Attachment No. PC 2

Draft Safety Element

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Safety Element

PURPOSE

The purpose of the Safety Element is to identify, adapt, reduce, prepare for, respond to, and recover from the potential risk and occurrences of natural and human-made hazards.

OVERVIEW

The purpose of the Safety Element is to identify, adapt, reduce, prepare for, respond to, and recover from the potential risk and occurrences of natural and human-made hazards.

It describes the potential for natural and human-caused hazards in Newport Beach and the potential short- and long-term risk to human life and property, as well as the economic and social consequences of those hazards. Hazards evaluated to inform the update to the Safety Element include coastal hazards, seismic and geologic hazards, flooding, fire, hazardous materials, aviation hazards, and extreme heat. This section also provides goals and policies that can help the City of Newport Beach (City) adapt to and prepare for hazards, improving the community's resilience and overall safety.

Local Hazard Mitigation Plan

The City's Local Hazard Mitigation Plan works in tandem with this Safety Element to assess and address hazards. Local Hazard Mitigation Plans must meet certain Federal requirements, whereas Safety Elements follow State requirements. Both plans include policies and actions for the City to undertake, which means that consistency across plans is important. As allowed by California Government Code Section 65302.6, this Safety Element adopts the Local Hazard Mitigation Plan and all future updates by reference; the Local Hazard Mitigation Plan can be found on the City's website here: https://www.newportbeachca.gov/how-do-i/find/disaster-preparedness-information

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VULNERABLE POPULATIONS

Safety Elements must consider subsets of the population that may be particularly vulnerable to hazards. This section assesses vulnerable populations as it relates to each hazard addressed in this Safety Element and compares the local and regional proportion of vulnerable populations to the statewide averages to contextualize the City's vulnerability relative to the region and the State. Table 1 provides the local and regional share of health indicators as based on vulnerable subpopulations. How vulnerability applies to each hazard is described within this section.

Table 1. Populations Vulnerable to Hazards

Vulnerable Population Health Indicators	Location	
	Newport Beach	Orange County
Disability	3.6%	5.3%
Older Adults[1]	23.6%	16.4%
Young Children[2]	3.9%	5.9%
Uninsured Adults[3,4]	4.4%	10.7%
Households without Car Access	4.0%	4.4%
Limited Car Access	4.0%	4.4%
Renter - Severe Housing Cost Burden[5]	22.2%	26.9%
Homeowner - Severe Housing Cost Burden[6]	13.1%	11.4%
Limited English Speaking[7]	3.5%	19.3%
Asthma	8.1%	8.3%
Outdoor Workers	4.6%	6.2%

Source: Public Health Alliance. 2022. "The California Healthy Places Index." https://map.healthyplacesindex.org/.
Legend: Quartile 1 = Good, Quartile 2 = Moderate, Quartile 3 = Poor, Quartile 4 = Challenged
Note: The table is colored to indicate how the City of Newport Beach and Orange County compare to other California cities and counties on average, not to indicate that certain traits are overall "good" or "bad."

1 People aged 65 and over.
2 People aged 5 and under.
3 Percent of adults aged 18 to 64 without health insurance
4 Pregnant and nursing women are not included in the table due to lack of data.
5 Renters who pay more than 50% of their income toward housing costs.
6 Homeowners who pay more than 50% of their income toward housing costs.
7 Percent of people aged 5 and older who speak English less than very well.

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Coastal Hazards

Vulnerability to coastal hazards, including coastal flooding, rogue waves, tsunamis, and slower-moving hazards such as cliff erosion, is primarily a function of proximity to the coast. However, other factors like difficulty evacuating and challenges rebuilding after damage from flooding means that people with disabilities, older adults, households without cars, people with limited English proficiency, renters, and people who are housing-cost burdened are also vulnerable to coastal hazards. **Table 1** illustrates the percentages of these vulnerable populations in Newport Beach relative to Orange County as a whole.

Geologic and Seismic Hazards

Vulnerability to geologic and seismic hazards depends on location. Buildings located in areas with heightened risk of earthquake, landslide, liquefaction, or other geologic and seismic events, and people living in such areas, are naturally more susceptible to damage and heightened risk of injury or loss of life. Furthermore, certain groups may have more difficulty recovering after a major seismic or geologic event or have more difficulty accessing information about emergencies. These groups include low-income households, especially renters; people over the age of 65; people with disabilities; and those who have limited English proficiency. **Table 1** outlines the percentages of these populations in Newport Beach relative to Orange County as a whole.

Flooding Hazards

Flooding impacts can be exacerbated due to difficulty evacuating or challenges with recovery after a flood. Older adults or people with disabilities may have limited access to transportation options, increasing their reliance on transportation agencies or others during an evacuation. Low-income or housing-cost-burdened households, particularly renters without rental insurance, can face greater challenges recovering from flooding events and may face greater risk of displacement if their residence is damaged by floodwaters. **Table 1** outlines the percentage of these populations in Newport Beach relative to Orange County as a whole.

Fire Hazards

Vulnerability to wildfire is exacerbated for those who have difficulty evacuating, are sensitive to smoke, or face recovery challenges. This group includes people over 65; those with disabilities, limited car access, and respiratory conditions like asthma; low-income households; and young children. In Newport Beach, older adults and severely cost-burdened homeowners and renters are particularly at risk. **Table 1** outlines the percentages of these populations in Newport Beach relative to Orange County as a whole.

Hazardous Materials Management

Populations vulnerable to hazardous materials exposure are those whose health is more sensitive to exposure to toxic chemicals. These groups include young children, pregnant and nursing women, and older adults.

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People without healthcare access are also more vulnerable because of financial barriers to seeking treatment for adverse health impacts. The most common of these groups in Newport Beach is older adults. **Table 1** outlines the percentages of these populations in Newport Beach relative to Orange County as a whole.

Aviation Hazards

Vulnerability to aviation hazards does not depend on population characteristics. Rather, vulnerability is a function of exposure to those hazards, which can be learned about more in the JWA Airport Environs Land Use Plan. Specific vulnerable subpopulations are not described in Table 1.

Extreme Heat

Extreme heat vulnerability can be exacerbated for people who are especially sensitive to its impacts, like young children or older adults, and those who are more exposed to its effects, such as unsheltered individuals and outdoor workers. Additionally, households without air conditioning are more vulnerable to heat waves or other extreme heat events, but due to low data availability, this group was not included in the table below. In Newport Beach, older adults are the most common population vulnerable to extreme heat. **Table 1** outlines the percentages of vulnerable populations in Newport Beach relative to Orange County as a whole.

GOALS, POLICIES, AND ACTIONS

Coastal Hazards

Coastal communities face challenges related to flooding from tsunamis, rogue waves, king tides, storm surges, and seiches that continues to intensify as sea levels rise. Further, with more frequent and intense storms, it is important that the City and its residents are prepared for precipitation-related flood risks, especially residents in close proximity to the coast. Although infrastructure can protect the community in the event of flooding, it is also important that existing and planned development is resilient and that the community is aware of how to protect themselves and their property.

Additionally, projects and programs to manage the shoreline require up-to-date data for flood-prone locations and the direction and rate of sand and bluff erosion, among other information on changing conditions. Current, high-quality data allows for a more tailored, responsive approach to managing the shoreline.

Tsunamis and Rogue Waves

Tsunamis and rogue waves are low-probability but high-risk hazards.

Locally generated tsunamis, caused by offshore faulting or coastal landsliding, could result in extensive loss of life and property in Newport Beach. California Department of Conservation tsunami maps updated in 2021 indicate that key areas of the city susceptible to tsunamis include West Newport, Balboa Peninsula, Lido Isle,

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Balboa Island, and the Upper Newport Bay.[1] Port and harbor areas of Newport Beach are susceptible to not only tsunami inundation but tsunami currents, which are strong and erratic currents produced by tsunamis that can damage infrastructure and property, particularly floating vessels.[2]

Rogue waves are very large waves that arise unexpectedly in the open ocean. Their erratic nature and unpredictability present challenges for planning and evacuation.

Storm Surges

Storm surges are associated with low-pressure weather systems, such as hurricanes, and other events involving high winds and rainfall. During storm surges, the water level increases, which can result in coastal flooding, potentially causing damage to low-lying areas and existing structures. If a storm surge occurs during a high tide, flooding can be significant.

The likelihood of a storm surge in Newport Beach is low, although there have been two recent occurrences of storm surges during king tides in July 2020 and August 2023.

Storm surging associated with a tropical storm has been reported only once in the history of Newport Beach, in 1939. In 2023, Hurricane Hilary, which had degraded to tropical storm status by the time it reached Orange County, delivered heavy rainfall and winds to Newport Beach. The city only experienced some localized flooding and debris flows, but pump crews and berms dug up at beaches prevented any substantial impacts. No storm surge was recorded as a result of the storm.

Sea-Level Rise

Global average sea levels have risen 3.98 inches since 1992 and are predicted to continue to rise.[3] As sea levels rise near Newport Beach, the risk of flooding during storms is exacerbated. **Figure 1**, Citywide Coastal Flood Risk, shows the possible extent of coastal flooding during an average storm event under the selected Coastal Storm Modeling System (CoSMoS) scenarios in 2030, 2050, and 2100. **Figure 2**, Newport Harbor Coastal Flood Risk, shows the same data for the Newport Harbor area.

To understand potential coastal flood risk in the near term and long term, the following CoSMoS scenarios were selected for mapping: 0.8 feet of sea-level rise by 2030, 1.6 feet by 2050, and both 4.1 and 4.9 feet by

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[1] Department of Conservation. 2021. "Tsunami Hazard Area Map, Orange County." Produced by the California Geological Survey and the California Governor's Office of Emergency Services. Mapped at multiple scales.

[2] The SAFRR Tsunami Modeling Working Group. 2013. "Modeling for the SAFRR Tsunami Scenario—Generation, Propagation, Inundation, and Currents in Ports and Harbors." Chapter D in *The SAFRR (Science Application for Risk Reduction) Tsunami Scenario*, U.S. Geological Survey Open-File Report 2013–1170, 136 pp. http://pubs.usgs.gov/of/2013/1170/d/.

[3] NASA. 2022. "Tracking 30 years of Sea Level Rise." https://earthobservatory.nasa.gov/images/150192/tracking-30-years-of-sea-level-rise

2100. Two levels were selected for 2100 due to the potential for variations in sea-level rise, which are highly dependent on the rate of global greenhouse gas emission reductions that occur through 2100. All of these scenarios are medium to medium-high risk aversion scenarios, meaning there is between a 1-in-20 and 1-in-200 chance that sea-level rise meets or exceeds projections. Areas that could flood during an average storm with 0.8 feet of sea-level rise include almost all of Balboa Island and the western portion of Balboa Peninsula, emanating outward from Newport Island and the surrounding channels. With 1.6 feet of sea-level rise, flooding could extend to much of the central portion of Balboa Peninsula, covering land northeast of Balboa Boulevard and west of Marina Park. With 4.1 to 4.9 feet of sea-level rise, neighborhoods and beaches near the Santa Ana River jetty, Balboa Coves, Mariner's Mile, many islands in Newport Harbor, and parts of Balboa Peninsula, Corona del Mar State Beach, and Little Corona del Mar Beach could flood.

Many of Newport Beach's most developed areas, densely populated neighborhoods, and vibrant business communities are at risk of flooding during an average storm, even with a small amount of sea-level rise. This flooding could be more severe during unusually large storms, which are likely to become more frequent.

Figure 1. Citywide Coastal Flood Risk

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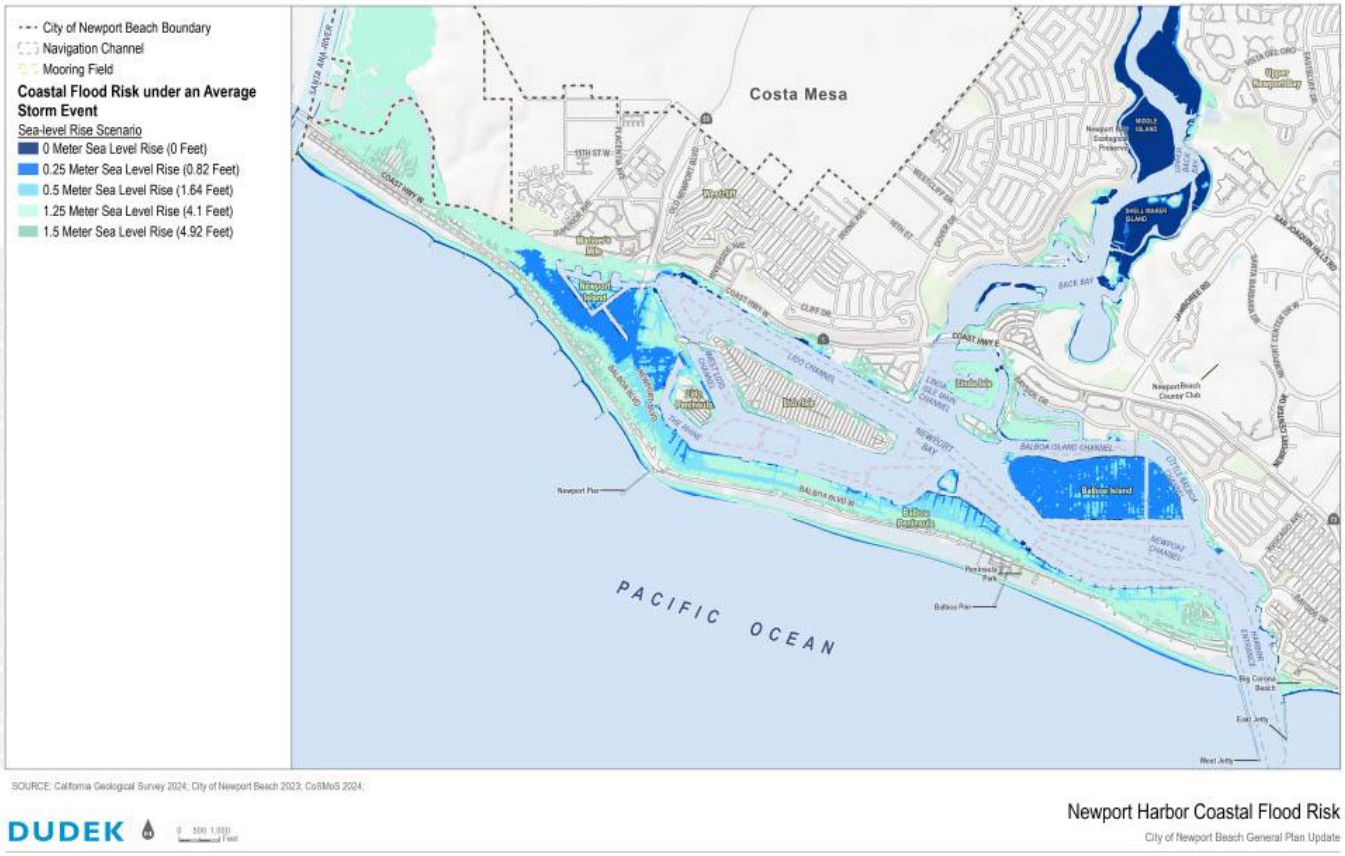
Figure 2. Newport Harbor Coastal Flood Risk



Beach and Cliff Erosion

The city's beaches are an essential part of the community, providing recreational opportunities, driving tourism, supporting natural ecosystems, and protecting inland areas from flooding and tsunamis. In addition to causing coastal flooding, the higher tides and storm surges associated with sea-level rise can erode beaches and cliffs at faster rates. Bluffs are an important part of the city's landscape, developed with homes and other uses, providing valuable views, and offering natural habitat for many plant and animal species.

Because Newport Beach is lined with both sandy beaches and coastal bluffs, coastal erosion has the potential to affect multiple areas within Newport Beach. Efforts to minimize erosion and the loss of sand will help protect the shoreline and maintain beaches.

CoSMoS predicts the future position of cliff-top edges and shorelines as they relate to wave patterns under different sea-level-rise scenarios. The land formations in and around Upper Newport Bay and the coastal cliffs and bluffs in and proximate to Corona del Mar are vulnerable to damage from erosion or complete loss due to landslides. Forecasted cliff retreat is especially extensive along Ocean Boulevard near Inspiration Point and the

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Cameo Shores neighborhood. Some cliff areas are protected by anti-erosion infrastructure and may not experience as much erosion as they would otherwise; however, infrastructure requires regular maintenance. Refer to the Safety Existing Conditions and Background Analysis for location and scenario-specific figures.

Sand Nourishment

Sand nourishment, the practice of adding sand to eroding beaches, is primarily used to combat coastal erosion and to ensure continued recreational opportunities in the face of growing concern due to rising sea levels and increased storm intensity. In Newport Beach, these projects are especially important to address erosion, support tourism, protect ecosystems, and prevent groundwater intrusion and flooding. Groundwater and flood protection enhancements occur because wider beaches act as natural barriers by reducing saltwater intrusion and absorbing wave energy to protect inland areas. Increased beach width can also enhance groundwater recharge by promoting precipitation infiltration. The City strives for sand replenishment activities to be regularly undertaken every 5 to 7 years, but at times certain areas of the City experience irregular frequencies for sand replenishment activity. In some cases, infrastructure such as groins and breakwaters can also be used to provide additional support for sand loss reduction by minimizing downdrift erosion.

Goal S-1: A community that is resilient to coastal flooding

- Policy S-1.1: Prioritize the development and adoption of a well vetted and comprehensive Sea Level Rise Plan consistent with relevant state and federal legislation and appropriately update the Local Coastal Program, including the Land Use Plan and Implementation Plan, as reasonably necessary. The Sea Level Rise Plan should at least consider:
    - Preservation of private property rights
    - Preservation and migration of inter-tidal habitats
    - Preservation of public access
    - Protecting and retrofitting critical infrastructure, such as water and wastewater infrastructure
    - Triggers and pathways related to the magnitude and timing of sea level rise (Imp. 5.1) (Policy HBB-1.2.1)
- Policy S-1.2: Collaborate with neighboring coastal local governments, regional agencies, and State agencies ahead of and during the Local Coastal Program update and during coastal infrastructure projects to ensure implementation success. (Imp. 14.1, Imp. 14.3, Imp. 14.6, Imp. 14.12, Imp. 14.16)
- Policy S-1.3: Develop funding and financing strategies as part of Senate Bill 272 compliance before 2034. Consider long-term reserve funds, financing districts, tideland revenue fee structures, and State

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and Federal funding opportunities to pursue coastal resilience projects and better protect the harbor, beaches, and community from flooding. (Imp. 5.1, Imp. 24.1, Imp. 30.1, Imp. 30.2, Imp. 31.1)

- Policy S-1.4: Encourage the use of nature-based solutions as alternatives to traditional infrastructure. (Imp. 8.1, 21.2) (Policy HBB-3.2.4)
- Policy S-1.5: During Emergency Operations Plan updates, reevaluate protocol for the coordinated emergency use of public and private coastal facilities and equipment (i.e., partnerships for allowed use of docks) in advance of flood, storm, pollution, dredging, vessel sinking, and other potentially hazardous events to supplement existing safety and rescue operations. (Imp. 28.2) (Policy HBB-3.2.7)

Goal S-2: Beaches that are maintained and protected from erosion

- Policy S-2.1: Coordinate with the U.S. Army Corps of Engineers to develop and implement a comprehensive beach replenishment program to assist in maintaining beach width and elevations. Analyze monitoring data to determine nourishment priorities, and try to use nourishment as shore protection, in lieu of more-permanent hard shoreline armoring options. (Imp. 8.1, Imp. 14.12, Imp. 21.2) (Policy HBB 3.2.5)
- Policy S-2.2: Investigate shoreline management pilot projects to test solutions on a smaller scale. (Imp. 5.1, Imp. 21.2)
- Policy S-2.3: Work with regional governments to create potential partnerships and explore cross-boundary projects that benefit the region. (Imp. 5.1, Imp. 14.1, Imp. 14.12) (Policy NR-7.1.1)
- Policy S-2.4: Ensure a high standard for the quality of sand used for beach nourishment to support recreation and minimize impacts to marine life. (Imp. 5.1, Imp. 14.12)

Goal S-3: Current and accessible data and information on flooding, beach erosion, and bluff erosion

- Policy S-3.1: Provide information about flooding reduction strategies, such as elevating critical uses and infrastructure, to at-risk property owners. (Imp. 29.1) (Policy HBB-1.2.2)
- Policy S-3.2: Monitor progress of sand nourishment and sand retention projects. (Imp. 28.1) (Policy NR-7.1.3)
- Policy S-3.3: Work with non-profits, educational institutions, and interested community members to collect king tide monitoring data to identify location, severity, and frequency of flooding. (Imp. 14.16, Imp. 28.1) (Policy HBB 1.2.3)
- Policy S-3.4: Develop an open-access online dashboard that may display project implementation or spatial data such as flooding, beach, and bluff monitoring data. (Imp. 28.1)

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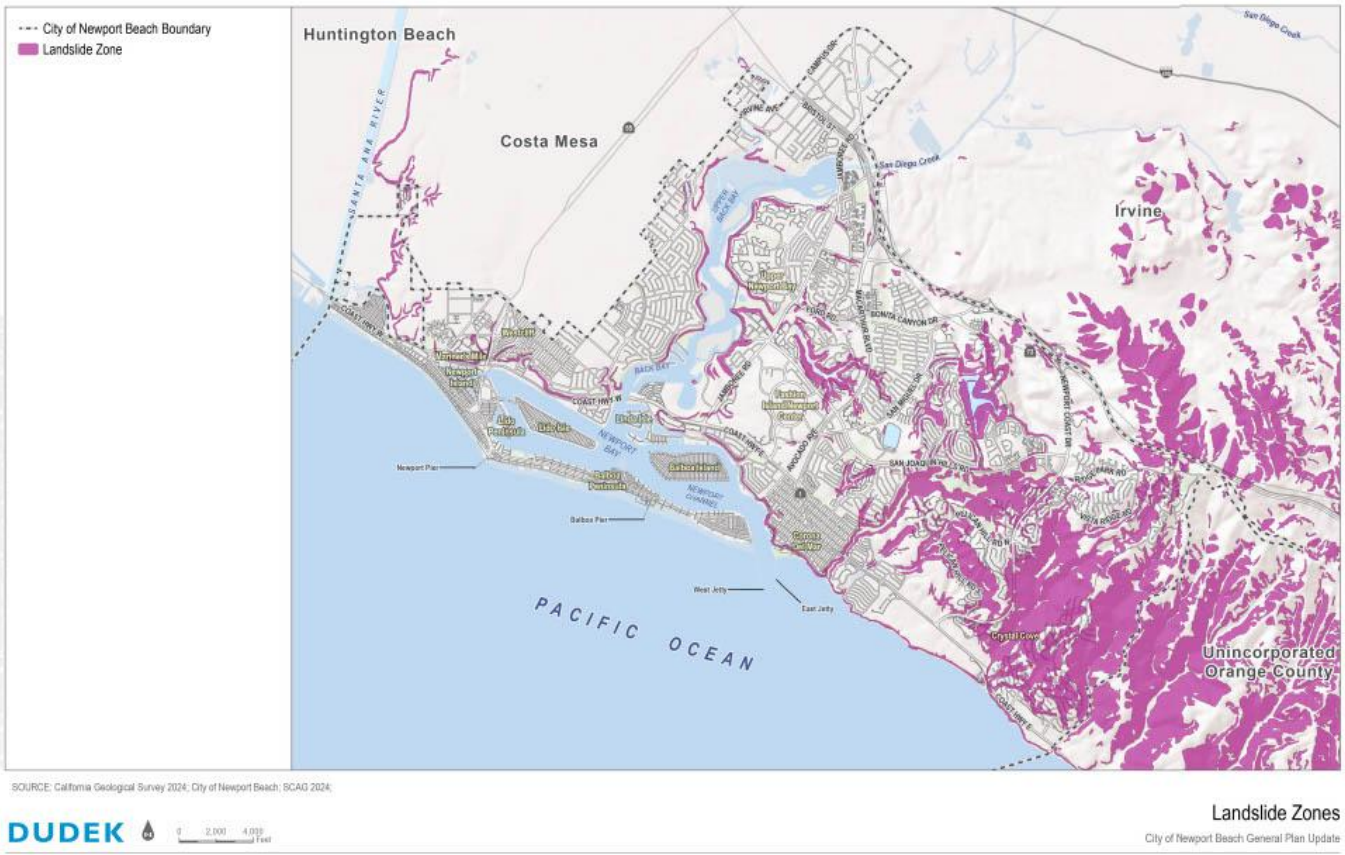
Geologic and Seismic Hazards

Geologic hazards in Newport Beach include slope failures, compressible soils, and expansive soils, all of which can damage property and pose risks to life. Slope failures often occur when one hazard triggers another, such as a storm-induced mudflow. Vulnerable areas include the San Joaquin Hills neighborhood and bluffs along Upper Newport Bay, Newport Harbor, and the Pacific Ocean. However, few slope failures have impacted hillside structures, in part due to the City's Excavation and Grading Code (Newport Beach Municipal Code Chapter 15.10). **Figure 3**, Landslide Zones, indicates areas prone to landslides.

Figure 3. Landslide Zones



Liquefaction occurs when soil loses its strength and behaves like a liquid. This can occur during earthquakes, but depends on soil saturation, soil types, and the geologic processes that formed the soil. Water-saturated soils with similar particle or grain size in a given area are most susceptible to liquefaction. **Figure 4**, Liquefaction Zones, shows the locations of soils that are susceptible to liquefaction and resulting ground failure in the event of an earthquake.

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Figure 4. Liquefaction Zones

Some areas of Newport Beach have moderately to highly expansive soils, both at the surface and exposed by grading. These soils can cause significant structural damage, including heaving and cracking of foundations, roads, sidewalks, and walls.

Newport Beach is located in the northern part of the Peninsular Ranges Province, an area that is exposed to risk from multiple earthquake fault zones. The highest risks originate from the Newport-Inglewood fault zone, the Whittier fault zone, the San Joaquin Hills fault zone, and the Elysian Park fault zone, each with the potential to cause moderate to large earthquakes that would cause ground shaking in Newport Beach and nearby communities.

Earthquake-triggered geologic effects also include surface fault rupture, landslides, liquefaction, subsidence, and seiches. Earthquakes can also lead to urban fires, dam failures, and toxic chemical releases.

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Goal S-4: Buildings and utilities that are protected from seismic and geologic hazards

Although difficult to predict, seismic and geologic events pose a risk to physical structures. To achieve resilience, new buildings are held to higher standards, and existing buildings can be modified to minimize structural damage.

- Policy S-4.1: Regularly update building and fire codes to provide seismic safety design for new development and retrofits. (Imp. 2.1)
- Policy S-4.2: Perform a building audit and subsequent seismic or geologic studies to guide seismic or geologic retrofits for existing essential facilities. (Imp. 27.1)
- Policy S-4.3: Continue to require retrofits of unreinforced masonry buildings during remodels. (Imp. 27.1)
- Policy S-4.4: Provide informational materials and technical assistance to property owners of pre-1950 buildings interested in seismic retrofits for homes and/or businesses. (Imp. 27.1)
- Policy S-4.5: Regulate the location of new essential facilities within areas that would directly be affected by seismic or geologic hazards, and all other hazards such as Fire Hazard Severity Zones (FHSZ) and FEMA flood zones, in accordance with State law. (Imp. 2.1)
- Policy S-4.6: Regulate the location of new sensitive facilities such as schools, hospitals, and facilities for the older adult population to be at a distance of at least 500 feet from active and potentially active faults, in accordance with State law. (Imp. 2.1)

Goal S-5: Stabilized bluffs to minimize erosion and prevent landslides in developed areas

- Policy S-5.1: Assess and reduce site-specific landslide vulnerabilities when necessary and during development. Prioritize studies and slope stabilization efforts in areas recently impacted by wildfires or along potential evacuation routes. (Imp. 2.1, Imp. 28.1)
- Policy S-5.2: Consider incentives for existing development to implement preventative measures for bluff erosion. (Imp. 2.1)

Flooding Hazards

Although the risk is minimal, some areas of the city that are not along the coast are still vulnerable to flooding. Inland flooding can occur due to flash flooding from small, natural channels or more moderate and sustained flooding from the Santa Ana River and San Diego Creek. Although most flood risks exists in areas closest to the shoreline, it is important that inland flooding potential is also considered for the protection of existing and planned development. Extreme storms, including atmospheric rivers, can produce intense precipitation that

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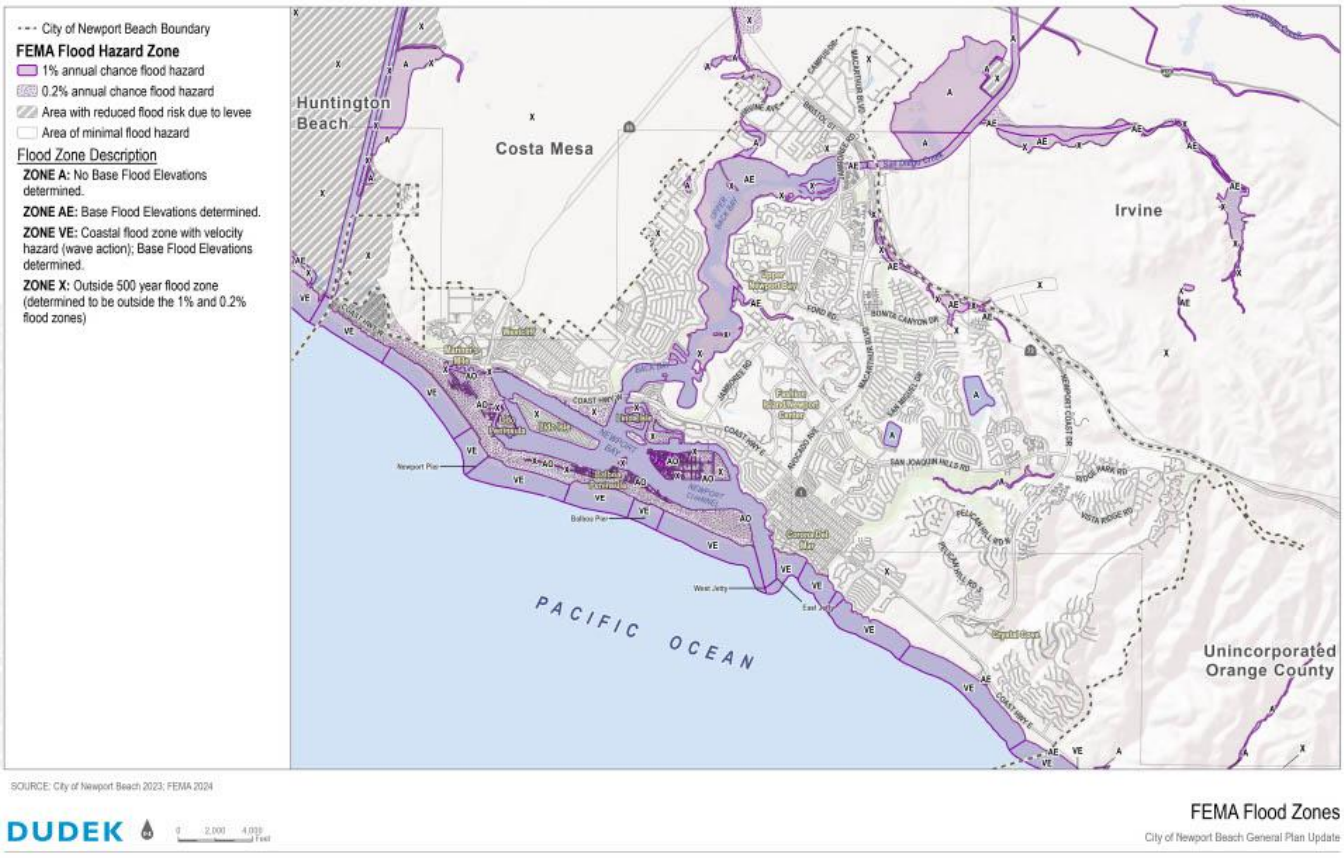
leads to both coastal and inland flooding. Between 1979 and 2013, 72 atmospheric rivers made landfall along the Southern California coast, an average of 2 to 3 events per year. The frequency of atmospheric river events may increase in the future, and these events are predicted to deposit upward of 40% more precipitation during atmospheric river events compared to historical conditions.

The Federal Emergency Management Agency (FEMA) identifies **100- and 500-year flood zones**, which include the low-lying areas in West Newport at the base of the bluffs, the coastal areas that surround Newport Bay, all low-lying areas adjacent to Upper Newport Bay, along the lower reaches of Coyote Canyon, in the lower reaches of San Diego Creek, and in a portion of Buck Gully. Flood zones in the coastal areas of Newport Beach present the most significant potential impacts to residential and commercial zones along Balboa Peninsula, the islands, and low-lying areas surrounding the harbor and Upper Newport Bay. **Figure 5** shows the 100- and 500-year flood zones. It is also important to note that many factors can contribute to how and where flooding impacts occur and that people outside of 100-year flood zones account for more than 25% of National Flood Insurance Program claims for flood loss and receive approximately one-third of disaster assistance.

Figure 5. FEMA Flood Zones



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Goal S-6: A community that is resilient to and protected from inland flooding

- Policy S-6.1: Preserve, where possible, natural watercourses or provide naturalized drainage channels within the city. Where feasible, implement restoration and rehabilitation opportunities. (Imp. 6.1, Imp. 8.1) (Policy NR-6.2.1)
- Policy S-6.2: Coordinate the needs of stormwater pollution management with the overlapping (and sometimes competing) habitat management, flood management, capital improvement projects, development, aesthetic, and other open space needs. (Imp. 6.1, Imp. 8.1) (Policy NR-6.2.2)
- Policy S-6.3: Maintain flood management standards for development, public facilities, and infrastructure located within an officially designated 100-year floodplain. Ensure development is designed in a manner that does not negatively impede or redirect floodwaters or raise anticipated flood heights. (Imp. 6.1, Imp. 8.1)
- Policy S-6.4: Require incorporation of natural drainage systems and stormwater detention facilities into new developments, where appropriate and feasible, to retain stormwater in order to increase groundwater recharge. (Imp. 6.1, Imp. 8.1) (Policy NR-6.2.3)
- Policy S-6.5: Maintain storm drainage facilities and periodically update the Storm Drain Master Plan. Consider master plan coordination with Local Coastal Program development. (Imp. 5.1, Imp. 19.1)
- Policy S-6.6: Monitor updates to FEMA flood maps to maintain up-to-date information. (Imp. 28.1)

Fire Hazards

As with all of California's coastal environments, fire risk is endemic to Newport Beach. The city's urban forest and surrounding open spaces increase wildfire hazard in areas known as the wildland–urban interface, which is where wildlands and urban or suburban areas meet. Fire hazard is also impacted by factors like fuel loading, slope, and fire weather.

To identify fire hazards, the Office of the State Fire Marshal has issued Very High, High, and Moderate Fire Hazard Severity Zones (FHSZs) in accordance with California Government Code Section 51178. The City adopted the 2025 Moderate, High, and Very High FHSZs through Ordinance 2025-11 on August 26, 2025. **Figure 6** shows the FHSZs in the City's jurisdiction as well as the current location of fire stations. **Figure 7** shows the land use designations within the FHSZs. The San Joaquin Hills and Shore Cliffs are within or adjacent to these areas. Neighboring Crystal Cove State Park to the east of Newport Beach is also characterized as a FHSZ but is within the State responsibility area. There is also a small portion of Northwestern Newport Beach, around Talbert Regional Park and the Frank and Joan Randall Preserve, that constitutes a moderate fire hazard

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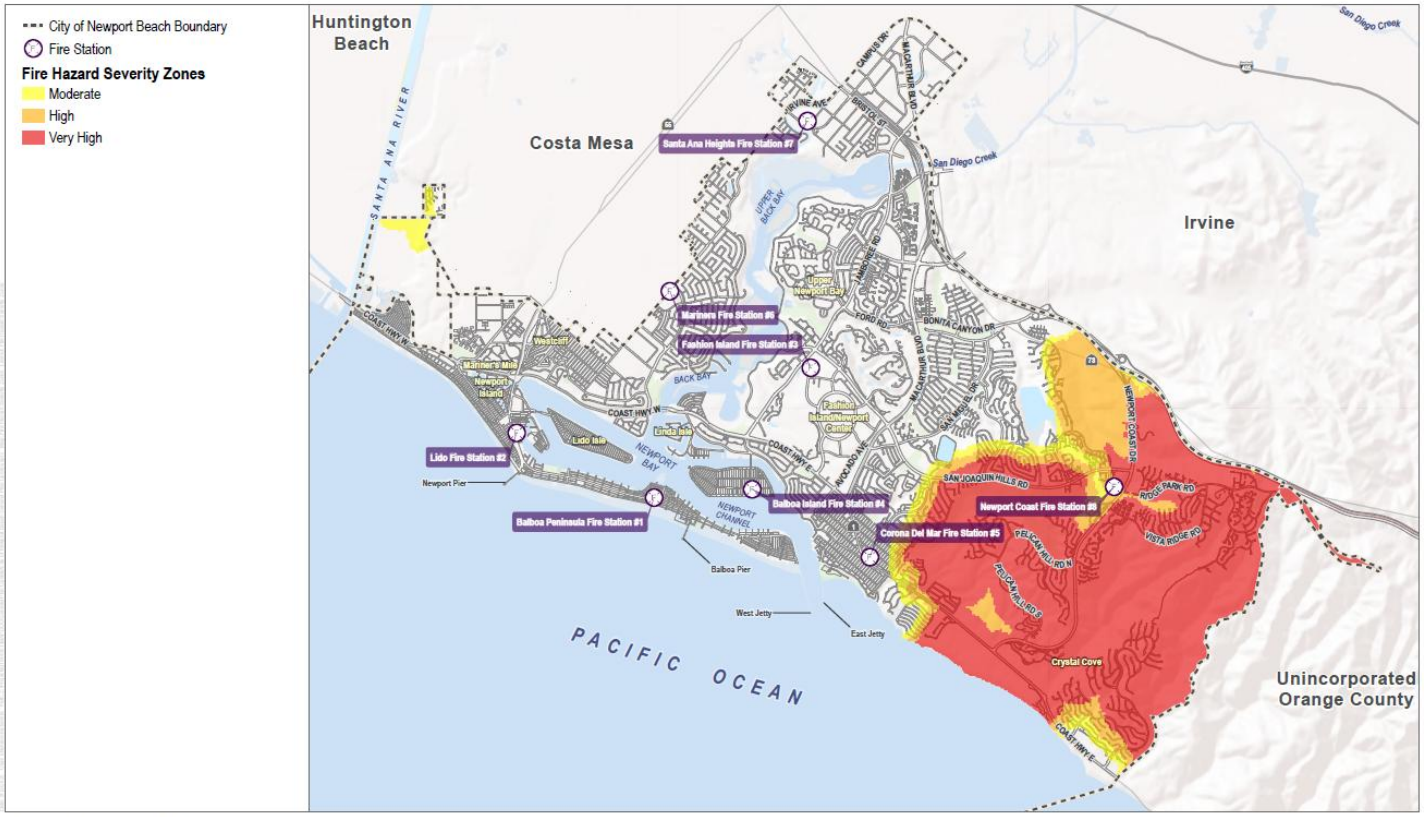
severity zone. Because urban and wildfire hazards can impact communities across Newport Beach, fire hazard reduction strategies and limits to new development or redevelopment may be necessary. In Newport Beach, homes located in a FHSZ are subject to certain Building Code regulations related to building materials for new, rebuilt, or significantly remodeled structures. There are also weed abatement, hazard reduction, and fuel modification programs administered by the City that monitor and maintain vegetation in high-risk areas within Newport Beach.[4] Continued attention to fire hazard is important to protect the community.

Figure 6. Fire Hazard Severity Zones



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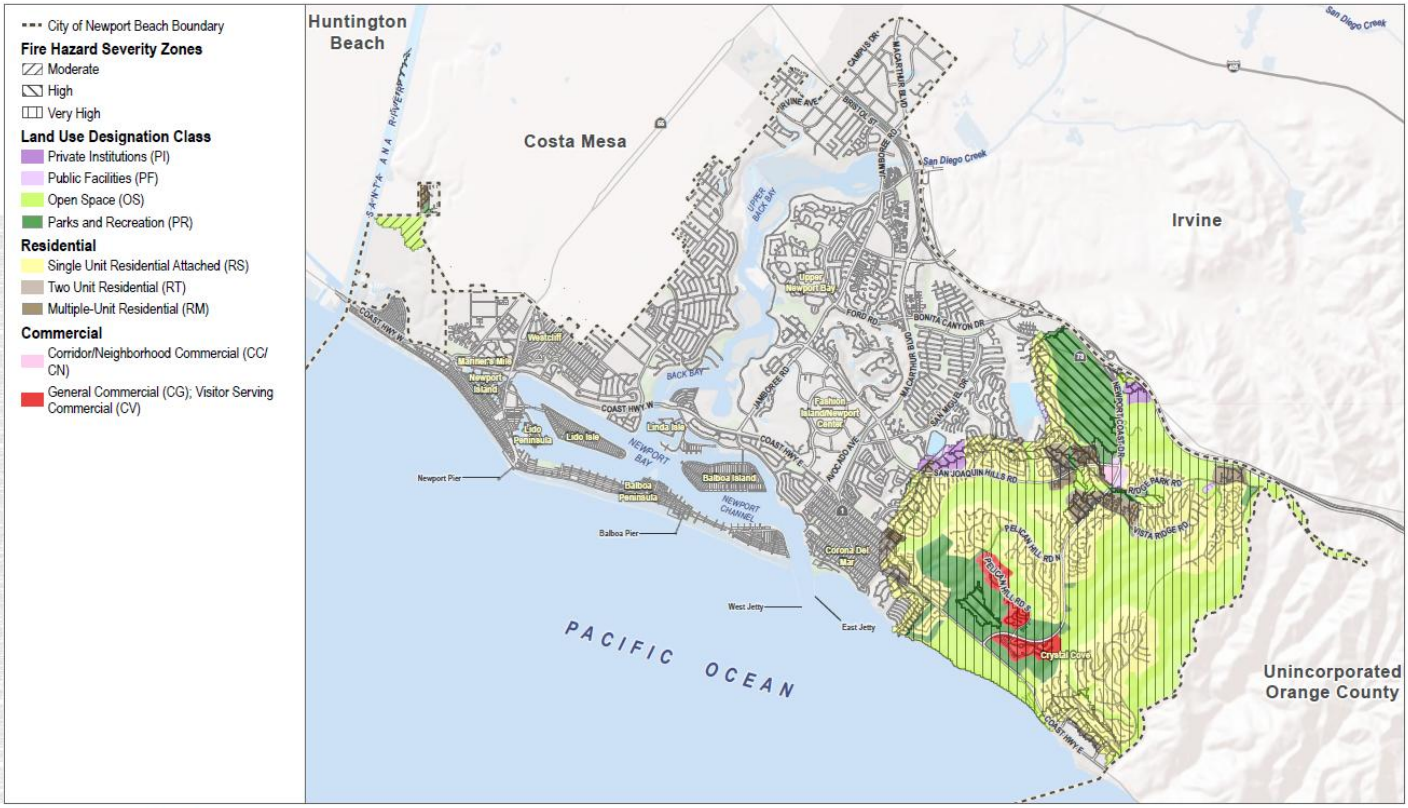
[4] City of Newport Beach. 2023. "Wildland-Urban Interface." https://www.newportbeachca.gov/government/departments/fire/fire-prevention-division/wildland-urban-interface.

Figure 7. Land Uses within Fire Hazard Severity Zones



Fire history is another important factor to consider. **Figure 8** shows the local history of fires within and adjacent to Newport Beach. Of those mapped, the largest fire was the Laguna Beach Fire of 1993, which burned more than 14,000 acres across Crystal Cove State Park, Laguna Beach, Irvine, and Newport Beach; it caused an estimated $528 million in damages.[5] Although fires have occurred in the years since the Laguna Beach Fire, many of these have been contained before they could spread further.

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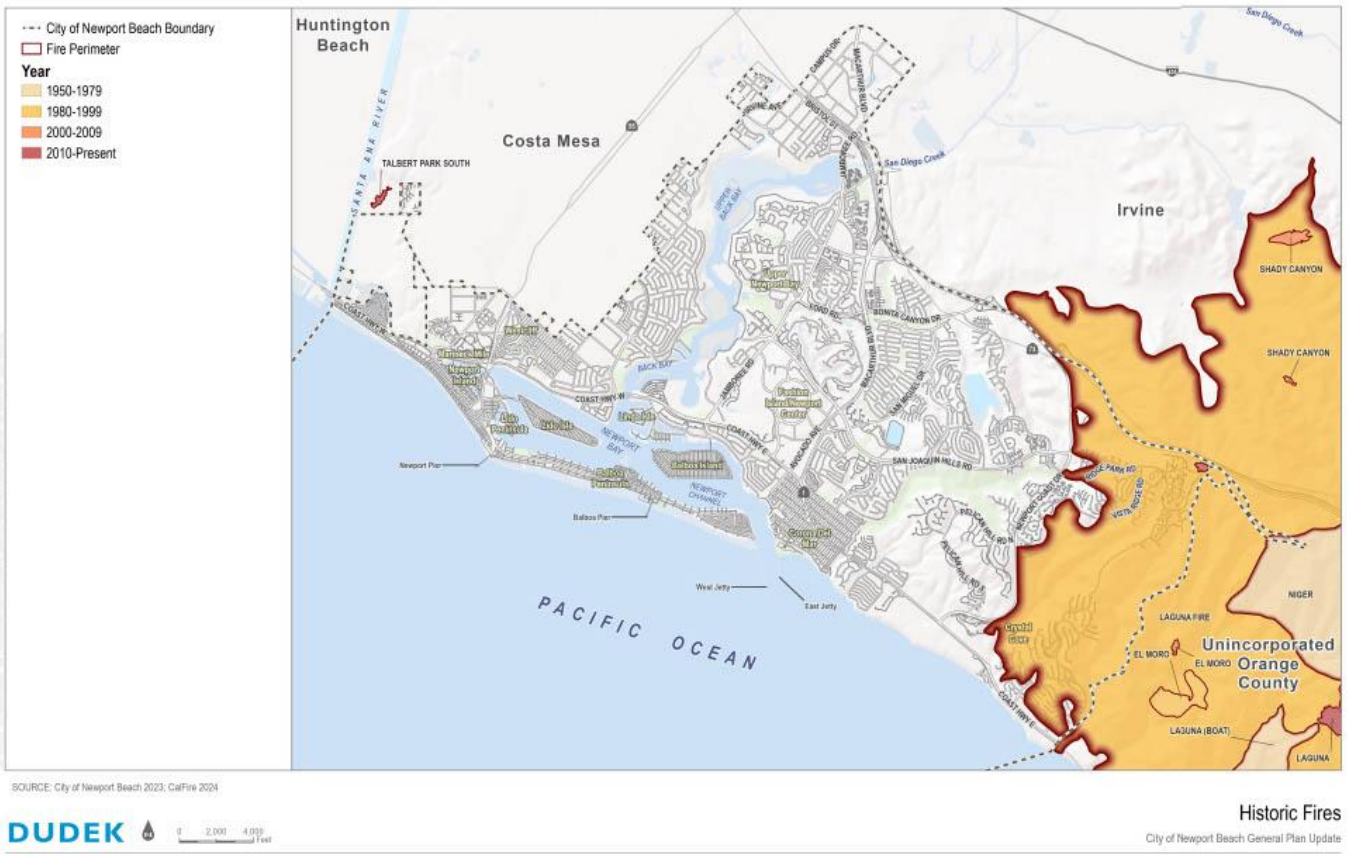
[5] Orange County Fire Department. n.d. *Orange County Firestorm 1993 October 26–November 4*. https://www.ocfa.org/Uploads/Transparency/OCFA-AAR-Orange%20County%20Firestorm.pdf.

Figure 8. Historic Fires



Due to increased drought and extreme heat, future projections using statistical models show that the number of acres burned statewide by wildfire may increase by over 75% for fires not driven by Santa Ana winds and by 60% for Santa Ana wind–driven fires under a high greenhouse gas emissions scenario. Under a moderate emissions scenario, the rate of increase in burn area is projected to slow slightly, as cooler conditions decrease the available fuel for wildfires.

Goal S-7: Reduced and well-managed urban and wildland fire hazards

- Policy S-7.1: Prohibit increases in allowed residential density in the VHFHSZ. (Imp. 2.1)
- Policy S-7.2: Require that all site plans, subdivision plans, and building plans be reviewed by the Newport Beach Fire Department to ensure compliance with appropriate fire regulations, such as California Fire Safe Regulations. (Imp. 8.1)

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- Policy S-7.3: Continue to enforce vegetation management and defensible space requirements in VHFHSZs pursuant to current statutes and regulations. Provide homeowners with assistance or resources as available. (Imp. 26.1)
- Policy S-7.4: Promote and incentivize development to occur outside of VHFHSZs. Development in the city's FHSZs shall meet the most recent version of the California Fire Code and California Building Code. A fire protection plan that describes ways to minimize potential for loss from wildfire exposure, including project-specific fuel modification methods and maintenance that achieves compliance with State requirements for defensible space, shall be required. (Imp. 7.1, Imp. 8.1)
- Policy S-7.5: Require that new developments have adequate fire flow as defined by the most recent California Fire Code. (Imp. 8.1, Imp. 17.1)
- Policy S-7.6: Landscape plans in the VHFHSZ shall be reviewed and accepted by the Newport Beach Fire Department prior to installation. These plans shall meet current minimum standards required by all applicable statutes and regulations, as well as by the Newport Beach Municipal Code. (Imp. 7.1)
- Policy S-7.7: Coordinate with the California Department of Forestry and Fire Protection, landowners, and other allied agencies to develop a community wildfire protection plan (CWPP) that facilitates the mitigation of wildfire hazards and enhances the protection of life, property, and the environment. The CWPP may consider fire hazard reduction projects and other specific initiatives, for example preparedness education. During CWPP development, consider strategies to ensure long-term maintenance. (Imp. 14.16, Imp. 22.1)
- Policy S-7.8: Maintain the city's urban forest to limit fire hazard. Prioritize vegetation management based on fire pathway and fuel modeling along with best available technology. (Imp. 16.6, Imp. 16.11, Imp. 20.1, Imp. 23.2)
- Policy S-7.9: Maintain Newport Beach Fire Department's high Insurance Services Office Public Protection Classification score. (Imp. 22.1)
- Policy S-7.10: Ensure continued coordination between the Newport Beach Fire Department and Water Department regarding fire protection, water supply, and emergency service capacity during new development review and major citywide planning efforts, such as urban water management plan development. (Imp. 17.1)

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- Policy S-7.11: Coordinate to ensure maintenance and upgrades of utility infrastructure to reduce fire hazard, such upgrades could include undergrounding of electric wires, which should also receive regular maintenance. (Imp. 14.11)
- Policy S-7.12: Collaborate with regional partners to limit increases in insurance rates for homeowners, and report to residents on progress. (Imp. 14.1, Imp. 14.3, Imp. 14.16)
- Policy S-7.13: Encourage communities to become Firewise USA designated. (Imp. 28.2)

Hazardous Materials Management

Hazardous materials are substances that are toxic, ignitable or flammable, reactive, and/or corrosive. These include substances that are carcinogenic, that can accumulate in the body's tissues (i.e., are bioaccumulative), are persistent in the environment, or are water-reactive. Exposure to hazardous materials can cause detrimental short-term and/or long-term health effects. Hazardous materials have the potential to negatively impact public health and safety and degrade the environment if not properly managed. Although hazardous materials are primarily regulated by State and Federal agencies, local governments play a pivotal role in hazard planning, enforcement, and inspection of hazardous waste generators and in increasing public awareness.

Toxic Releases

According to U.S. Environmental Protection Agency records, there are two facilities in the Newport Beach area that are listed in the Toxics Release Inventory, one near its border with the City of Irvine and one near its border with the City of Costa Mesa. The facilities are Jazz Semiconductor (computers/electronics products) and Hixson Metal Finishing (fabricated materials sector). The California Environmental Protection Agency closely monitors the emissions from these facilities to ensure that their annual limits are not exceeded.

Hazardous Waste

Hazardous waste generators include small quantity (SQGs) and large quantity generators (LQGs). SQGs generate less than 1,000 kilograms of hazardous waste per month, and LGQs generate more than 1,000 kilograms per month.

Approximately 88 SQGs and 17 LQGs operate in Newport Beach. These include pharmacies, gas stations, hospitals, industrial operations, and others.

Underground Storage Tanks

According to data from the State Water Resources Control Board, 97 underground storage tank leaks have been reported in the Newport Beach area over the last approximately 40 years. Of these, 96 sites have been

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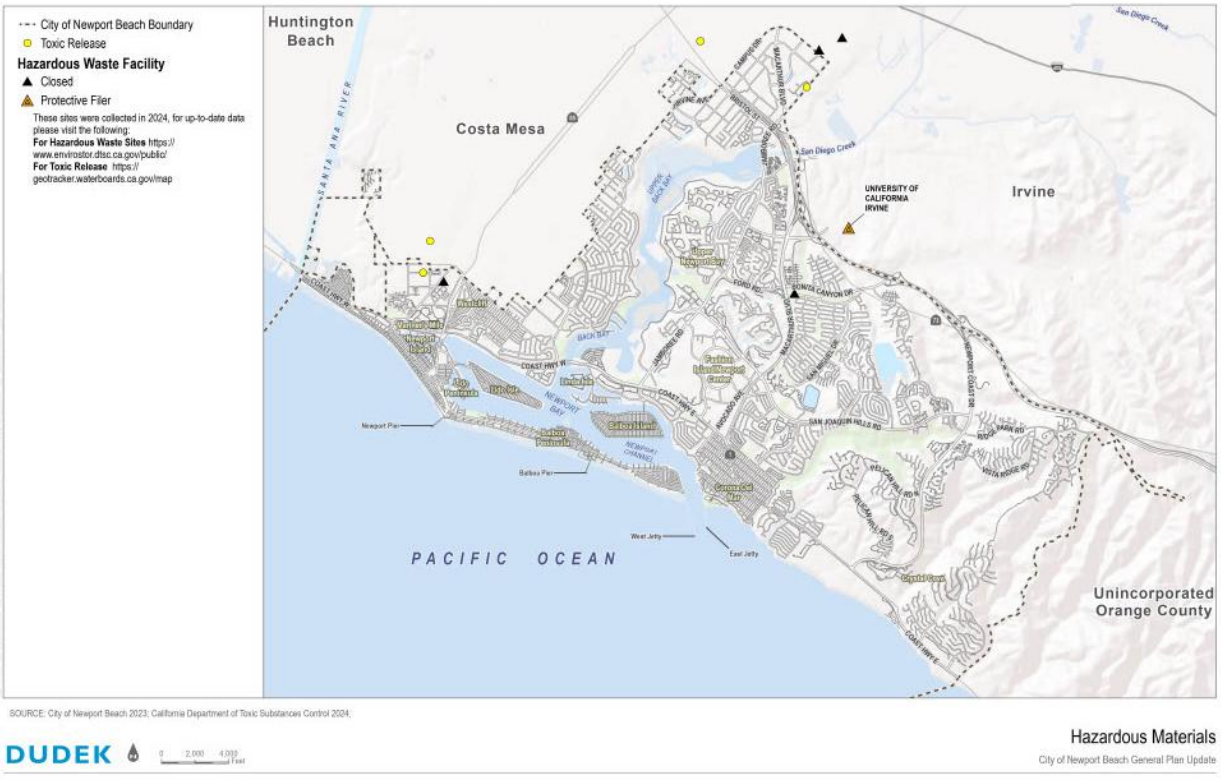
either cleaned up or deemed to be of no environmental consequence, leaving 1 case that is still open and in the process of remediation.[6] The Orange County Environmental Health Department provides oversight and conducts inspections of all underground tank removals and new tank installations.

Oil and Gas Wells

Gas and oil wells can pose significant risks to human and environmental health due to the potential for leaks of toxic substances. Active wells are regulated by the State Department of Conservation Geologic Energy Management Division (CalGEM), and idle wells (wells that have not operated for 2 or more years) are addressed through their Idle Well Program, which involves permanently sealing idle wells. More information about State programs can be found at the CalGEM website, linked here. More local information about managing oil resources can be found in the "Mineral and Oil Resources" section of the Natural Resources Element.

Figure 9 shows the locations of toxic release facilities, hazardous waste generators, the remaining leaking underground storage tank, and oil fields.

Figure 9. Toxic and Hazardous Materials



[6] SWRCB (State Water Resources Control Board). 2023. "GeoTracker – Electronic Submittal of Information (ESI)." https://www.waterboards.ca.gov/water_issues/programs/ust/.

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Goal S-8: A community protected from impacts of hazardous materials

- Policy S-8.1: Assess soil and groundwater on sites with known contamination from oil production or other uses prior to redevelopment. (Imp. 11.1)
- Policy S-8.2: Coordinate enforcement efforts with the County of Orange, the California Department of Health Services, the Santa Ana Regional Water Quality Control Board, South Coast Air Quality Management District, and any other agencies providing oversight for investigation, remediation, or management of hazardous materials. (Imp. 14.3, Imp. 14.16)
- Policy S-8.3: Conduct outreach and engagement to raise awareness of household hazardous waste disposal practices. (Imp. 29.1)
- Policy S-8.4: Monitor hazardous waste permitting and management databases. Coordinate information across departments to raise awareness. (Imp. 28.1)

Aviation Hazards

Although hazardous incidents associated with air transportation are extremely rare, aircraft accidents have the potential to be severe. The County of Orange owns and operates John Wayne Airport (JWA), the only commercial-service airport in the county. General aviation, commercial aircraft, and private jets share the airport's runway, terminal, and storage facilities.

JWA currently handles about 11.3 million passengers annually and about 130 commercial flights per day. The airport is located along the northern boundary of Newport Beach, and residential and commercial properties are located directly south of the airport's primary departure pattern for commercial and general aviation aircraft. The airport produces noise in the vicinity of the airport and its general aviation flight path. Additionally, the airport contributes to air pollution in the vicinity of the airport. In special or emergency circumstances, planes may even dump fuel, which can be hazardous if exposed to populated areas. This occurred in Cudahy in 2020, although these events are rare and not in line with Federal Aviation Administration procedures, which call for fuel to be dumped over designated unpopulated areas at higher altitudes, allowing fuel to atomize and disperse before reaching the ground.

To the extent practicable, and consistent with the JWA Settlement Agreement, there are actions the City can take to influence airport operations and help protect future residents from noise and air pollution.[7] The City's Aviation Committee, which meets quarterly, was formed to assist the City in implementing Council Policy A-17, or Airport Policy, and to continue to advocate for the JWA Settlement Agreement, which was extended twice,

[7] John Wayne Airport. 2024. "Settlement Agreement." https://www.ocair.com/about/administration/settlement-agreement/

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in 2003 and 2014, as a result of City Council and community groups' efforts. Newport Beach and several other cities located along the airport's arrival and departure corridors have publicly agreed to oppose any expansion of JWA, including additional or extended runways, or more commercial aircraft use.

The increase in the use of drones (a small unmanned aerial vehicle) is also recognized as a concern for aviation safety as this technology evolves into the future.

Goal S-9: A community protected from airport-related hazards

- Policy S-9.1: Participate in the planning process for John Wayne Airport (JWA)-related projects, including any future updates to the JWA Airport Environs Land Use Plan (AELUP). Continue to ensure new development land use intensity and compatibility align with the most currently available JWA AELUP to minimize potential safety impacts on residents. (Imp. 14.3)
- Policy S-9.2: Continue to advocate for restricting airport expansion or operational changes that could increase noise or air pollution. (Imp. 14.3)
- Policy S-9.3: Study and consider adopting regulations concerning emerging technologies such as drones and aerial taxis. (Imp. 8.1)
- Policy S-9.4: Support the provision of aircraft rescue training for first responders. (Imp. 22.1)

Extreme Heat

Extreme heat is an emerging hazard that should be monitored as extreme weather conditions continue to change, even in a coastal community with cooling offshore winds and many shade-providing trees. Extreme heat days are relative to a location's average temperature, so in Newport Beach an extreme heat day is considered a day that exceeds 87.5°F. Historically, this happens about 3 days per year, but by 2050 this is projected to occur an average of 11 days per year under a high greenhouse gas emissions scenario (see **Figure 10)**.[8] As summer temperatures continue to get hotter and heat waves become more common, the city must adapt to changing temperatures to protect the health of residents and visitors, particularly vulnerable populations. Strategies such as air conditioning, home weatherization, and increased shade in public areas can help the community stay cool on hot days.

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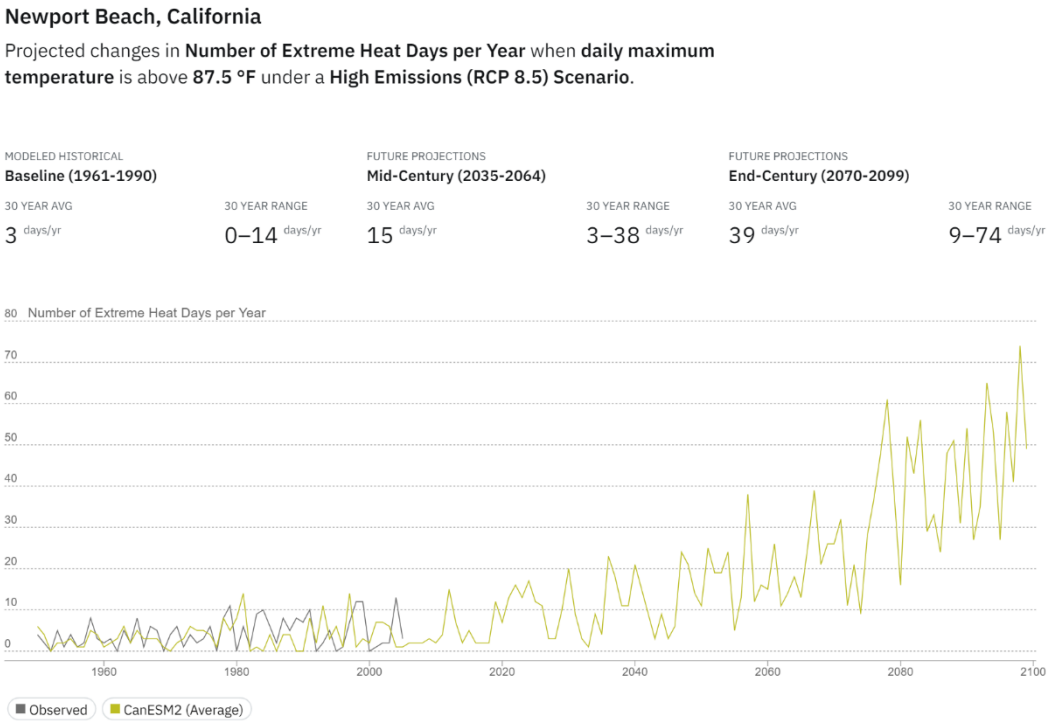
[8] California Energy Commission. 2023. "Cal-Adapt Extreme Heat Days & Warm Nights." https://cal-adapt.org/tools/extreme-heat.

Figure 10. Extreme Heat Day Projections



Source: Cal-Adapt. Data: LOCA Downscaled CMIP5 Climate Projections (Scripps Institution of Oceanography), Gridded Observed Meteorological Data (University of Colorado Boulder), LOCA Derived Products (Geospatial Innovation Facility).

Goal S-10: A built environment adapted to provide relief from extreme heat

- Policy S-10.1: Improve cooling centers with resilience improvements like battery backup power and amenities that promote a sense of community and socialization. (Imp. 23.2, Imp. 23.4)
- Policy S-10.2: Explore potential for additional cooling centers to fill gaps in service. Consider how demand may not be met for vulnerable populations or may not be equitably spaced throughout the city. (Imp. 23.3, Imp. 28.2)
- Policy S-10.3: Publicize home weatherization programs or other opportunities to adapt homes to higher temperatures. (Imp. 29.1, Imp. 29.3)
- Policy S-10.4: Evaluate tree canopy cover in parks and the public right-of-way, considering shade and priority active transportation corridors. (Imp. 20.1, Imp. 23.1)
- Policy S-10.5: Review cool pavement technology effectiveness and consider a cool pavement pilot program. (Imp. 16.3)

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Emergency Preparedness, Response, and Recovery

The following section discusses Newport Beach's notification system, evacuation system, response plan, mutual aid, shelters and cooling centers, and recovery programs.

Notification System

Communication systems are an essential component of emergency preparedness and response. Alert and warning systems quickly inform the public of imminent dangers. Effective communication systems can help facilitate response efforts, connect people to resources, and educate people about emergency preparedness and response. These systems include the Integrated Public Alert and Warning System, the Emergency Alert System, the Wireless Emergency Alert, the California State Warning Center, the National Weather Service, Alert Orange County (AlertOC), Newport Beach Cable TV, and outdoor emergency sirens, covering various emergencies and jurisdictional levels.[9]

In addition to these, Newport Notified is an alert system managed by the Newport Beach Police Department that is designed to distribute both general and emergency information from the Police Department to the local community. Its primary function is to inform residents about safety-related issues, including traffic updates and community news.

Outdoor emergency sirens, located at strategic locations near the coast, can also be activated in the event of an emergency, such as a tsunami, to signal to residents and visitors to check local TV Channel 3 and radio station 107.9 FM KWVE for further instructions.

Evacuation and Response

Because no two disasters are ever the same, high-quality public safety requires significant planning and preparation to support a variety of needs in a variety of conditions. Public safety must consider needed facilities, equipment, staff, training, public education, planning, and post-disaster recovery. Adequate planning and preparation lead to strong response and recovery from hazard events, including fire, flooding, coastal hazards such as tsunamis and rogue waves, earthquakes, geologic hazards such as landslides, and extreme heat.

The City has developed and implemented a response plan for evacuation of low-lying areas in the event of a tsunami warning. This effort includes the installation of warning sirens, signs identifying evacuation routes,

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[9] City of Newport Beach. 2022. *Emergency Operations Plan*. https://www.newportbeachca.gov/how-do-i/find/disaster-preparedness-information.

and public education training. See Evacuation Route Analysis to see the evacuation route analysis and maps for both tsunami and wildfire.

Cities are required to assess water supply availability in the event of significant fire or geologic hazards. An analysis of "peakload water supply," detailed in the Peakload Water Supply Analysis, indicates that if an earthquake, severe fire, or other catastrophic event impairs the city water supply or delivery of water, short-term emergency water can be supplied by neighboring water districts. Furthermore, in the event of a drought, the city has sufficient water supply for multiple years. In the event of a multiple-year drought, the City will implement demand management measures as part of the Water Shortage Contingency Plan, with more aggressive measures reserved for more severe droughts.[10]

Essential and Public Facilities

The city has essential and public facilities that are important to protect from hazards. Essential facilities are those that are needed in the event of an emergency or during the immediate recovery after an emergency.

Planning and Mutual Aid

The California emergency resource management system relies on a statewide mutual aid organization to provide additional resources to local governments when needed. Newport Beach has entered the California Disaster and Civil Defense Master Mutual Aid Agreement, enabling the City and other public agencies, political subdivisions, and municipal corporations to offer mutual assistance during emergencies.

The Newport Beach Emergency Council oversees the preparedness of City departments. Additionally, the Newport Beach Fire Department is part of the California Fire and Rescue Mutual Aid System, operating under the California Fire Service and Rescue Emergency Mutual Aid Plan. Likewise, the City Police Department is part of the California Law Enforcement Mutual Aid System, operating under the California Law Enforcement Mutual Aid Plan.

The City also has mutual aid agreements with the neighboring Cities of Irvine and Laguna Beach, which establishes procedures to share emergency management personnel, facilities, operational functions, and technology.

The City also plans for hazards through various planning documents that serve functions separate from the Safety Element. For example, the Emergency Operations Plan develops protocols for emergency response, and the Local Hazard Mitigation Plan fulfills Federal requirements.

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[10] City of Newport Beach. 2020. *Water Shortage Contingency Plan.* https://www.newportbeachca.gov/government/departments/utilities/water-services

Recovery Programs

Chapter 15.12 of the Newport Beach Municipal Code establishes standard City procedures when residents or businesses are making repairs to reoccupy structures damaged in a natural or human-made hazard. This system uses visual inspections and clear and concise placards placed on building entrances to ensure safety for all involved. Recovery efforts within Newport Beach are able to occur more efficiently by having this type of standard established ahead of a disaster.

The City participates in the National Flood Insurance Program, managed by FEMA, which enables property owners to purchase flood insurance. As a condition of participation, the City has adopted and implemented local floodplain management regulations that reduce the risk of future flooding. When FEMA updates flood risk maps, Newport Beach and other participating cities must update their regulations accordingly.

Goal S-11: Tested and effective communication systems for emergency preparedness and response

- Policy S-11.1: Promote Newport Notified as an emergency communications channel in addition to AlertOC, social media, and other communication channels. (Imp. 29.1)
- Policy S-11.2: Regularly conduct testing of communication protocols with neighboring local governments. (Imp. 14.1)
- Policy S-11.3: Coordinate with neighboring local governments and regional agencies ahead of planning improvements to emergency communication systems. (Imp. 14.1, Imp. 14.3)
- Policy S-11.4: Document experiences with early warning systems after emergency events where they have been used to assess opportunities for improvements. (Imp. 28.2)

Goal S-12: High-quality public safety, emergency preparedness, and response services

- Policy S-12.1: Conduct public engagement and education for a variety of hazards and emergency resources. Use multiple platforms and methods, including digital options like the City website, physical options like flyers or bulletin boards, and in-person methods like trainings or tabling at community events. Coordinate with Community Emergency Response Team (CERT) to recruit volunteers and facilitate public education of hazards and circulate information on evacuation best practices and notification systems to ensure that residents have the latest information on evacuation routes and centers. Consider methods that vary depending on the expected spatial extent of hazard impacts, such as engaging parts of the community that are most at risk of a respective hazard. (Imp. 29.1)

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- Policy S-12.2: Collaborate with homeowners associations to continue to promote emergency preparedness resources and practices—for example, incorporating a neighborhood-scale buddy system into CERT trainings. (Imp. 29.1)
- Policy S-12.3: Develop resources for visitors in tsunami zones to quickly communicate evacuation procedures. Consider signage, web resources, and collaboration with local businesses. (Imp. 29.1)
- Policy S-12.4: Continue to maintain cooperative and mutual aid agreements with adjoining local governments, the County of Orange, and State and Federal Agencies. (Imp. 28.2)
- Policy S-12.5: Conduct regular testing of emergency operation protocols. (Imp. 28.2)
- Policy S-12.6: Update the Local Hazard Mitigation Plan every 5 years in line with Federal and State guidance and incentives. (Imp. 28.2)
- Policy S-12.7: Review the Emergency Operations Plan every year and revise as necessary. (Imp. 28.2)
- Policy S-12.8: Maintain public facilities with equipment and supplies to serve as evacuation centers or shelters. (Imp. 28.2)
- Policy S-12.9: Develop and promote an occupational pipeline program for future lifeguards. (Imp. 23.4)
- Policy S-12.10: Explore opportunities for providing workforce housing for first responders. (Imp. 25.1)
- Policy S-12.11: Coordinate with the Army Corp of Engineers, County of Orange, Irvine Ranch Water District, and Serrano Irrigation District to provide input on plans related to the risk of dam failure.
- Policy S-12.12: Maintain up-to-date standards for Fire Department trainings as well as trainings for all first-responders.

Goal S-13: Evacuation routes and centers that are maintained to provide functionality during hazardous conditions

- Policy S-13.1: Collaborate with neighboring local governments or regional agencies in future studies of evacuation routes, emergency response capacity, and access points. (Imp. 14.1, Imp. 14.3, Imp. 14.4, Imp. 16.1, Imp. 28.1)
- Policy S-13.2: When reviewing new discretionary residential developments, enforce the most recent California Fire Code as it relates to roadway design, street addressing, and signage. If the development has only one point of access, consider the potential for additional access points. (Imp. 8.1, Imp. 16.6)
- Policy S-13.3: During regular road maintenance, or when possible and deemed necessary, improve existing roads to meet standards for minimum road widths, surface, grade, radius, and turnarounds as

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defined by the most recent California Fire Code, to ensure emergency vehicle access is possible. (Imp. 16.6)

- Policy S-13.4: When possible and deemed necessary, require non-conforming developments to provide upgrades and maintenance to meet the most recent California Fire Code standards, including road standards and vegetative hazards.
- Policy S-13.5: Consider feasibility of non-automobile options (i.e., bikes, e-bikes or scooters, boats) when conducting tsunami evacuation planning or studies. Integrate findings into infrastructure planning and outreach. (Imp. 28.2)

Public Safety

For people to feel comfortable and enjoy their communities, it is important that they feel safe. Providing a sense of comfort and safety in the public realm can be achieved through design and development that encourages "eyes on the street." This concept uses place-based design in public spaces to increase community awareness, build social cohesion, improve community bonds, enhance a sense of safety, and increase social interaction. Designing for safety can include regular maintenance of parks, lighting, trash, and streets, which requires a high level of fiscal responsibility. Further, communities with a balanced mix of uses such as residential, retail, employment, and a diversity of land uses, can draw people at all hours of the day, increasing "eyes on the street" and community safety.

Many aspects of public safety are dealt with by the Police Department, which has its own strategic planning, programs, and actions that are often better suited for adaptable and efficient response than a general plan's overarching approach. However, components of urban design, such as promoting "eyes on the street," can contribute to a sense of comfort and safety.

Goal S-14: A community where residents, employees, and visitors feel a sense of comfort and safety

- Policy S-14.1: Continue to maintain vegetation and trash receptacles in parks and public spaces to ensure sightlines are maintained and spaces are inviting. (Imp. 20.1, Imp. 23.2)
- Policy S-14.2: During plan development and subsequent enhancement projects for parks and public spaces, consider improvements to promote sightlines and appropriate lighting. (Imp. 20.1, Imp. 20.3, Imp. 23.1, Imp. 23.2)
- Policy S-14.3: When an emerging safety concern is identified, evaluate the extent of safety concerns, locations of areas of concern, and potential design and development issues that could be addressed through policy and code updates. (Imp. 14.16)

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