safe regulations for areas in the SRA. Furthermore, overhead power lines would be required to comply with the CPUC fire safety regulations. Although not required by CEQA, the proposed project includes policies and programs, detailed below, that would enhance public education programs to train the community in the EIR Study Area to prepare for and respond to emergency situations such as wildfire, which would increase regional education and, therefore, cumulative preparedness.

**Goal S-6: Emergency Preparedness.** Improve disaster preparedness, resiliency, response, and recovery.

- **Policy S-6.2: Neighborhood Disaster Preparedness Programs.** Encourage educational outreach to promote awareness and readiness among residents regarding disaster preparedness. Outreach and education should be targeted for each hazard type and risk area, including climate-related incidents. Community involvement is an essential part of resilience and recovery, and residents play an important role in disaster response.
  - **Program S-6.2A: Educational and Training Programs.** Support educational and training programs through the Police and Fire Departments and community-based organizations. These Programs include Community Emergency Response Teams (CERT), Citizens Police Academy, Neighborhood Response Groups (NRGs), and Voluntary Organizations Active in Disaster (VOAD) among others. Neighborhood teams should supplement City resources during emergency situations and can assist in disaster preparedness and mitigation efforts.
  - **Program S-6.2E: Disaster Management Drills.** Conduct emergency response drills to test the effectiveness of local procedures, including evacuation and emergency shelter drills in neighborhoods prone to flooding and wildfire.

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Compliance with these requirements would reduce cumulative impacts related to wildfire hazards and emergency response. Accordingly, the proposed project would not cumulatively contribute to a cumulatively significant impact to wildfire impacts. The proposed project would not contribute to a cumulative increase in wildland fire hazards in the immediate vicinity of the Downtown Precise Plan Area or greater EIR Study Area, and the potential for cumulative impacts associated with wildfire hazards would be *less than significant*.

**Significance without Mitigation:** Less than significant.