



Introduction to Public Safety

The goal of Lake Forest's Public Safety Element is to reduce the risk of death, injury, property damage, economic loss, and harm due to natural and manmade disasters. This element will view risks on both a short-term and long-term basis, and will place a special emphasis on local and regional risk factors.

The Public Safety Element closely relates to the Public Facilities Element and supports the City's Emergency Management Plan. The long-term risks associated with Climate Change are also addressed in here.

Organization of Element

The Public Safety Element will address each of the topics below as they relate to Lake Forest. The goals and policies of this element are organized around the following topics:

- *Seismic and Geologic Hazards*
- *Fire Safety*
- *Flooding*
- *Hazardous Waste and Materials*
- *Emergency Operations*
- *Noise*
- *Climate Change and Resiliency Planning*

Contents:

- + Seismic and Geologic Hazards
- + Fire Safety
- + Flooding
- + Hazardous Waste and Materials
- + Emergency Operations
- + Noise
- + Climate Change and Resiliency Planning

Related Plans, Programs, and Regulations

The following Plans, Programs, and Regulations are incorporated by reference into the City of Lake Forest's Public Safety Element.

City of Lake Forest

- **Fire Code:** The City has adopted the 2019 California Fire Code, and this is codified in Chapter 8.24 of the Municipal Code. It includes information on fuel modification zones and requirements.
- **Fire Hazard Area Requirements:** Municipal Code section 7.08.145 includes requirements for subdivisions proposed to be located in an area shown in the General Plan to be a high or very high fire hazard area. It states they shall provide appropriate fire protection by means of firebreaks, fuel modification programs, access roads, sufficient water supply, landscaping, and open spaces, and such other methods that the Fire Chief has determined will ensure the public health, safety, and welfare of the future occupants of the subdivision and the adjacent area.
- **Fire Hazard Education Programs:** The City reduces the potential for dangerous fires by coordinating with OCFA to offer a variety of educational programs including safety presentations, fire station tours, school programs, and community events.
- **Climate Vulnerability Assessment (CVA):** The City prepared a Climate Vulnerability Assessment (CVA) in 2021 to inform City policies, plans, programs, and guidance to promote effective and integrated action to safeguard from climate change. The CVA is included as Appendix A.
- **Residential Emergency Evacuation Route Analysis:** The City prepared an analysis, referred to as a White Paper, consistent with Senate Bill 99 to identify residential developments in hazard areas that do not have at least two emergency evacuation routes. The White Paper includes definitions and data sources as well as assumptions and methodology used to map the evacuation routes. The analysis identified four residential areas in high hazard zones (as defined in the White Paper) that warrant further study. While all residential developments meet City standards, the City will continue to coordinate with Orange County Fire Authority and Orange County Sheriff's Department to provide ongoing education to residents about how to safely evacuate in the event of an emergency. Law enforcement will identify the appropriate routes and assist residents leaving the City in the event an evacuation of all or part of the City is required. The White Paper is included as Appendix B to the Safety Element.

County of Orange

- **Local Hazard Mitigation Plan (LHMP):** The City is a participating jurisdiction in the County of Orange and Orange County Fire Authority Local Hazard Mitigation Plan, adopted in 2015. An update is currently being prepared and the Public Review Draft was released in May 2021. The countywide plan identifies risks posed by natural and manmade disasters including earthquake, flood, wildland and urban fire, climate change, dam failure, epidemic, drought, tsunami, and landslide, and provides measures to minimize damage from those disasters. Additionally, the City is currently under contract with a consultant and initiated the preparation of a City LHMP in early 2022.
- **Emergency Operations Plan (EOP):** The Unified County of Orange and Orange County Operational Area (OA) Emergency Operations Plan (EOP), adopted in February 2019, describes the emergency organization and provides guidance and procedures to prepare for and respond to natural, technological, conflict-related, and human-caused incidents creating situations requiring a coordinated response. The EOP includes evacuation procedures and responsibilities. The City is a member of the Orange County Operational Area and the Orange County Emergency Management Organization which both provide mutual aid to communities via the Orange County Sheriff's Department, Orange County Fire Authority and the State of California Office of Emergency Services. In the event of a large wildfire within or threatening City limits, the City could be assisted by state and federal agencies, and/or other jurisdictions.

GOAL PS-1 SEISMIC AND GEOLOGIC HAZARDS

A community that is adequately prepared for natural hazards related to landslides, geologic instability, and seismic activity.

PS-1 Policies

- PS-1.1 **Geologic Hazard Identification.** Maintain the City's geologic and seismic hazards map in concert with updates from the California Geologic Survey and local surveys and update as appropriate.
- PS-1.2 **Earthquake Protection.** Enforce State seismic design guidelines and all relevant building codes to reduce the risk of damage associated with seismic activity.
- PS-1.3 **Liquefaction.** Require special site-specific studies in areas potentially subject to liquefaction (shown in Figure 9-5 of the General Plan Existing Conditions Report) to determine the nature and extent of possible liquefaction and to identify engineering and development siting measures to permit development to occur.
- PS-1.4 **Development.** Require assessment and mitigation of hazards related to liquefaction, landslides, and flooding for new development projects or City improvement projects that are identified by the City as susceptible to these hazards.
- PS-1.5 **Risk Inventories.** Develop inventories of at-risk public buildings and infrastructure within the City of Lake Forest and evaluate potential mitigation projects to address risks, as financially feasible.
- PS-1.6 **Critical Facilities.** Require new critical infrastructure and facilities that may be built in the City to incorporate site specific seismic structural design as required by applicable building codes.
- PS-1.7 **Public Education.** Educate the public through programs and outreach materials on natural threats pertaining to Lake Forest and best practices for reducing damage and personal harm.

PS-1 Actions

- PS-1a Review development proposals to ensure compliance with California Health and Safety Code Section 19100 et seq. (Earthquake Protection Law), which requires that buildings be designed to resist stresses produced by natural forces such as earthquakes and wind.
- PS-1b Update building, zoning, and grading codes as needed to ensure adopted standards mitigate potential seismic hazards and comply with the Alquist-Priolo Act and Unreinforced Masonry Law.
- PS-1c Establish a public relations and education program to increase public awareness on potential geologic and seismic hazards in the community, their associated risks, and preparedness strategies.

GOAL PS-2 FIRE SAFETY

A City that is safe and adequately prepared for urban and wildfire emergencies.

Fire protection services in the City are provided by Division 5 of the Orange County Fire Authority (OCFA), Battalion 4. OCFA provides fire protection and suppression, inspection services, paramedic emergency medical services and hazardous material response. There are three OCFA stations within City limits:

- Station 19 - 23022 El Toro Road, Lake Forest 92630
- Station 42 - 19150 Ridgeline Road, Lake Forest 92679
- Station 54 - 19811 Pauling Avenue, Lake Forest 92610

The Community Risk Reduction Department of OCFA adopts and enforces codes and ordinances relative to fire and life safety issues, reviews plans and conducts inspections of construction projects, coordinates annual life safety inspections of all existing commercial buildings, provides long range analysis of impacts on resources associated with future land use and development, and investigates all fires. There are three Sections within the Department, further described below in more detail:

- The Planning and Development Services Section interacts with developers, architects, and engineers to meet the fire protection requirements for buildings and developments by reviewing all architectural development plans and proposals submitted in OCFA's jurisdiction. This includes tract and parcel maps, permits for conditional use, site development, coastal development, and other items related to the developmental process.
- The Pre-Fire Management Section takes a proactive approach to wildland fire prevention through the systematic evaluation of risk, fuels mitigation, road maintenance, vegetation management/home hardening education, plus ongoing collaboration with partner organizations, land owners and communities.
- The Prevention Field Services Section assists stakeholders in maintaining and enhancing safe communities by conducting fire safety inspections, enforcing and educating about applicable fire codes and ordinances, assuring that public safety issues are researched and addressed as appropriate. There are four regional offices that focus the risk reduction efforts more closely to the risks of the individual communities.

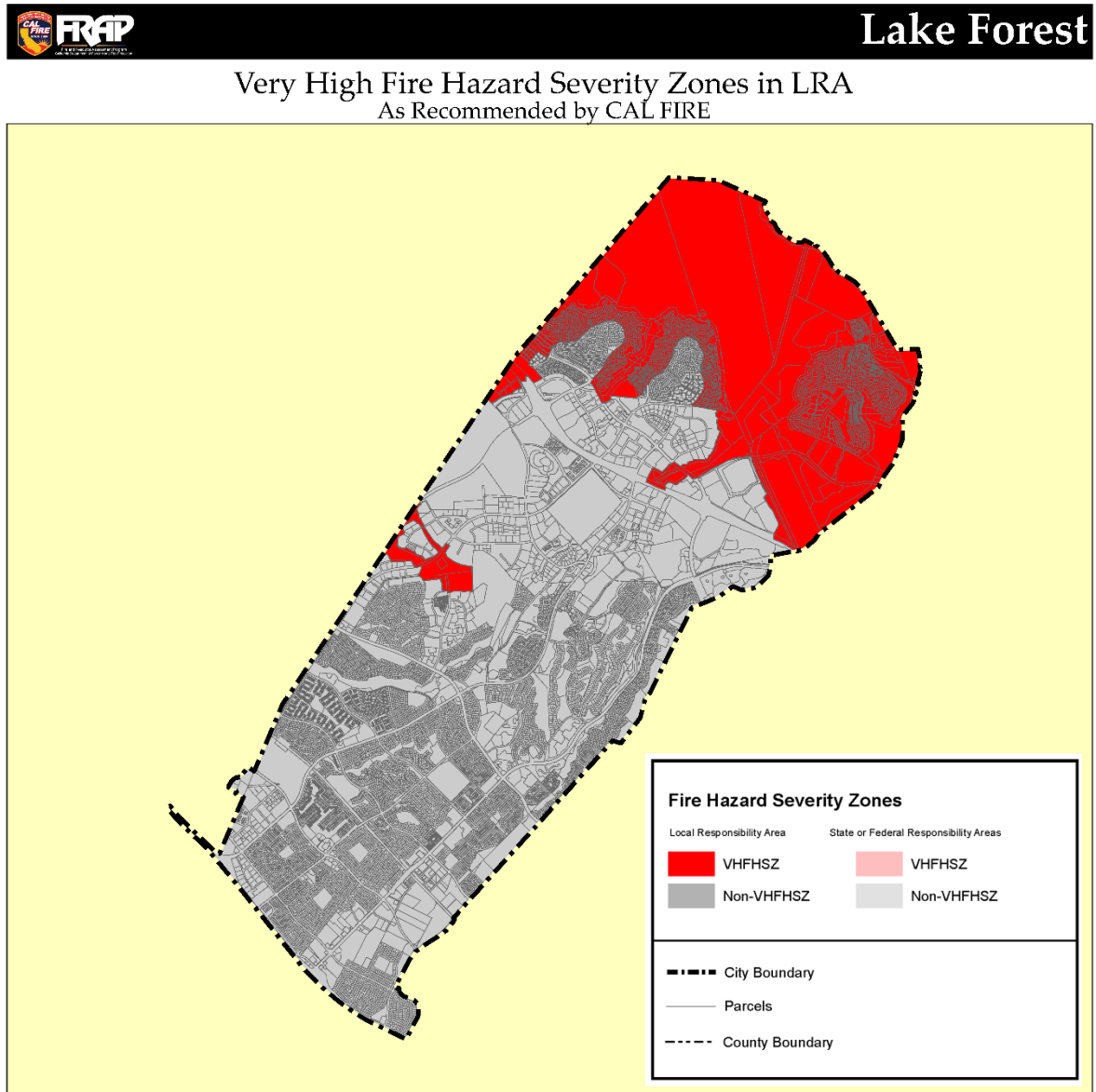
To better prepare for wildfires, the California Department of Forestry and Fire Protection (CAL FIRE) is required to classify the severity of fire hazards throughout the state. While most of California is subject to some degree of fire hazard, there are specific features that make some areas more hazardous. CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These designations, referred to as Fire Hazard Severity Zones (FHSZ), mandate how people construct buildings and protect property to reduce risk associated with wildland fires. The FHSZ maps denote lands where the state has financial responsibility for wildland fire protection, known as State Responsibility Area (SRA) and areas where local governments have financial responsibility for wildland fire protection, known as Local Responsibility Area (LRA). Within each, there are three levels of hazards: moderate, high, and very high. Per law, only lands designated as Very High Fire Hazard Severity Zones (VHFHSZs) are identified within LRAs. Figure PS-1 shows VHFHSZs in the LRA for Lake Forest as recommended by CAL FIRE. There are no SRAs in Lake Forest. Most of the Foothill Ranch and Portola Hills neighborhoods are within the VHFHSZ, as well as fire stations 42 and 54. The CAL FIRE map was last updated in 2011, and CAL FIRE is currently working on updates to incorporate improved fire science, data, and mapping techniques.

PS-2 Policies

- PS-2.1 **Building Fire Codes.** Require that all buildings and facilities within Lake Forest comply with local, state, and federal regulatory standards such as the California Building and Fire Codes as well as other applicable fire safety standards.
- PS-2.2 **Fire Protection Services.** Coordinate on an ongoing basis with OCFA and CAL FIRE as it protects the safety and security of the Lake Forest community.
- PS-2.3 **Fire Hazard Identification.** Maintain and regularly update the City's Very High Fire Hazard Severity Zone (VHFHSVs) (Figure 1) map for changes in fire hazard severity districts consistent with changes in hazard designations by CAL FIRE.
- PS-2.4 **Very High Fire Hazard Severity Zones.** Require that all development in VHFHSVs meet the following standards:
- a. Minimize new residential development in VHFHSVs when possible.
 - b. Coordinate with OCFA to ensure adequate fire protection services, fire protection plans, and emergency vehicle access are provided for new development in VHFHSVs.
 - c. As part of future a land use plan updates or amendments, assess site constraints when considering land use designations near wildlands to avoid or minimize wildfire hazards.
 - d. Coordinate with OCFA to identify building and site design methods or other methods to minimize damage if new structures are proposed to be in VHFHSVs on undeveloped land and when rebuilding after a fire.
 - e. As part of the OCFA review process, require ongoing brush management, fuel management/modification, defensible space, fire retardant landscaping, and other project design features for new development located in areas of or adjacent to high wildfire risk.
 - f. Coordinate with the applicable water district to ensure necessary water supply systems and flow for structural fire suppression are provided and maintained.
 - g. Work with OCFA and local HOAs to identify and maintain fire hazard reduction projects, including community fire breaks and private road and public road clearance.
 - h. Coordinate with OCFA to define minimum standards for evacuation of residential areas in VHFHSVs. If areas with inadequate access/evacuation routes are identified, develop appropriate mitigation measures, improvement plans, or education programs to ensure safe evacuation.

- PS-2.5 **Fire Safe Design.** As part of OCFA’s development review process, consider the following fire safe design measures (i.e., fire-resistant building and site design, materials, and landscaping) for development within VHFHSVs.
- a. Locate, design and construct development to provide adequate defensibility and minimize the risk of structural loss from wildland fires .
 - b. Design development on hillsides and canyons to reduce the increased risk of fires from topographic features (e.g., steep slopes, ridge saddles).
 - c. Minimize flammable vegetation and implement brush management best practices in accordance with OCFA approved Fuel Modification Plans.
 - d. Require visible home and street addressing and signage.
- PS-2.6 **Urban Fire Risks.** Work with the City’s fire service provider to maintain an ongoing fire inspection program to reduce fire hazards associated with multifamily development, critical facilities, public assembly facilities, industrial buildings, and nonresidential buildings.
- PS-2.7 **Grant Funding.** Seek grant funding, on our own and in collaboration with regional partners, to mitigate potential wildfire threats to the community and to implement special training workshops and projects related to defensible space and fuel reduction practices.
- PS-2.8 **Regional Coordination.** Coordinate with the County of Orange, neighboring cities, and other fire protection agencies to reduce the potential for wildfire hazards in the Saddleback Valley.
- PS-2.9 **Interagency Support.** Participate in the mutual aid system and automatic aid agreements to back up and supplement capabilities to respond to emergencies.
- PS-2.10 **Educational Programs.** Work with OCFA to disseminate educational programs on fire safety measures, such as defensible space and evacuation routes, and fire hazard risks for residents living in or adjacent to VHFHSVs, with a special focus on at-risk populations such as senior citizens, people with pre-existing health conditions, and persons experiencing homelessness.
- PS-2.11 **Post-fire Treatment.** Work with CAL FIRE, United States Forest Service, United States Geological Service, and applicable nongovernmental agencies to create a plan to address post-fire recovery activities and projects that allow burned areas to fully recover and minimize repetitive losses and further damage.
- PS-2.12 **Local Hazard Mitigation Plans.** Once it is adopted, update the City’s Local Hazard Mitigation Plan as necessary.
- PS-2.13 **Essential Public Facilities and Infrastructure.** Locate, when feasible, new essential public facilities and infrastructure outside of very high fire hazard severity zones, including but not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, emergency communication facilities, and utilities or identify construction methods or other methods to minimize damage if these facilities must be located in VHFHSVs.
- PS-2.14 **Future Emergency Service Needs.** Coordinate with fire protection, emergency service, and water providers to reassess fire hazards and future availability of water supplies after wildfire events to adjust fire prevention and suppression needs, as necessary, for both short- and long-term fire prevention.

Figure PS-1: Very High Fire Hazard Severity Zone Map



Source: CAL FIRE Fire Hazard Severity Zones Maps website: <https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/>, accessed December 13, 2021.

PS-2 Actions

- PS-2a In the event of a significant wildfire in the upslope areas east of the City, the City shall immediately coordinate with relevant federal, state, and local agencies, including but not limited to the USDA, USFS, CAL FIRE, the Orange County Flood Control District, and OCFA to establish and implement, as feasible, a flooding and debris flow prediction and monitoring program. The intent of the program shall be to map and assess the likelihood of debris flow (in %), potential volume of debris flow (in m3), and combined relative debris flow hazard. In the event that a flood or debris flow risk is predicted during a subsequent storm event, the City shall implement procedures contained in the Emergency Operations Plan to notify residents and business owners of evacuation orders in affected areas. This action is written and adopted with the understanding that the City of Lake Forest does not possess the resources to implement such a monitoring program independently, and must rely on the expertise and resources of outside agencies.
- PS-2b If applicable, mitigate existing non-conforming publicly-owned development to contemporary fire safe standards where feasible, including road standards and vegetative hazards.
- PS-2c Continue to require that all new habitable structures be designed in accordance with the most recent California Building and Fire Code with local amendments adopted by the City, including the use of fire sprinklers in residential structures.
- PS-2d Participate in Mutual Aid Agreements with neighboring cities and the Orange County Operational Area, described in the 2019 Unified County of Orange and Orange County Operational Area Emergency Operations Plan, as required by the Orange County Fire Authority.

GOAL PS-3 FLOOD HAZARDS

A community that is protected from potential flood hazards.

PS-3 Policies

- PS-3.1 **Regulatory Compliance.** Coordinate with local, state, and federal agencies to ensure that the City's regulations related to flood control are in compliance with federal, State, and local standards.
- PS-3.2 **FEMA Coordination.** Coordinate with the Federal Emergency Management Agency (FEMA) to ensure that Federal Insurance Rate Maps correctly depict flood hazards in the City.
- PS-3.3 **Municipal Code.** Implement the standards and requirements defined in the Municipal Code to reduce flood hazards and address flood-prone areas within Lake Forest.
- PS-3.4 **Existing Flood Zones.** Maintain dialogue with the County of Orange regarding regional flood facilities.
- PS-3.5 **Changing Conditions.** Coordinate with the Orange County Flood Control District to consider the need to expand the capacity of flood control facilities based on changing flood conditions associated with climate change and extreme weather.
- PS-3.6 **Mitigation.** Require that all new development and redevelopment in areas susceptible to flooding incorporate mitigation measures designed to reduce flood hazards.
- PS-3.7 **Adequate Infrastructure.** Maintain and regularly assess the status of local storm drainage infrastructure to ensure that the system is functioning properly.
- PS-3.8 **Public Awareness.** Promote public education and information dissemination on flooding hazards to help property owners protect their homes and businesses from flood damage.

PS-3 Actions

- PS-3a Monitor changes in Federal and State laws and regulations related to local flood protection, including the National Flood Insurance Program and incorporate necessary changes into the Municipal Code, the City's Emergency Operations Plan, and building codes as required and ensure that the City's regulations continue to require that new development within flood hazard zones is consistent with this Safety Element and is required to meet the flood protection requirements of State law, including but not limited to Government Code Sections 65007, 65865.5, 65962 and 66474.5.
- PS-3b Continue to disseminate information on flooding, flood control on private property, floodplains, and flood preparedness to the public.
- PS-3c Communicate with FEMA annually regarding updates to Flood Insurance Rate Maps and Letter of Map Revisions.
- PS-3d Periodically review county, state, and federal flood control best practices and incorporate appropriate standards into the Municipal Code.
- PS-3e Work with the Orange County Flood Control District to apply for grants that provide funding for local drainage controls, FEMA's Hazard Mitigation Grant and Flood Mitigation Assistance Programs, and their Pre-disaster Mitigation Program, CalEPA and the CA State Water Resources Control Board offer grants to municipalities throughout California.

GOAL PS-4 HAZARDOUS WASTE AND MATERIALS

A community that is protected from the potential for hazardous waste and materials contamination.

PS-4 Policies

- PS-4.1 **Regulations.** Ensure that OCFA continues to enforce the Uniform Fire Code relating to the use of hazardous material and ensure that appropriate regulations are followed and precautions are taken for the type and amount of hazard being created.
- PS-4.2 **Cleanup Sites.** Require that developers coordinate with the Orange County Health Care Agency to confirm that hazardous waste cleanup sites located within the City are remediated by the property owner in a manner that keeps the public safe.
- PS-4.3 **County Plans.** Utilize the Orange County Hazardous Waste Management Plan to ensure that local regulation and practices are consistent with the policy direction and action programs that the County recommends.
- PS-4.4 **Proposed Facilities.** Require appropriate environmental analysis to be conducted for any proposed hazardous waste materials treatment or transfer, in accordance with environmental review requirements.
- PS-4.5 **Emergency Response.** Work with OCFA and other responding agencies to ensure that emergency personnel respond safely and effectively to a hazardous materials incident in the city.
- PS-4.6 **Public Education.** Coordinate with the City's waste service provider(s) and the County of Orange to increase public awareness about proper disposal related to household hazardous waste and inform the Lake Forest community regarding relevant services and programs to address issues related to hazardous waste and materials.

PS-4 Actions

- PS-4a As part of the development review process, require projects that result in significant risks associated with hazardous materials to include measures to address the risks and reduce the risks to an acceptable level.
- PS-4b Continue to require the submittal of information regarding hazardous materials manufacturing, storage, use, transport, and/or disposal by existing and proposed businesses and developments to the Orange County Fire Authority.
- PS-4c Continue to promote off-site hazardous materials and/or electronic waste drop-off.

GOAL PS-5 EMERGENCY OPERATIONS

A community that is highly prepared and equipped to handle emergency situations, in order to minimize loss of life, injury, property damage, and disruption of vital services.

PS-5 Policies

- PS-5.1 **Critical Facilities.** Coordinate with service providers to ensure the resilience of critical facilities, lifeline services, and infrastructure, and plan for the use of critical facilities during post-disaster response and recovery.
- PS-5.2 **Emergency Preparedness Plans.** Maintain an updated Emergency Operations Plan specific to Lake Forest.
- PS-5.3 **Local Coordination.** Coordinate with local key stakeholders (officials, schools, businesses, and organizations) within the community to make them aware of their role in the emergency plan and the necessary requirements in case of emergency.
- PS-5.4 **Automatic and Mutual Aid.** Continue to participate in automatic and mutual aid agreements with adjacent service providers to ensure efficient and adequate resources, facilities, and support services during and after emergencies.
- PS-5.5 **Communications.** Evaluate the potential to utilize a comprehensive emergency communication system that allows for efficient connection in case of emergency.
- PS-5.6 **Emergency Evacuation Routes and Access.** Work with OCFA and the Orange County Sheriff's Department to maintain, update, and regularly exercise emergency access, protocols, and evacuation routes to assess their effectiveness.
- PS-5.7 **Emergency Shelters.** Periodically coordinate with emergency shelter providers to ensure that necessary equipment supplies are available in case of emergency.
- PS-5.8 **Community Training Programs.** Continue to support community-based emergency training programs as a valuable asset to the community.
- PS-5.9 **Public Awareness.** Prepare residents for emergency situations by making emergency strategies, including evacuation routes, publicly-known and easily accessible.
- PS-5.10 **School Safety.** Coordinate with local schools related to their programs and practices regarding emergency preparedness.

PS-5 Actions

- PS-5a Explore grant funding for the preparation of a Local Hazard Mitigation Plan for the City of Lake Forest.
- PS-5b Regularly practice implementation of the City's Emergency Operations Plan and update it regularly.
- PS-5c Regularly review County and State emergency response procedures that must be coordinated with City procedures.

GOAL PS-6 NOISE

A comfortable community environment that is free from excessive noise pollution.

PS-6 Policies

- PS-6.1 **Land Use Planning.** Require development and infrastructure projects to be consistent with the maximum allowable noise exposure standards identified in Table PS-1 to ensure acceptable noise levels for existing and future development.
- PS-6.2 **Sensitive Facilities.** Ensure appropriate mitigation is incorporated into the design of noise-sensitive facilities to minimize noise impacts.
- PS-6.3 **Site Design.** Require site planning and project design techniques to minimize noise impacts adjacent to sensitive uses.
- PS-6.4 **Noise Control.** Ensure that noise levels do not exceed the limits established in Table PS-2 by incorporating sound-reduction design in new construction or revitalization projects impacted by non-transportation-related noise sources.
- PS-6.5 **Roadway Noise.** Encourage nonmotorized transportation alternatives for local trips and the implementation of noise sensitivity measures in the public realm, including traffic-calming road design, lateral separation, natural buffers, and setbacks to decrease excessive motor vehicle noise.
- PS-6.6 **Highway Noise.** Continue to coordinate with the California Department of Transportation (Caltrans) and the Transportation Corridor Agency (TCA) to achieve maximum noise abatement in the design of new highway projects or improvements along I-5.
- PS-6.7 **Vehicles and Trucks.** Monitor and enforce existing speed limits and motor vehicle codes requiring adequate mufflers on all types of vehicles traveling through the city.
- PS-6.8 **Commercial Noise.** Require the use of noise attenuation measures, including screening and buffering techniques, for all new commercial development expected to produce excessive noise; in existing cases where the City's noise standards are exceeded, work with Code Enforcement to require compliance.
- PS-6.9 **Interjurisdictional Coordination.** Coordinate with neighboring cities to minimize noise conflicts between land uses along the City's boundaries.
- PS-6.10 **Airplane Noise.** Maintain communication with John Wayne Airport and other relevant air transportation agencies to ensure that all future plans have limited impacts to the community of Lake Forest.

PS-6 Actions

- PS-6a Update Chapter 11.16 of the Lake Forest Municipal Code to ensure that the noise standards are consistent with this General Plan, including Tables PS-1 and PS-2, and to require new residential, mixed-use with a residential component, and other noise-sensitive development to be designed to minimize noise exposure to noise sensitive uses through incorporation of site planning and architectural techniques. The update shall also include noise standards for residential uses within a mixed-use development, which may differ from other adopted residential noise standards.
- PS-6b Review new development projects for compliance with the noise requirements established in this General Plan, including the standards established in Tables PS-1 and PS-2. Where necessary, require new development to mitigate excessive noise through best practices, including building location and orientation, building design features, placement of noise-generating equipment away from sensitive receptors, shielding of noise-generating equipment, placement of noise-tolerant features between noise sources and sensitive receptors, and use of noise-minimizing materials such as rubberized asphalt.
- PS-6c Require acoustical studies for all new discretionary projects, including those related to development and transportation, which have the potential to generate noise impacts which exceed the standards identified in this General Plan. The studies shall include representative noise measurements, estimates of existing and projected noise levels, and mitigation measures necessary to ensure compliance with this element.
- PS-6d In making a determination of impact under the California Environmental Quality Act (CEQA), a substantial increase will occur if ambient noise levels have a substantial increase. Generally, a 3 dB increase in noise levels is barely perceptible, and a 5 dB increase in noise levels is clearly perceptible. Therefore, increases in noise levels shall be considered to be substantial when the following occurs:
- When existing noise levels are less than 60 dB, a 5 dB increase in noise will be considered substantial;
 - When existing noise levels are between 60 dB and 65 dB, a 3 dB increase in noise will be considered substantial;
 - When existing noise levels exceed 65 dB, a 1.5 dB increase in noise will be considered substantial.
- PS-6e Update the City's Noise Ordinance (Chapter 11.16) to reflect the noise standards established in this General Plan and proactively enforce the City's Noise Ordinance, including requiring the following measures for construction:
- Restrict construction activities to the hours of 7:00 a.m. to 7:00 p.m. on Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturdays. No construction shall be permitted outside of these hours or on Sundays or legal City of Lake Forest holiday, without a specific exemption issued by the City.
 - A Construction Noise Management Plan shall be submitted by the applicant for construction projects, when determined necessary by the City. The Construction Noise Management Plan shall include proper posting of construction schedules, appointment of a noise disturbance coordinator, and methods for assisting in noise reduction measures.

- Noise reduction measures may include, but are not limited to, the following:
 - Equipment and trucks used for project construction shall utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically attenuating shields or shrouds) wherever feasible.
 - Except as provided herein, impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction shall be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. This muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves shall be used, if such jackets are commercially available. This could achieve a reduction of 5 dBA. Quieter procedures shall be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.
 - Temporary power poles shall be used instead of generators where feasible.
 - Stationary noise sources shall be located as far from adjacent properties as possible, and they shall be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the City of provide equivalent noise reduction.
 - The noisiest phases of construction shall be limited to less than 10 days at a time. Exceptions may be allowed if the City determines an extension is necessary and all available noise reduction controls are implemented.
 - Delivery of materials shall observe the hours of operation described above. Truck traffic should avoid residential areas to the extent possible.
- Require new development to minimize vibration impacts to adjacent uses during demolition and construction. For sensitive historic structures, a vibration limit of 0.08 in/sec PPV (peak particle velocity) will be used to minimize the potential for cosmetic damage to the building. A vibration limit of 0.30 in/sec PPV will be used to minimize the potential for cosmetic damage at buildings of normal conventional construction.

PS-6f The City shall require new residential projects located adjacent to major freeways, hard rail lines, or light rail lines to follow the FTA vibration screening distance criteria to ensure that residential uses are not exposed to vibrations exceeding 72 VdB for frequent events (more than 70 events per day), 75 VdB for occasional events (30-70 events per day), or 80 VdB for infrequent events (less than 30 events per day).

Table PS-1: Land Use Compatibility for Community Noise Environment

Land Use ¹	Outdoor Activity Areas ^{2, 3}	Interior Spaces	
		Ldn/ CNEL, dB	Leq, dB ⁴
Residential	60	45	-
Motels/Hotels	65	45	-
Mixed-Use	65	45	
Hospitals, Nursing Homes	60	45	-
Theaters, Auditoriums	-	-	35
Churches	60	-	40
Office Buildings	65	-	45
Schools, Libraries, Museums	70	-	45
Playgrounds, Neighborhood Parks	70	-	-
Industrial	75	-	45
Golf Courses, Water Recreation	70	-	-

1. Where a proposed use is not specifically listed, the use shall comply with the standards for the most similar use as determined by the City.

2. Outdoor activity areas for residential development are considered to be the backyard patios or decks of single-family units and the common areas where people generally congregate for multi-family developments. Where common outdoor activity areas for multi-family developments comply with the outdoor noise level standard, the standard will not be applied at patios or decks of individual units provided noise-reducing measures are incorporated (e.g., orientation of patio/deck, screening of patio with masonry or other noise-attenuating material). Outdoor activity areas for non-residential developments are the common areas where people generally congregate, including pedestrian plazas, seating areas, and outside lunch facilities; not all residential developments include outdoor activity areas.

3. In areas where it is not possible to reduce exterior noise levels to achieve the outdoor activity area standard w using a practical application of the best noise-reduction technology, an increase of up to 5 Ldn over the standard will be allowed provided that available exterior noise reduction measures have been implemented and interior noise levels are in compliance with this table

4. Determined for a typical worst-case hour during periods of use.

Table PS-2: Performance Standards for Stationary Noise Sources, Including Affected Projects ^{1,2,3,4}

Noise Level Descriptor	Daytime	Nighttime
	7 am to 10 pm	10 pm to 7 am
Hourly Leq, dBA	55	50

1. Each of the noise levels specified above should be lowered by 5 dB for simple noise tones, noises consisting primarily of speech or music, or recurring impulsive noises. Such noises are generally considered to be particularly annoying and are a primary source of noise complaints.

2. No standards have been included for interior noise levels. Standard construction practices should, with the exterior noise levels identified, result in acceptable interior noise levels.

3. Stationary noise sources which are typically of concern include, but are not limited to, the following:

HVAC Systems	Cooling Towers/Evaporative Condensers
Pump Stations	Lift Stations
Emergency Generators	Boilers
Steam Valves	Steam Turbines
Generators	Fans
Air Compressors	Heavy Equipment
Conveyor Systems	Transformers
Pile Drivers	Grinders
Drill Rigs	Gas or Diesel Motors
Welders	Cutting Equipment
Outdoor Speakers	Blowers

4. The types of uses which may typically produce the noise sources described above include but are not limited to: industrial facilities, pump stations, trucking operations, tire shops, auto maintenance shops, metal fabricating shops, shopping centers, drive-up windows, car washes, loading docks, public works projects, batch plants, bottling and canning plants, recycling centers, electric generating stations, race tracks, landfills, sand and gravel operations, and athletic fields.

GOAL PS-7 CLIMATE CHANGE AND RESILIENCY PLANNING

A well-prepared community where risks to life, property, the economy, and the environment resulting from climate change, including extreme weather events, are minimized.

PS-7 Policies

- PS-7.1 **Community Preparedness.** Promote a well-prepared City that can effectively overcome natural disasters and scarcity of resources due to climate change.
- PS-7.2 **Regional Actions.** Participate in discussions regarding regional actions that reduce impacts from climate change.
- PS-7.3 **Community Engagement.** Educate the community regarding potential hazards due to climate change and develop programs and educational material to encourage public readiness.
- PS-7.4 **Ecological Recovery.** Coordinate with federal, state, and local agencies to establish ecological recovery programs.
- PS-7.5 **Energy Supply.** Promote plans and programs that increase sustainable energy sources.
- PS-7.6 **Programs.** Implement necessary actions and programs to improve drought preparation and response for the most vulnerable community members.
- PS-7.7 **Cooling Centers.** Designate public buildings, specific private buildings, or institutions with air conditioning as public cooling shelters; extend hours at designated cooling centers during periods of extreme heat or power outage (if the site is supported by a backup generator).
- PS-7.8 **Storms.** Continue to provide access to flood protection resources and services (signage, sandbags, etc.) as feasible at designated public facilities during and after extreme weather events.

LOOKING AHEAD

As Lake Forest looks to the future, State law requires the City to consider climate impacts facing California as well as methods to adapt and be resilient to climate change effects. As a result of climate change, Lake Forest may experience more intense and frequent heat waves, drought, and wildfires, and more severe storms and extreme weather events.

Emissions scenarios used in the General Plan and Environmental Impact Report are the same as those used by the Intergovernmental Panel on Climate Change's Fifth Assessment Report and are called Representative Concentration Pathways, or RCPs. There are four RCPs: 2.6, 4.5, 6.0, and 8.5. Each represents a set of possible underlying socioeconomic conditions, policy options, and technological considerations, spanning from a low-end scenario that requires significant emissions reductions resulting in zero global emissions by 2080 (RCP 2.5) to a high-end, "business-as-usual," fossil-fuel-intensive emissions scenario (RCP 8.5). The low-end scenario is most closely aligned with California's ambitious greenhouse gas reduction targets and the aspirational goals of the United Nations Framework Convention on Climate Change 2015 Paris Agreement. Thus far, global emissions continue to follow the business-as-usual trajectory.

- PS-7.9 **Special Assistance.** Address the needs of individuals with limited mobility or limited access to transportation for access to safe and comfortable shelter during extreme heat events or other severe weather events.
- PS-7.10 **Leadership.** Demonstrate leadership in local climate planning efforts through a range of tangible actions and policies at the municipal operations level.
- PS-7.11 **Collaboration.** Collaborate with local, regional, state and/or federal jurisdictions and agencies on climate resiliency and adaptation strategies.
- PS-7.12 **Greenhouse Gas Reductions.** Reduce communitywide greenhouse gas emissions locally by actively support regional efforts to reduce greenhouse gases throughout the county.
- PS-7.13 **Extreme Heat Vulnerabilities.** Encourage new developments, major remodels, and redevelopments to address urban heat island issues and reduce urban heat island effects for the proposed project site and adjacent properties.
- PS-7.14 **Habitat Protection.** Prioritize the protection of vulnerable species and habitat within VHFHSZs that are susceptible to drought and more likely to burn from wildfire, leave the area, or die out from lack of resources.
- PS-7.15 **Ongoing Monitoring.** Monitor GHG emissions generated by the community over time for consistency with the established GHG reduction targets, and update the City's community GHG Inventory every five years. In the event that the City determines that ongoing efforts to reduce GHG emissions are not on track to meet the City's adopted GHG reduction targets, the City shall establish and adopt new and/or revised GHG reductions measures that will effectively meet the established GHG reduction targets.

PS-7 Actions

- PS-7a Provide information and resources to the public and businesses regarding steps the City is taking to address the issue of climate change.
- PS-7b Study the transition to energy-efficient street lights, such as LEDs, for City-owned light facilities.
- PS-7c Consider purchasing only electric or alternative-energy vehicles for the City vehicle fleet, as appropriate, based on the intended use of the vehicle.
- PS-7d Evaluate the feasibility for government-constructed and/or -operated new development to exceed the CalGreen Tier 1, or successor program, standards.
- PS-7e Promote the use of sustainable and carbon-neutral energy sources in new development as directed by the California Green Building Standards Code.
- PS-7f Explore using renewable energy and clean generation technologies such as solar, wind, biogas, or fuel cells to power City facilities where appropriate.

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