

4.19 WILDFIRE

This section describes the existing setting and wildfire risks in the City of Lake Forest (City), which is in the south-central area of Orange County (County). This section evaluates the potential impacts of the proposed Project with regard to wildfire and post-wildfire environmental risks. This section is based on:

- Federal, State, and local policies;
- City of Lake Forest General Plan:
 - Safety and Noise Element (1994a);
 - Public Facilities and Growth Management Element (1994b)
- City of Lake Forest 2040 General Plan Existing Conditions Report, Chapter 8: Hazards, Safety, and Noise (2018a)
- County of Orange and Orange County Fire Authority (OCFA) *Local Hazard Mitigation Plan* (2015);
- California Department of Forestry and Fire Protection (CAL FIRE) fire hazard severity zone (FHSZ) maps (2012b);
- California Department of Conservation maps (2015);
- *Preliminary Hydrology Analysis* (Hunsaker & Associates 2019); and
- *Geotechnical Evaluation of Proposed Residential and School Site Development* (NMG Geotechnical 2017).

4.19.1 Scoping Process

The City received 28 comment letters during the public review period of the Initial Study/Notice of Preparation (IS/NOP). For copies of the IS/NOP comment letters, refer to Appendix A of this Environmental Impact Report (EIR). One letter from OCFA included comments related to wildfire. The letter from OCFA (July 31, 2018) suggested that the significance conclusion in the Hazards and Hazardous Materials section of the IS/NOP related to wildland fire hazards be revised to reflect that a Fuel Modification Conceptual Plan and a Fire Protection Plan with Ember Mitigation have been approved for the proposed Project. Since the IS/NOP was circulated in July 2018, the City's Local Guidelines for Implementing CEQA (2017) (which is more commonly referred to as the Local CEQA Guidelines) have been updated to be consistent with the revised State CEQA Guidelines (2019). Among other changes, the revised Local CEQA Guidelines replaced the Hazards and Hazardous Materials threshold question related to wildfire that OCFA commented on with four different questions regarding wildfire. Because none of the following thresholds related to wildfire were addressed in the IS/NOP, they will be addressed in the following analysis.

4.19.2 Existing Environmental Setting

A wildfire is a nonstructural fire that occurs in vegetative fuels. Wildfire generally does not include prescribed or controlled fires set by firefighters to manage fuel loads in fire-prone landscapes. Wildfires can occur in undeveloped areas and spread to urban areas where the landscape and

structures are not designed and maintained to be ignition resistant. A wildland-urban interface (or WUI) is an area where urban development is located in proximity to open space or “wildland” areas. The potential for wildland fires represents a hazard where development is adjacent to open space or within close proximity to wildland fuels or designated FHSZ. Steep hillsides and varied topography can also contribute to the risk of wildland fires. Fires that occur in WUI areas may affect natural resources as well as life and property.

Wildfire ignition sources may include: lightning, improperly managed camp fires, cigarettes, arson, sparks from automobiles, lawnmowers, and maintenance equipment, and other sources. Wildfire spread is often dramatically exacerbated when prolonged hot and dry weather conditions are coupled with strong wind events. In Southern California, wildfire season has historically extended from late summer through fall, when most vegetative fuels are dried out and Santa Ana wind events are most common. However, climate change has increasingly led to conditions that are conducive to wildfire spread throughout much of the year. Key factors in assessing wildland fire risk include potential ignition sources, building materials and design, community design, structural density, the presence of slopes and vegetative fuels, fire occurrence and weather, as well as occurrences of drought (County of Orange & OCFA 2015).

CAL FIRE has mapped areas of significant fire hazards in the State through its Fire and Resources Assessment Program (FRAP). These maps place areas of California into different FHSZ, based on a hazard scoring system using subjective criteria for fuels, fire history, terrain influences, housing density, and occurrence of severe fire weather where urban conflagration could result in catastrophic losses. As part of this mapping system, land where CAL FIRE is responsible for wildland fire protection and generally located in unincorporated areas is classified as a State Responsibility Area (SRA). Where local fire protection agencies (e.g., OCFA) are responsible for wildfire protection, the land is classified as a Local Responsibility Area (LRA). CAL FIRE currently identifies the Project site as an LRA. In addition to establishing local or State responsibility for wildfire protection in a specific area, CAL FIRE designates areas as very high fire hazard severity zones (VHFHSZ) or non-VHFHSZ.

According to the CAL FIRE Very High Fire Hazard Severity Zone Maps for the Orange County Region, the Project site is designated as a non-VHFHSZ (CAL FIRE 2012b). The Project site is currently being used as a wholesale plant nursery. Although the plants being grown on the Project site are generally combustible, the Orange County *Local Hazard Mitigation Plan* (2015) identifies the Project site as having a moderate fuel hazard ranking (County of Orange & OCFA 2015). The areas immediately surrounding the Project site are developed with commercial, industrial, and residential uses; however, a finger of undeveloped land extends from the Whiting Ranch Wilderness Park to the center median of State Route 241 (SR-241), approximately 0.2 mile (mi) northeast of the Project site. This undeveloped land is designated as a VHFHSZ. The foothills of the Santa Ana Mountains, which feature steep slopes, combustible vegetation, and regrowth from recent wildfires, are located approximately 1.3 mi north of the Project site. This area, which includes portions of Whiting Ranch, Foothill Ranch, and Portola Hills, is designated as a VHFHSZ, as identified by CAL FIRE.¹ The foothills

¹ California Department of Forestry and Fire. FHSZ Viewer. Website: <https://egis.fire.ca.gov/FHSZ/> (accessed August 7, 2019).

of the Santa Ana Mountains to the northeast of the Project site are designated as a High FHSZ in an SRA.¹

4.19.3 Regulatory Setting

4.19.3.1 Federal Regulations

National Incident Management System (NIMS). The NIMS provides a systematic, proactive approach to guide government agencies, nongovernmental organizations, and the private sector to work together to prevent, report to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life and property harm to the environment. The City participates in NIMS, which improves its ability to prepare for and respond to potential incidents and hazard scenarios.

4.19.3.2 State Regulations

CAL FIRE and Resources Assessment Program. CAL FIRE publishes maps that predict the threat of fire for each county within the State. LRAs, SRAs, or Federal Responsibility Areas (FRAs) are classified as either VHFHSZ or non-VHFHSZ based on factors including fuel availability, topography, fire history, and climate. The 2012 Strategic Fire Plan for California was generated by CAL FIRE to provide guidelines and objectives in order to account for associated fire impacts.

California Fire Code (CFC). Chapter 8.24.010 of the City of Lake Forest Municipal Code adopts the CFC, which is updated every 3 years. The CFC includes regulations for emergency planning, fire service features, fire protection systems, hazardous materials, fire flow requirements, and fire hydrant locations and distribution. Several 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 wildlife hazard areas.

California Strategic Fire Plan. This statewide plan is a strategic document that guides fire policy for much of California. The plan is aimed at reducing wildfire risk through pre-fire mitigation efforts tailored to local areas through assessments of fuels, hazards, and risks.

California State Hazard Mitigation Plan. The purpose of the State Hazard Mitigation Plan (SHMP) is to significantly reduce deaths, injuries, and other losses attributed to natural- and human-caused hazards in California. The SHMP provides guidance for hazard mitigation activities emphasizing partnerships among local, State, and federal agencies as well as the private sector.

California Government Code. California Government Code §51175 defines VHFHSZ and designates lands considered by the State to be a very high fire hazard.

California Government Code §51189 directs the Office of the State Fire Marshal to create building standards for wildland fire resistance. The code includes measures that increase the likelihood of a

¹ California Department of Forestry and Fire. FHSZ Viewer. Website: <https://egis.fire.ca.gov/FHSZ/> (accessed August 7, 2019).

structure withstanding intrusion by fire (e.g., building design and construction requirements that use fire-resistant building materials) and provides protection of structure projections (e.g., porches, decks, balconies, and eaves) and structure openings (e.g., attics, eave vents, and windows).

California Public Resources Code (PRC). The State's Fire Safe Regulations are set forth in PRC §4290, which include the establishment of SRAs. PRC §4291 sets forth defensible space requirements, which are applicable to anyone that ...owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush covered lands, grass-covered lands, or land that is covered with flammable material (§4291(a)).

Assembly Bill 337. Per Assembly Bill (AB) 337, local fire prevention authorities and CAL FIRE are required to identify VHFHSZ in LRAs. Standards related to brush clearance and the use of fire resistant materials in FHSZ are also established.

California Code of Regulations (CCR).

CCR Title 8 (Industrial Relations). In accordance with CCR Title 8 §1270 and §6773 (Fire Prevention, and Fire Protection and Fire Equipment), the California Occupational Safety and Health Administration (Cal/OSHA) establishes fire suppression service standards. The standards range from fire hose size requirements to the design of emergency access roads.

CCR Title 14 (Natural Resources). Division 1.5 (Department of Forestry and Fire Protection), Title 14 of the CCR establishes a variety of wildfire preparedness, prevention, and response regulations.

CCR Title 19 (Public Safety). Title 19 of the CCR establishes a variety of emergency fire response, fire prevention, and construction and construction materials standards.

CCR Title 24 (California Building Standards Code). The CFC is set forth in Part 9 of the Building Standards Code. The CFC, which is pre-assembled with the International Fire Code (IFC) by the International Code Council (ICC), contains fire-safety building standards referenced in other parts of Title 24.

California Health and Safety Code §13000 et seq. and California Building Code (CBC). State fire regulations are set forth in §13000 et seq. of the California Health and Safety Code, which is divided into "Fires and Fire Protection" and "Buildings Used by the Public." The regulations provide for the enforcement of the CBC and mandate the abatement of fire hazards.

The California Health and Safety Code establishes broadly applicable regulations, such as standards for buildings and fire protection devices, in addition to regulations for specific land uses, such as childcare facilities and high-rise structures.

California Health and Safety Code Division 11 (Explosives). Division 11 of the California Health and Safety Code establishes regulations related to a variety of explosive substances and devices, including high explosives and fireworks. Section 12000 et seq. establishes regulations related to

explosives and explosive devices, including permitting, handling, storage, and transport (in quantities greater than 1,000 pounds).

California Health and Safety Code Division 12.5 (Buildings Used by the Public). Division 12.5 establishes requirements for buildings used by the public, including essential services buildings, earthquake hazard mitigation technologies, school buildings, and post-secondary buildings.

California Residential Code §R337. Section R337 establishes minimum standards for the protection of life and property by increasing the ability of a building located in any FHSZ within an SRA or any WUI Fire Area to resist the intrusion of flame or burning embers projected by a vegetation fire and contributes to a systematic reduction in conflagration losses. This section regulates materials and construction methods for exteriors susceptible to wildfire exposure.

California Building Code (CBC), Chapter 7A. Chapter 7A applies to building materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a WUI Fire Area. This section of the CBC establishes minimum standards for features such as fire-retardant-treated wood and wood shingles, surface treatment protection, ignition-resistant construction, roof coverings and gutters, vents, exterior walls and coverings, exterior porch ceilings, underfloor protection, exterior windows, skylights, and doors, decking, and accessory structures.

Executive Order N-04-19. On January 9, 2019, Governor Newsom announced Executive Order (EO) N-04-19, which requires State agencies to identify innovative and sustainable solutions to address the State's wildfire crisis, such as (e.g., upgraded fire detection technology).

Executive Order N-05-19. On January 9, 2019, Governor Newsom also announced EO N-05-19, which requires CAL FIRE and other State agencies to compile policy and regulatory recommendations concerning wildfire mitigation, emphasizing environmental sustainability and public health. EO N-05-19 requires the incorporation of socioeconomic analysis when conducting risk management of wildfires and mandates that agencies identify geographic areas with populations that are more vulnerable to the impacts of wildfires.

4.19.3.3 Regional Regulations

OCFA Fire Master Plans for Commercial & Residential Development, Guideline B-09. Guideline B-09 of the 2017 Fire Master Plans for Commercial & Residential Development establishes general guidelines pertaining to the installation and maintenance of fire department access roadways, access walkways to and around buildings, and hydrant quantity and placement as required by the 2016 CFC and CBC, and as amended by local ordinance. The proper installation and maintenance of fire access roadways, the proper sitting of hydrants, adequate water supply, and proper access to structures are essential in enabling effective emergency response and firefighting operations.

County of Orange and OCFA Local Hazard Mitigation Plan (2015). This Plan identifies risks and vulnerabilities, establishes hazard mitigation strategies, describes emergency organization, task assignments, and general procedures, and provides for coordination of response in the event of an emergency. The Plan does not identify specific emergency response or evacuation routes.

4.19.3.4 Local Regulations

Lake Forest General Plan. The City of Lake Forest General Plan Safety and Noise Element (1994a) and Public Facilities and Growth Management Element (1994b) identify goals and policies related to fire protection services. According to the Safety and Noise Element, Lake Forest is subject to both wild and urban fires. The natural vegetation in the region is highly prone to wildfire, and a fire in the adjacent Cleveland National Forest could spread to developed areas in Lake Forest. The City will reduce the potential for dangerous fires by coordinating with OCFA to implement fire hazard education, fire protection, and fuel modification programs. Goals and policies from both the Safety and Noise Element and Public Facilities and Growth Management Element are listed below.

- **Safety and Noise Element (1994):**

- Goal 4.0** Improved ability of the City to respond to natural and human-related emergencies.

- Policy 4.1** Support the development of local preparedness plans and multi-jurisdictional cooperation and communication for emergency situations.

- Goal 2.0** Protection of the community from hazards associated with aircraft overflights, hazardous materials use, fire, and ground transportation.

- Policy 2.4** Reduce the risk to the community from fire.

- Goal 1.0** Reduction in the risk to the community from hazards associated with geologic conditions, seismic activity, and flooding.

- Policy 1.1** Reduce the risk of impacts from geologic and seismic hazards.

- Policy 1.2** Protect the community from flooding hazards.

- **Public Facilities and Growth Management Element (1994):**

- Goal 3.0** Effective coordination with Orange County Fire and Orange County Sheriff's Department.

- Policy 3.1** Work closely with Orange County Fire and the Orange County Sheriff's Department in determining and meeting community needs for safety facilities and services

- Policy 3.2** Periodically evaluate level of service to ensure that Lake Forest has appropriate levels of fire, police and emergency medical services.

City of Lake Forest Municipal Code.

Title 6, Health and Sanitation (6.16 Hazardous Materials). This section discusses hazardous materials including disclosure to OCFA.

Title 7, Subdivisions (7.08.145 Fire Protection). This section discusses the requirements for subdivisions in high or extremely high hazard areas, including providing appropriate fire protection by means of fire breaks, fuel modification programs, access roads, sufficient water supply, landscaping, and open spaces.

Title 8, Buildings and Construction (8.02 California Building Code, 8.06 California Residential Code, 8.24 Fire Code). This section includes the adoption of the 2016 California Fire Code and the adoption of additional amendments.

Title 9, Planning and Zoning (9.144.070.7 Public Display of Fireworks). This section covers public firework displays, including requiring permits from OCFA or the Fire Chief.

Title 11, Peace and Safety (11.56 Fire Alarm Systems). This section covers regulations relating to fire alarm systems.

City of Lake Forest Emergency Preparedness Plan. Under State law, local governments are required to create and administer an Emergency Operations Plan (EOP) under the guidelines provided by the Federal Emergency Management Agency (FEMA). The State Office of Emergency Services (OES) adopts these emergency management guidelines for business activities in the Emergency Operations Center (EOC). City of Lake Forest Municipal Code §2.20.080 states that the Lake Forest Disaster Council is responsible for the development of the Emergency Preparedness Plan, which shall serve as the EOP and provide for the effective mobilization of the resources of the City, both public and private, to meet any condition constituting a local emergency, state of emergency, or state of war emergency.

4.19.4 Methodology

This section addresses factors that could expose people or structures to fire or post-fire flooding or landslides, risk or impair emergency response, or require installation of infrastructure that could exacerbate fire risk. Past case law supports that CEQA should evaluate a proposed project's impact on the environment (e.g., potential of a housing development to degrade water quality), rather than the environment's impact on a project (e.g., potential for an earthquake to destroy a housing development). In *California Building Industry Association v. Bay Area Air Quality Management District* (CBIA v. BAAQMD) (Supreme Court of California 2015), the CBIA challenged BAAQMD's adoption of CEQA air pollutant significance thresholds that required analysis of impacts on "new receptors" (residents and workers drawn to an area as a result of a proposed project). The California Supreme Court found that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents," except where a proposed project may exacerbate those environmental hazards or conditions that already exist. Therefore, this section will not directly focus on the risk of wildfire to the Project, rather it will address whether the Project exacerbates the risk of a natural disaster by bringing new development to vulnerable areas. The analysis is based on review of FHSZ maps, local and regional Hazard Mitigation Plans, and Project conformance to OCFA fire codes and fire plans (including a Fuel Modification Plan).

4.19.5 Thresholds of Significance

The thresholds for wildfire impacts used in this analysis are consistent with Appendix G of the State CEQA Guidelines and the City's *CEQA Significance Thresholds Guide* (2019). If the proposed Project would be located in or near SRAs or lands classified as VHFHSZ, the proposed Project may be deemed to have a significant impact with respect to wildfires if it would:

- Threshold 4.19.1: Substantially impair an adopted emergency response plan or emergency evacuation plan.**
- Threshold 4.19.2: Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.**
- Threshold 4.19.3: 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.**
- Threshold 4.19.4: 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.**

The IS/NOP was prepared prior to the revised State CEQA Guidelines (2019) and, therefore, only addressed the Project's potential environmental impacts related to wildfire in the context of exposing people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands (the Hazards and Hazardous Materials section of the IS/NOP determined that the Project would result in no impacts). Because none of the following thresholds related to wildfire were addressed in the IS/NOP, they are all addressed in the following analysis.

4.19.6 Project Impacts

Threshold 4.19.1: Would the Project impair an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. According to CAL FIRE VHFHSZ in the LRA map for Lake Forest, the Project site is in a non-VHFHSZ. The nearest VHFHSZ is located approximately 0.2 mi northeast of the Project site along Serrano Creek and terminates near the SR-241 center median. As discussed in Section 4.8.3, the Orange County Sheriff's Department and OCFA are the local agencies that would oversee emergency response and emergency evacuation at the Project site. OCFA has approved a conceptual Fire Master Plan for the Nakase Property, which identifies the proper size and location of fire suppression facilities (e.g., hydrants), adequate water supply, and fire access routes.

Construction. The Project site is near a VHFHSZ, but is not located in or near an SRA, as defined by CAL FIRE. All large construction vehicles entering and exiting the site would be guided by the use of personnel using signs and flags to direct traffic. The Project does not include any characteristics that would physically impair or otherwise interfere with emergency response or evacuation in the Project vicinity. The proposed Project may require temporary lane closures on Bake Parkway, Lake Forest Drive, and Rancho Parkway to allow for utility connections; however, temporary lane closures would be implemented consistent with the recommendations of the *California Temporary Traffic Control Handbook* (California Inter-Utility Coordinating Committee 2018). Among other things, the manual recommends early coordination with affected agencies

to ensure that emergency vehicle access is maintained. In this manner, officials can plan and respond appropriately to direct the public away from Bake Parkway, Rancho Parkway, or Lake Forest Drive, as appropriate, in the event of an emergency requiring evacuation. Therefore, construction of the proposed Project would not substantially impair an adopted emergency response plan or emergency evacuation plan. No mitigation would be required.

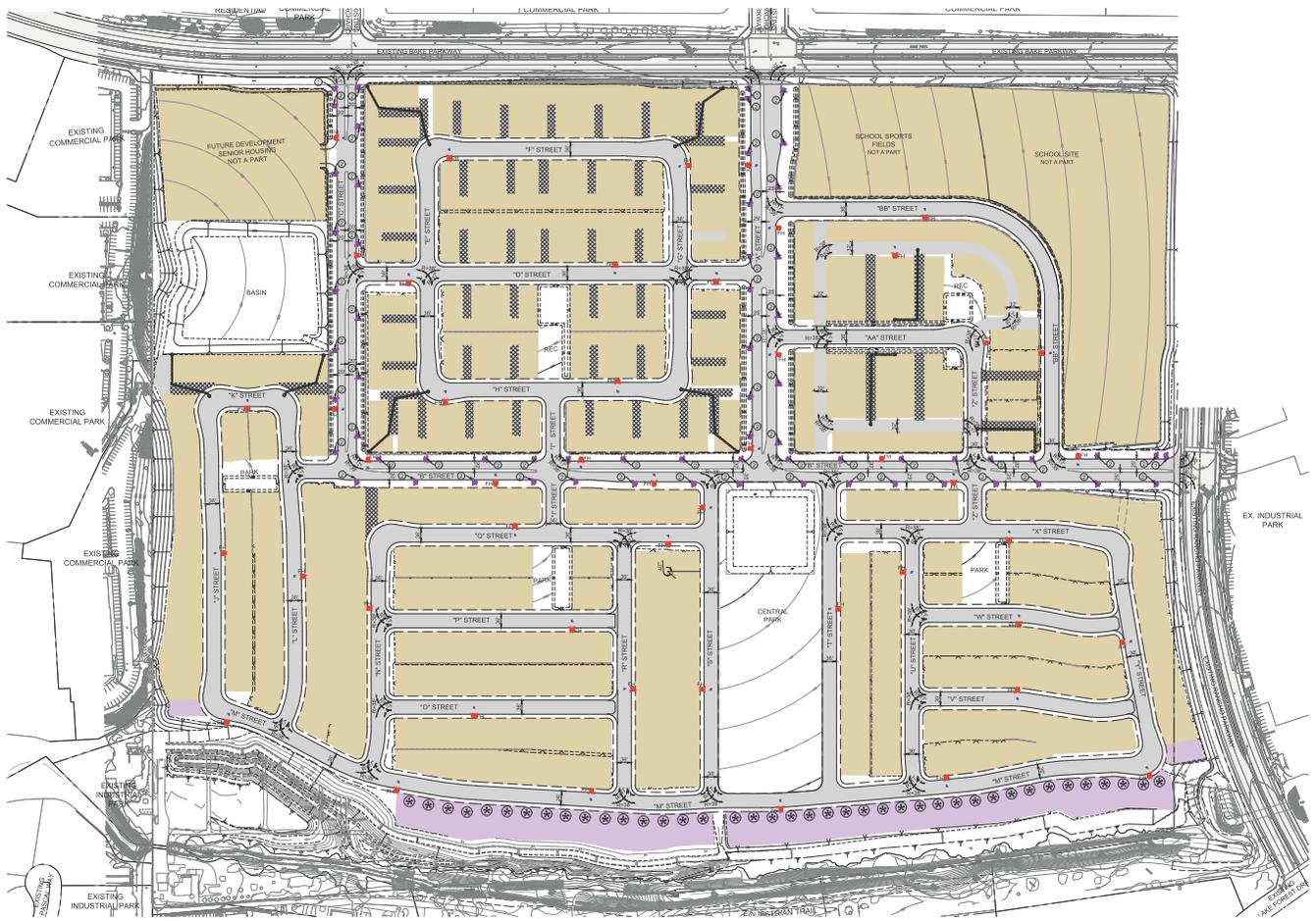
Operation. The proposed Project includes the development of up to 675 single-family residential units on approximately 61.4 acres (ac) of the Project site and up to 101 senior affordable housing units on 3.9 ac of the Project site. The proposed Project also includes parks, an internal circulation system, and an elementary school. According to the Traffic Impact Analysis (Urban Crossroads 2019), the proposed Project is not anticipated to result in any substantial traffic queuing along Bake Parkway, Lake Forest Drive, Rancho Parkway, or within the Project limits during Project operation. The City of Lake Forest General Plan Safety and Noise Element (1994a) does not officially designate any specific evacuation routes within the City. Roads that are used as response corridors and evacuation routes usually follow the most direct path to or from various parts of the community. For the Project site, the main corridors utilized would be Bake Parkway, Rancho Parkway, and Lake Forest Drive.

The proposed Project would provide emergency access via two streets along Bake Parkway and one street along Rancho Parkway. All roadways and structures within the proposed Project would be developed in accordance with City and OCFA emergency access standards. The proposed Project would also be required to comply with all applicable codes and ordinances for emergency vehicle access, which would ensure adequate access to, from, and on site for emergency vehicles.

OCFA approved a conceptual Fire Master Plan (refer to Figure 4.19.1) in February 2018, a conceptual Fire Protection Plan with Ember Mitigation (refer to Figure 4.19.2) in January 2018, and a conceptual Fuel Modification Plan (refer to Figure 4.19.3) in March 2018. The Fire Master Plan and Fire Protection Plan address specific fire prevention and access elements required by the Lake Forest Municipal Code and the CBC. The Fuel Modification Plan is required by the Lake Forest Municipal Code.

The Fire Master Plan (refer to Figure 4.19.1) establishes the proper location and adequacy of fire suppression facilities, as well as fire access routes on the Project site. The Fire Master Plan also identifies the locations of fire hydrants, a water supply for firefighting, and emergency access to residences and structures on the Project site. According to OCFA, adherence to the elements of the Fire Master Plan is directly correlated with the effectiveness of first responders, including fire and emergency medical personnel. The Area Plan for the Nakase Property meets or exceeds the requirements of OCFA to not hinder fire access and fire department and operations for the planned community. Figure 4.19.1 shows the locations of fire hydrants, fire lanes, fire hose pull distances, fire apparatus turning radii, lots that would require attic sprinkler protection, existing and proposed fire access roads, Radiant Heat Zones, and Ember Mitigation Zones on the Project site.

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LEGEND

-  PROPOSED FIRE HYDRANT
-  INDICATES BLUE REFLECTIVE FIRE HYDRANT MARKER. MARKER SHALL BE PLACED 6" FROM CENTERLINE OF STREET
-  PROPOSED FIRE LANE SIGNAGE AS INDICATED ON PLAN AND DETAILS HEREON
-  300' HOSE PULL DISTANCE - MAXIMUM SINGLE FAMILY DWELLING UNIT
-  ATTIC FIRE SPRINKLER PROTECTION: AUTOMATIC FIRE SPRINKLERS SHALL BE PROVIDED INTO THE ATTIC SPACES FOR LOTS 285 THROUGH 308 AND 448 THROUGH 433 PER THE CONCEPTUAL FUEL MODIFICATION PLAN, OCFA SR 220514
-  EXISTING FIRE DEPARTMENT ACCESS ROAD WITH ALL-WEATHER PAVED SURFACE MEETING OCFA GUIDELINE B-09 TO SUPPORT VEHICULAR LOADS OF 68,000 LBS WITH A ROAD BASE OVER SOIL COMPACTED TO A LEAST 90%
-  INDICATES O.C.F.A REQUIRED TURNING RADI: 20' WIDE PATH WITH 17' INSIDE AND 38' OUTSIDE
-  PROPOSED FIRE DEPARTMENT ACCESS ROAD WITH ALL-WEATHER PAVED SURFACE MEETING OCFA GUIDELINE B-09 TO SUPPORT VEHICULAR LOADS OF 68,000 LBS WITH A ROAD BASE OVER SOIL COMPACTED TO A LEAST 90%
-  RADIANT HEAT ZONE: LOTS INDICATED ON THIS PLAN SHALL COMPLY WITH ALL PORTIONS OF THE 2016 CALIFORNIA BUILDING CODE CHAPTER 7A AND/OR 2016 CALIFORNIA RESIDENTIAL CODE SECTION R337, AS INDICATED ON THE NAKASE RANCH FIRE PROTECTION PLAN SR220513.
-  EMBER MITIGATION ZONE: LOTS INDICATED ON THIS PLAN SHALL COMPLY WITH PORTIONS OF THE 2016 CALIFORNIA BUILDING CODE CHAPTER 7A AND/OR 2016 CALIFORNIA RESIDENTIAL CODE SECTION R337 PERTAINING TO ROOFING VENTING ONLY AS INDICATED ON THE ON THE NAKASE RANCH FIRE PROTECTION PLAN SR220513.

LSA

FIGURE 4.19.1



NO SCALE

SOURCE: Hunsaker & Associates

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Nakase Nursery/Toll Brothers
Fire Master Plan

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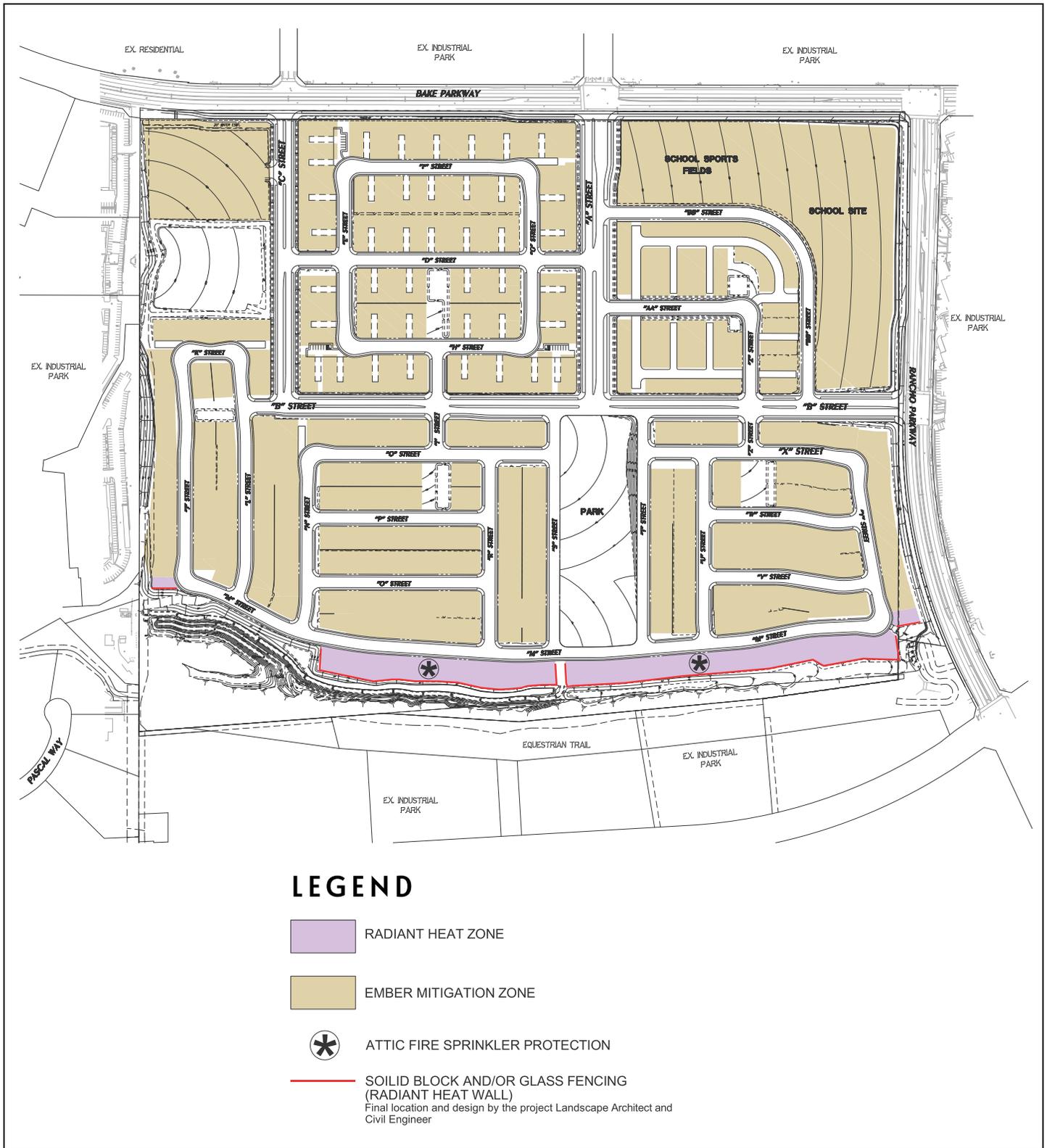


FIGURE 4.19.2

LSA



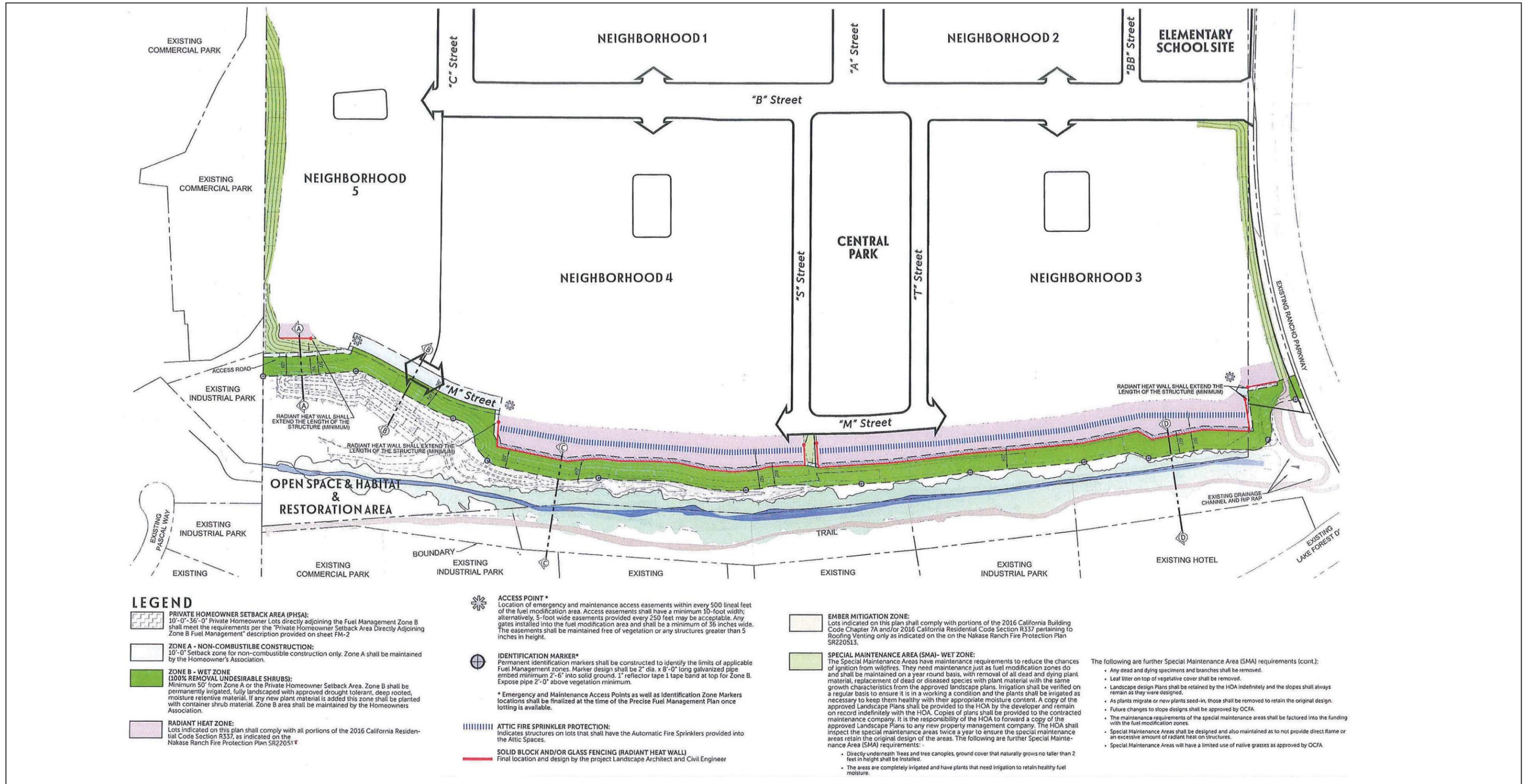
NO SCALE

SOURCE: Hunsaker & Associates

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Nakase Nursery/Toll Brothers
Fire Protection Plan

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LSA



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SOURCE: C2 Collaborative

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FIGURE 4.19.3

Nakase Nursery/Toll Brothers
Fuel Modification Plan

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The Fire Protection Plan (refer to Figure 4.19.2) identifies lots and structures that would be within the Ember Mitigation Zone and Radiant Heat Zone. The Fire Protection Plan also identifies lots and structures that would require an attic fire sprinkler system and the conceptual location of the radiant heat wall.

All three plans conform to City and OCFA standards and facilitate effective emergency response and operation. Therefore, operation of the proposed Project would not physically interfere with or impair an adopted emergency response or emergency evacuation plan. No mitigation would be required.

Threshold 4.19.2: Would the Project, 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?

Less than Significant Impact. Topography influences the movement of air, thereby directing a fire course. For example, if the percentage of uphill slope doubles, the rate of spread in wildland fire will likely double (County of Orange & OCFA 2015). Wind events magnify the risks of wildfire and have the potential to expose inhabitants of the City to elevated pollutant concentrations from a wildfire and the uncontrolled spread of wildfire from open space areas in the foothills of the Santa Ana Mountains in the northeastern areas of Lake Forest.

The proposed Project would introduce new development and a permanent population in an undeveloped area that does not contain any permanent residents. The Project site is located in a developed portion of Lake Forest. In its existing condition, the Project site is relatively flat terrain ranging in elevation from 705 to 735 feet (ft) across the northern half of the site with low points of approximately 685 ft at the southwest and southeast corners, and a ridge in the south central portion of the site ranging from 720 to 750 ft. Bake Parkway is roughly 10 ft above the northern perimeter of the Project site, and the commercial development to the south is 10 ft above to 25 ft below the southern perimeter. As previously stated, the Project site is not located in a VHFHSZ, nor is it located in an SRA. The nearest VHFHSZ is 0.2 mi northeast of the Project site. The area surrounding the Project site contains suburban development, but is characterized by hilly areas containing vegetative fuel and the increasingly steep slopes of the Santa Ana Mountains to the northeast.

The proposed Project includes the development of up to 675 single-family residential units on approximately 61.4 ac of the Project site and up to 101 senior affordable housing on 3.9 ac of the Project site. The proposed Project also includes parks, an internal circulation system, and an elementary school. As discussed in Section 4.13, Population and Housing, the Project is anticipated to result in a population increase of approximately 2,305 people. The Project proposes a residential development and school in an area characterized by existing residential and commercial uses. Adjacent roadways, including Bake Parkway, Rancho Parkway, and Lake Forest Drive, surround the Project site and would serve as fire breaks in the unlikely event of the uncontrolled spread of a wildfire. Additionally, SR-241 separates the Project site from the nearest VHFHSZ area to the northeast. With a right-of-way of more than 200 ft, it is expected that SR-241 would also serve as an

effective fire break in the unlikely event that a wildfire enters the WUI to the northeast of the Project site via the Whiting Ranch Wilderness Park.

As detailed in Regulatory Compliance Measure RCM FIRE-3, the proposed Project is required to adhere to a Fuel Modification Plan that complies with the *–Technical Design for New Construction Fuel Modification Plans and Maintenance Program*. Adherence to the Fuel Modification Plan would reduce the chance of structure ignition on the Project site in the unlikely event of a wildfire by requiring the use of fire-resistant building materials, the construction of radiant heat walls, the selection of non-combustible plant species, and the establishment of setback areas and areas that would be permanently irrigated. Furthermore, the proposed development would result in clearing, grading, paving, and revegetation according to OCFA requirements, resulting in the unavailability of vegetative/combustible materials in areas of the Project site that would be particularly vulnerable to wildfire spread from the native vegetation along Serrano Creek.

As stated previously, the Project site is not located in a VHFHSZ. Despite the VHFHSZ to the northeast of the Project site, the uncontrolled spread of a wildfire in the vicinity of the Project site is unlikely due to the existing non-combustible development and roadways, specifically SR-241 and Rancho Parkway. Impacts of downwind pollutant concentrations from a wildfire to occupants as a result of the Project would be negligible. Therefore, due to slope, prevailing winds, location, and other factors, the proposed Project would not exacerbate wildfire risks, and no mitigation is required.

Threshold 4.19.3: Would the Project 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?

No Impact. Utility and infrastructure improvements included as part of the Project are described in Section 3.0, Project Description. These improvements include the relocation of two existing water and recycled water mains and the subsequent rerouting of water facilities, the extension of sewer lines throughout the Project site, the installation of a gravity sewer system to connect to existing sewer lines in Bake Parkway, the undergrounding of existing overhead power lines along Bake Parkway, and the installation of an underground detention basin beneath the proposed Central Park to redirect runoff flows.

Although the Project would include internal on-site roadways, the proposed Project does not include any changes to public or private roadways that would exacerbate fire risk or that would result in impacts to the environment. Although utilities, including water facilities, sewer facilities, storm drain lines, and power lines would be modified and/or extended throughout the Project site, these improvements would be underground and would not exacerbate fire risk. All utility lines, pipes, utility junction boxes, and transformers will be located underground. Project design and implementation of utility improvements would be reviewed and approved by the City's Public Works Department as part of the Project approval process to ensure the proposed Project is compliant with all applicable fire codes, design standards, and regulations.

The Project site is not located in a VHFHSZ, nor is it located in or near an SRA. As discussed above, a VHFHSZ is located approximately 0.2 mi northeast of the Project site. The installation of Project-related utilities and an on-site roadway network would not exacerbate fire risk due to the Project site's location in an urban and built-out area outside of a designated fire hazard zone. Furthermore, the improved connectivity of water lines would aid in fire suppression compared to existing conditions on the Project site in the unlikely event of a wildfire. Therefore, the proposed Project would not require the installation or maintenance of associated infrastructure (e.g., roads, fuel breaks, emergency water sources, power lines, or other utilities) that would exacerbate fire risk or result in temporary or ongoing impacts to the environment. There would be no temporary or ongoing impact to the environment, and no mitigation would be required.

Threshold 4.19.4: Would the Project 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?

Less than Significant Impact.

Landslides. Landslides and other forms of mass wasting, including mud flows, debris flows, and soil slips, occur as soil moves downslope under the influence of gravity. Landslides are frequently triggered by intense rainfall or seismic shaking but can also occur as a result of erosion and downslope runoff caused by rain following a fire. According to the *Geotechnical Evaluation* (NMG Geotechnical 2017), landslides or other forms of natural slope instability do not represent a significant hazard to the Project because the site is located in a relatively flat area, and there is no evidence of landslides in the Project vicinity. Additionally, the Project site does not lie within a designated Landslide Hazard Zone (California DOC 2015). Further, as stated previously, the Project site is not located in a VHFHSZ or in or near an SRA. As discussed above in the response to Threshold 4.19.2, the Project would be required to adhere to the approved conceptual Fire Protection Plan, Fire Master Plan, and Fuel Modification Plan (Regulatory Compliance Measures RCM FIRE-1, RCM FIRE-2, and RCM FIRE-3, described further in Section 4.19.5.2). Adherence to these measures would reduce the likelihood of urban conflagration on the Project site in the unlikely event of a wildfire.

In the extremely unlikely event that a wildfire should spread to the Project site, it would not expose any on-site slopes to erosion and potential failure because, as discussed above, the Project site does not contain any steep slopes that are prone to landslide. The proposed Project would not expose people or structures to significant risks, including downslope landslides, as a result of runoff, post-fire slope instability, or drainage changes. There would be no impact to Project occupants or nearby residents or workers related to post-wildfire landslide risks, and no mitigation would be required.

Flooding. According to the FEMA Flood Hazard Map, the Project site is partially within Zone X (Area with Minimal Flood Hazard) of a 100-year floodplain and partially within a Zone AE Regulatory Floodway associated with the Serrano Creek Channel (FEMA 2018). Zone X designates areas of moderate flood risk, and are the areas between the limits of the base flood and the 0.2 percent annual chance flood, or 500-year flood. Zone AE includes areas subject to inundation by the 1 percent annual chance flood with base flood elevations determined.

Regulatory floodways are the channel of a river, and adjacent land must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation. Existing development surrounds the Serrano Creek Channel on both sides. Northeast of SR-241, Serrano Creek runs throughout a VHFHSZ (CAL FIRE 2012a). A fire northeast of the Project site could trigger increased downstream sediment movement, which could raise the elevation of potential flooding along Serrano Creek in the vicinity of the Project site. In the event that the upper Serrano Creek watershed were to experience a major fire, it is expected that the County would implement emergency Best Management Practices (BMPs) in Whiting Ranch Wilderness Park (wattles, sandbags, etc.) to limit the amount of additional sedimentation that enters Serrano Creek. Such measures would allow Serrano Creek to hydraulically convey any minor increases in sediment loads without increasing the risk of flooding on the Project site.

As discussed above in the response to Thresholds 4.19.1 and 4.19.2, the proposed Project would be required to adhere to the conceptual Fire Protection Plan, Fire Master Plan, and Fuel Modification Plan approved by OCFA. Adherence to these plans would reduce the likelihood of urban conflagration on the Project site in the unlikely event of a wildfire. In addition, according to the *Preliminary Hydrology Analysis* (Hunsaker & Associates Irvine, Inc. 2019), the Project itself will not exceed the existing peak discharge for 2-year, 25-year, or 100-year frequency storm events and will reduce the potential for flooding conditions in downstream storm drain facilities and on private property as compared to existing conditions.

In the unlikely event that a wildfire should spread to the Project site, it is not expected that the Project would contribute any additional runoff or sedimentation to Serrano Creek or other downstream drainages. This is due to the lack of steep slopes that are prone to landslide or erosion on the Project site and the fact that the Project's drainage improvements would remain intact after a major wildfire, allowing them to continue to reduce the potential for flooding conditions in downstream storm drain facilities. Therefore, downslope or downstream flooding as a result of runoff, post-fire slope instability, or drainage changes are unlikely to expose occupants or structures to significant risks. Impacts to Project occupants related to post-wildfire flooding risks would be less than significant, and no mitigation is required.

4.19.7 Cumulative Impacts

The purpose of this section is to evaluate any additional incremental impact that the proposed Project is likely to cause over and above the combined impacts of recently approved and proposed projects in the City and its sphere of influence. As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and reasonably foreseeable projects within the cumulative study area for wildfire.

For the reasons outlined above in Section 4.19.6, Project Impacts, implementation of the proposed Project would not result in a significant cumulative impact related to wildfire. The proposed Project and all related projects are required to adhere to City, State, and federal regulations designed to reduce and/or avoid impacts related to wildfire. With compliance with these regulations, cumulative impacts related to wildfire would be less than significant.

Potential impacts of the proposed Project with regard to wildfire, when combined with the impacts of past, present, and reasonably foreseeable projects in the City of Lake Forest, could contribute to a cumulatively significant impact due to the increased risk of wildfire and impacts to resources and human life as a result of wildfire. However, each development application received by the City is required to undergo environmental review pursuant to CEQA. If there were any potential for significant impacts with regard to wildfire and related risks, an investigation would be required to determine the nature and extent of the resources and identify the appropriate mitigation measures.

4.19.8 Level of Significance Prior to Mitigation

The proposed Project would result in less than significant impacts related to wildfire.

4.19.9 Regulatory Compliance Measures and Mitigation Measures

4.19.9.1 Regulatory Compliance Measures

The following Regulatory Compliance Measures are included in the proposed Project and are considered in the analysis of potential impacts related to wildfire. The City of Lake Forest considers these requirements to be mandatory; therefore, they are not mitigation measures or voluntary Project Design Features.

RCM FIRE-1: Fire Protection Plan. The Project shall adhere to Chapter 7A of the CBC and/or Section R337 of the California Residential Code (CRC). All structures in the Nakase community shall adhere to the standards from Chapter 7A of the CBC and/or Section R337 of the CRC pertaining to roofing and venting to help prevent the intrusion of embers into structures. Residences adjoining the Fuel Management Zones shall meet all applicable standards set forth in Section R337 of the CRC because those structures would have direct exposure to the native vegetation beyond the Fuel Management Zones.

RCM FIRE-2: Fire Master Plan. The Project Applicant/Developer shall develop a Fire Master Plan that identifies the proper installation and maintenance of fire access roadways, the locations of fire hydrants, a sufficient water supply, and emergency access to residences and structures within the Project site as required by the most current California Fire Code and Lake Forest Municipal Code.

RCM FIRE-3: Fuel Modification Plan. Section 8.24.030 of Chapter 8.24 of Title 8 of the Lake Forest Municipal Code requires that all new buildings to be built or installed in areas with or adjacent to land having hazardous combustible vegetation shall comply with the requirements in the edition of the OCFA *Vegetation Management Guideline – Technical Design for New Construction Fuel Modification Plans and Maintenance*

Program in use at the time of plan submittal. In addition, all new buildings to be built or installed in hazardous fire areas¹ shall comply with the following:

1. A preliminary Fuel Modification Plan shall be submitted to and approved by the Fire Code Official prior to or concurrently with the approval of the tentative map.
2. A final Fuel Modification Plan shall be submitted to and approved by the Fire Code Official prior to the issuance of the grading permit.
3. The Fuel Modification Plan shall meet the criteria set forth in the Fuel Modification Section of OCFA C-05, *Vegetation Management Guideline – Technical Design for New Construction Fuel Modification Plans and Maintenance Program*.
 - a. The fuel modification plan shall include provisions for the maintenance of the fuel modification in perpetuity.
4. The Fuel Modification Plan may be altered if conditions change. Any alterations to the fuel modification areas shall have prior approval from the Fire Code Official.
5. All elements of the Fuel Modification Plan shall be maintained in accordance with the approval plan and are subject to the enforcement process outlined in the California Fire Code.

4.19.9.2 Mitigation Measures

The proposed Project would not result in significant impacts related to wildfire, and no mitigation is required.

4.19.10 Level of Significance after Mitigation

The proposed Project would not result in significant impacts related to wildfire.

¹ Hazardous fire areas include all areas identified within California Fire Code Section 4906.2 and other areas as determined by the Fire Code Official as presenting a fire hazard due to the presence of combustible vegetation, or the proximity of the property to an area that contains combustible vegetation.