SECTION 3: RISK ASSESSMENT

What is a Risk Assessment?

Risk assessment is the process of estimating or calculating the potential losses (in terms of life, injuries, and property and economic damage) resulting from a hazard event. To conduct this analysis, it is necessary to identify and understand the hazards that can impact the community (hazard identification and hazard profiling), assess the vulnerability of the people, buildings and infrastructure that can be impacted by each hazard identified (vulnerability assessment and asset inventory), and estimate the potential losses (risk analysis). Each of these tasks or steps in the process, as it pertains to the city of Newport Beach, is described further below:

Hazard Identification

This is the description of the geographic extent, potential intensity and the probability of occurrence of a given hazard. Maps are frequently used to display hazard identification data. The city of Newport Beach and its residents and visitors can be impacted by earthquakes (and secondary hazards triggered by earthquakes, including fault rupture, liquefaction, tsunami and seiche, slope failures, dam and water reservoir failures, accidental releases of hazardous materials and after-earthquake fires), flooding (due to storms, tsunami and sea level rise), wildfires, slope failures, and strong winds (such as Santa Anas and tornadoes).

Man-made hazards that could impact the area include urban fires, terrorist attacks using weapons of mass destruction, accidental releases of hazardous materials, aviation accidents, and civil unrest events. At this time, and for this document, the City has chosen to address only natural hazards, and specifically the hazards of earthquakes, floods, wildfires, slope failures and strong winds. These are the natural hazards with the potential to cause the most damage, in terms of losses, at the city. Each of these hazards is described in detail in the following sections. The geographic impact that each of these identified hazards may pose on Newport Beach is identified where possible, although several of the hazards have a regional extent that exceeds the boundaries of the city. Maps that show the estimated geographic reach of these hazards in the city of Newport Beach are an important component of this document. These maps are included within the section that describes the hazard being considered (Section 6: Earthquakes; Section 7: Floods; Section 8: Wildfires; Section 9: Landslides), and all together in Appendix H (see list of maps in Table 3-1 below). There are no city-specific maps provided in Section 10: Windstorms, because the entire region is susceptible to strong winds, and there is not one specific area in the city more likely to be impacted by this hazard.

Table 3-1: List of Maps that are Part of this Plan

Map / Plate	Map Title	Section of the Plan
2-1	Freeways and Major Arterial Roads in the Newport Beach Area	Section 2
2-2 / H-16	Geologic map of Newport Beach, California	Section 2
2-3	Regional Active and Potentially Active Faults Near Newport Beach	Section 2
3-1 / H-1	Essential Facilities In Newport Beach, California	Section 3
6-1	Faults In and Near Newport Beach	Section 6
6-2A 6-2B	Ground Shaking Zones in California Ground Shaking Zones in Orange County and Surrounding Areas	Section 6
6-3 / H-2	Historical Seismicity in Newport Beach (1855- March 2014)	Section 6
6-4 / H-3	Faults Mapped in the Newport Beach Area	Section 6
6-5	Intensity Map for a Magnitude 6.6 Earthquake Scenario on the San Joaquin Hills	Section 6

Map / Plate	Map Title	Section of the Plan
	Fault	
6-6	Intensity Map for a Magnitude 6.8 Earthquake Scenario on the Whittier Fault	Section 6
6-7	Intensity Map for a Magnitude 7.8 Earthquake Scenario on the San Andreas Fault (Repeat of the 1857 Fort Tejon Earthquake)	Section 6
6-8 / H-4	Seismic Hazards in Newport Beach	Section 6
6-9	Census Tracts Used in the HazUS Analysis (in red) Compared to the City Boundaries (in blue)	Section 6
6-10 / H-1	Essential Facilities in Newport Beach (in 2014)	Section 6
6-11 / H-5	Damage Distribution to Residential Structures as a Result of Four Earthquake Scenarios	Section 6
6-12 / H-6	Damage Distribution to Commercial Structures as a Result of Four Earthquake Scenarios	Section 6
7-1	Shaded Relief Map Showing General Drainage Areas Within the City of Newport Beach	Section 7
7-2	Map Showing the Course of the Santa Ana River and Location of Newport Beach, Huntington Beach, Prado Dam, and the San Bernardino Mountains	Section 7
7-3 / H-7	Geomorphic Map of Newport Beach Showing the Canyons Draining the San Joaquin Hills and Low-Lying Areas in the City	Section 7
7-4	Location Map Showing the San Diego Creek Watershed	Section 7
7-5	Wave Exposure Map for Newport Beach	Section 7
7-6 / H-8	FEMA Flood Zones Map for Newport Beach	Section 7
7-7 / H-10	Tsunami Inundation Map at Mean Sea Level and Mean Higher High Water Level	Section 7
7-8 / H-11	Tsunami Runup Inundation Caused by a Potential Submarine Landslide	Section 7
7-9 / H-9	Dam Failure Inundation Map	Section 7
8-1 / H-12	Historical Wildfires in the Newport Beach Area	Section 8
8-2 / H-13	Wildfire Hazard Map for Newport Beach Showing Local and State Responsibility Areas	Section 8
8-3 / H-14	Areas with Vegetation Management Requirements in Newport Beach	Section 8
9-1 / H-16	Geologic Map of Newport Beach The red zones show areas still undeveloped where landslides have been mapped. Previously mapped landslides in now-graded areas are shown in purple. (for an explanation of the geologic units refer to Plate H-16a)	Section 9
9-2 / H-18	Slope Distribution Map of Newport Beach	Section 9
9-3 / H-19	Slope Instability Map of Newport Beach Red zones are mapped landslides in still mostly undeveloped land; purple and green zones are previously mapped landslides in or near now-graded areas, respectively; orange zones have a very high instability rating, yellow areas have a high slope instability rating.	Section 9
H-17	Engineering Materials Map of Newport Beach	Appendix H

Note: These maps were derived from publicly available sources. Care was taken in the creation of these maps, but the maps are provided "as is." The City of Newport Beach and its consultant cannot accept any responsibility for errors, omissions or positional accuracy, and therefore, there are no warranties that accompany these maps. Although information from land surveys may have been used in the creation of these maps, this does not mean that the maps represent or constitute a land survey. Users are cautioned to field verify the information on these products before making any decisions.

Profiling Hazard Events

This process describes the causes and characteristics of each hazard, how these hazards have affected the city of Newport Beach in the past, and what parts of Newport Beach (and its population, infrastructure, and environment) have historically been vulnerable to each specific hazard. A profile of each hazard discussed in this Plan is provided in Sections 6 through 10, with specific historical events known to have impacted the community highlighted where possible. Refer to the appropriate section of the report for these historical descriptions of past hazard events. .

Vulnerability Assessment/Inventorying Assets

This is a combination of hazard identification with an inventory of the existing property development(s) and population(s) exposed to a hazard. The city of Newport Beach is mostly built out. New development can be anticipated in the Newport Coast area, with infill or replacement of existing structures anticipated in the older portions of the City. Re-development will provide an opportunity to build more seismically resistant structures, potentially with green components that make better use of existing natural resources, and that incorporate new technologies that make buildings more earthquake and fire resistant.

During the vulnerability assessment it is especially important to assess the expected performance of critical facilities. Critical facilities provide essential products and services to the general public that are necessary to preserve the welfare and quality of life, and fulfill important public safety, emergency response, and/or disaster recovery functions (additional information on critical facilities is provided in a subsection below). The critical facilities in Newport Beach have been identified and their locations are shown on Map 3-1 and Plate H-1 (Appendix H).

It is important to realize that in the urban setting that defines Newport Beach and the surrounding communities, a large-scale disaster, such as an earthquake or flood, will not be confined to corporate boundaries. Differences in the magnitude of the disaster, however, will be defined in great part by how each city in the impact area has prepared for, responds to, and recovers from the event. Thus, having a detailed plan in place that addresses the specific vulnerabilities of the city, and provides mitigation measures that are implemented to reduce the hazard to critical facilities and other public and private properties can make the community significantly more disaster-resistant. That is the main goal of this Plan.

Risk Analysis

The purpose of this task is to estimate the potential losses in a geographic area over a given period of time by assessing the damage, injuries, and financial costs likely to be sustained. This level of analysis involves using mathematical models. The two measurable components of risk analysis are: 1) magnitude of the harm that may result, and 2) the likelihood (probability) of the harm occurring. Describing vulnerability in terms of dollar losses provides the community and the State with a common framework by which to measure the potential effects of a given hazard on the assets in the area.

Assessing Vulnerability/ Analyzing Development Trends

This task provides a general description of land uses and development trends within the community so that mitigation options can be considered in land use planning and future land use decisions. This Plan provides comprehensive description of the character of Newport Beach in the Community Profile section (see Section 2). This description includes the geography and environment, population and demographics, land use and development, housing and community development, employment and industry, and transportation and commuting patterns. Analyzing these components of Newport Beach

can help to identify potential problem areas, and can serve as a guide for incorporating the goals and ideas contained in this Mitigation Plan into other community development plans.

Hazard assessments are subject to the availability of hazard-specific data. Gathering data for a hazard assessment requires a commitment of resources on the part of the community being analyzed, in addition to participating organizations and agencies. Each hazard-specific section of the Plan includes a section on hazard identification using data and information obtained from City, County or State agency sources.

A loss estimate for the city of Newport Beach was conducted for the hazard of earthquakes (see Section 6). Four earthquake scenarios were considered. These estimates were done using HazUS, a standardized methodology for earthquake loss estimation based on a geographic information system (GIS). HazUS was created as a project of the National Institute of Building Sciences, funded by the Federal Emergency Management Agency (FEMA), and it is based on guidelines and procedures developed to make standardized loss estimates at a regional scale (allowing estimates to be compared from region to region). HazUS is designed for use by State, regional and local governments in planning for loss mitigation, emergency preparedness, response and recovery. HazUS addresses nearly all aspects of the built environment, and many different types of losses. The earthquake component has been tested against the experience of several past earthquakes, and against the judgment of experts.

The HazUS program also has components to estimate losses as a result hurricanes and floods. HazUS was used to estimate the assets that would be impacted by both a 100- and 500-year flood event in the City (see Section 7). A quantitative vulnerability assessment for strong wind events was not conducted, but qualitative assessments based on the losses reported in past (historical) similar events are provided where data were available (Section 10).

There are numerous strategies that Newport Beach can take to reduce risk. These strategies are described in the action items in Section 4, classified by priority and timeline. Action items that address a multitude of hazards simultaneously are also presented in Section 4. Mitigation strategies can help reduce disruption to critical services, reduce the risk to human life, and alleviate damage to personal and public property and infrastructure.

Critical Facilities and Infrastructure

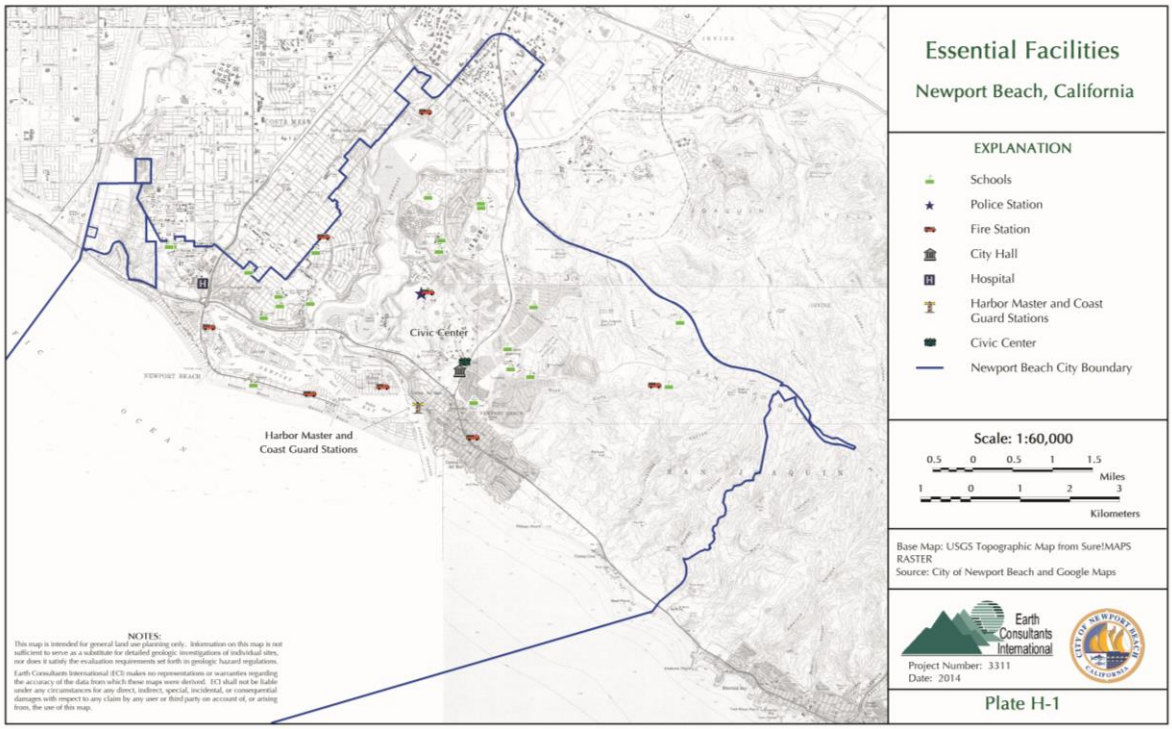
Essential facilities are those parts of a community's infrastructure that must remain operational after a disaster. Essential facilities include schools, hospitals, fire and police stations, emergency operation centers, and communication centers (see Map 3-1). A vulnerability assessment for these facilities involves comparing the locations of these facilities to the hazardous areas identified in the city. Other important (critical) facilities often considered in risk assessments include:

- **High-risk facilities**, if severely damaged, may result in a disaster far beyond the facilities themselves. Examples include power plants, dams and flood control structures, freeway interchanges, bridges, and industrial plants that use or store explosives, toxic materials or petroleum products.

- **High-occupancy facilities** have the potential of resulting in a large number of casualties or crowd-control problems. This category includes high-rise buildings, large assembly facilities, large malls and shopping centers (such as Fashion Island), and large multifamily residential complexes.

- **Dependent-care facilities**, such as preschools and schools, rehabilitation centers, prisons, group care homes, and nursing homes, house populations with special evacuation considerations.

Map 3-1: Map Showing Location of the Essential Facilities In Newport Beach
(a larger version of this map is provided in Appendix H, Plate H-1)



- **Economic facilities** are those facilities that should remain operational to avoid severe economic impacts. These facilities include banks, archiving and vital record-keeping facilities, airports, and large industrial or commercial centers.

- Facilities critical to **government response and recovery** activities (i.e., life safety and property and environmental protection) include: 911 centers, emergency operations centers, police and fire stations, public works facilities, communications centers, sewer and water facilities, hospitals, bridges and roads, and shelters.

- **Lifelines** are those services that are critical to the health, safety and functioning of the community. They are particularly essential for emergency response and recovery after a disaster. Furthermore, certain critical facilities designed to remain functional during and immediately after a disaster, such as an earthquake, may be able to provide only limited services if the lifelines they depend on are disrupted. Lifeline systems include water, sewage, electrical power, communication, transportation (highways, bridges, railroads, and airports), natural gas, and liquid fuel systems.

Federal Requirements for Risk Assessment

Federal regulations for hazard mitigation plans outlined in 44 CFR Part 201 include a requirement for risk assessment. This requirement is intended to provide information that will help communities identify and prioritize mitigation activities that will reduce losses from the identified hazards. There are five natural hazards profiled in this Mitigation Plan, including earthquakes, floods, wildfires, landslides and windstorms. The Federal criteria for risk assessment and information on how Newport Beach's Natural Hazard Mitigation Plan meets those criteria are outlined in Table 3-2 below.

Table 3-2 - Federal Criteria for Risk Assessment

Section 322 Plan Requirement	How is this addressed?
Identifying Hazards	Each hazard section (Sections 6 through 10) provides a description of the natural condition or phenomenon and its potential impact on the city of Newport Beach. To the extent GIS data are available for these hazards, maps that identify the areas most likely to be impacted by each hazard have been developed for the City of Newport Beach. These Hazard Maps are listed in Table 3-1 and are included in Appendix H.
Profiling Hazard Events	Each hazard section (Sections 6 through 10) includes documentation on the history of past hazard events, and the causes and characteristics of the hazard in the city. Where the data were available, the cost to life and property resulting from these events is provided.
Assessing Vulnerability: Identifying Assets	Where data are available, the vulnerability assessment for each hazard addressed in the mitigation plan includes an inventory of critical facilities within hazardous areas. Each hazard section provides information on vulnerable areas in the city (Sections 6 - 10). Potential mitigation strategies for each hazard type are provided in the appropriate section. Mitigation actions that the City of Newport Beach proposes to implement in the next 5-year period are listed in Section 4. Mitigation actions that the City has already completed or that are being implemented as part of day-to-day operations, are listed in Section 5.
Assessing Vulnerability: Estimating Potential Losses	The Risk Assessment Section of this Plan (Section 3) identifies key critical facilities and lifelines in the city, and includes a map of the essential facilities. Vulnerability assessments have been completed for the hazards addressed in the plan, and quantitative estimates were made for each hazard where data were available (Sections 6 and 7).
Assessing Vulnerability: Analyzing Development Trends	The Community Profile Section of this Plan (Section 2) provides a description of development trends in the city, including its geography and environment, population and demographics, land use and development, housing and community development, employment and industry, and transportation and commuting patterns.

Summary of Risk Assessment for the City of Newport Beach

Disaster (or Hazard) Mitigation Plans such as this one are to evaluate the hazards that are most likely to impact the community for which the Plan is being prepared. There are many types of natural hazards, but not all apply to a given area. A qualitative assessment of Newport Beach's vulnerability to a variety of natural hazards was conducted as part of the discussions with the Advisory Committee and the residents that participated in the Public Workshop, and based on the findings of the literature search for past natural disaster events that have impacted this part of the Los Angeles basin. The results of this assessment are presented in Table 3-3 below.

The analyses conducted for this study indicate that three hazards most likely to impact Newport Beach are strong ground shaking due to earthquakes, wildfires, and Santa Ana winds. Although a strong earthquake is not a high probability event, its effects would be severe. An earthquake on a fault nearby, or directly under the City, would be the worst-case scenario for Newport Beach, with extensive structural, economic, and social implications. Although such an event is not expected to occur frequently, perhaps only once every few generations, the potential damage to the City and the surrounding area can be so severe as to defer growth of the region for years. At the other end of the spectrum, Santa Ana winds are high probability events with a wide geographic extent but relatively lower risk potential (Table 3-3). Other hazards with the potential to significantly impact Newport Beach include surface fault rupture, liquefaction, storm flooding, coastal flooding due to tsunami, and thunderstorm-related strong winds.

The HazUS analyses conducted for Newport Beach indicate that a moderate to large magnitude earthquake on either the San Joaquin Hills thrust fault (M7.1) or the segment of the Newport-Inglewood fault (M6.9) that extends through the city has the potential to cause significant damage in Newport Beach. Thousands of structures, amounting to more than 70 percent of the City's residential stock, are anticipated to experience at least moderate damage as a result of either of these two earthquakes. The commercial and industrial structures in the city are also expected to be impacted, with approximately 60 percent of the combined commercial and industrial buildings in the City experiencing at least moderate damage. The damage projections indicate that approximately 2,000 casualties can be expected as a result of these earthquake scenarios, especially if an earthquake occurs during the maximum educational, industrial and commercial occupancy, in the middle of the day. Although most of these casualties are expected to require only minor medical treatment without hospitalization, the models suggest that as many as 150 fatalities could occur. The medical needs prompted by these earthquake scenarios are anticipated to exceed the capacity of the local hospital. Both of these earthquake scenarios would also impact the essential facilities in the city, with most of them not expected to be more than 50 percent functional even seven days after the earthquake. Total economic losses as a result of any of these two earthquake scenarios are estimated to exceed $3.1 billion in Newport Beach alone.

The potable water system is expected to perform moderately well as a result of either of these two earthquake sources, but thousands of households are expected to be without potable water for at least three days after the earthquake. The electric power system is expected to experience more significant damage, such that between 7,000 and 9,000 households are expected to be without power on day 7, and between 1,500 and 2,000 households may not have power a month after either of these two earthquakes. Specifics regarding these earthquake loss estimates are provided in Section 6 of this report.

An earthquake on the more-distant Whittier fault could cause slight to moderate damage, whereas an earthquake on the San Andreas fault, given its distance from Newport Beach, would generate mostly slight damage. Economic losses in Newport Beach as a result of these earthquakes is estimated at $100 million and $42 million, respectively. Neither of these earthquake sources is expected to cause significant damage to the essential facilities in the city. Both of these earthquakes are expected to cause only minor injuries to a few residents.

Table 3-3: Natural Hazards With the Potential to Impact the City of Newport Beach

Hazard	Geographic Extent			Historical Occurrence in Newport Beach	Probability of Occurrence			Potential Risk			Score*	Rank
	Widespread	Moderate	Small		High	Med.	Low	High	Med.	Low		
Earthquake												
Strong ground shaking	X			Yes (most recently in 1933)		X		X			8	**I**
Surface fault rupture		X		No		X		X			7	2
Liquefaction		X		Most likely during 1933		X		X			7	2
Flooding												
Riverine flooding due to storm		X		Yes	X				X		7	2
Coastal flooding		X		Yes	X				X		7	2
Dam inundation			X	No			X		X		4	5
Tsunami		X		Possibly in 1934			X		X		5	4
Sea-level rise			X	Ongoing	X				X		6	3
Wildfires		X		Yes	X			X			8	**I**
Landslides			X	Yes		X				X	4	5
Erosion			X	Yes		X				X	4	5
Windstorms												
Santa Ana winds	X			Yes	X				X		8	**I**
Thunderstorms		X		Yes	X				X		7	2
Tornadoes			X	Yes		X			X		5	4
Hurricanes		X		Yes			X			X	4	5
Volcanic Eruptions	(as a result of a distant source)		X	No			X			X	3	6

Score: Based on the number of points earned by summing the geographic extent, probability of occurrence and potential risk as follows: Widespread or high = 3 points; moderate or medium = 2 points; and small or low = 1 point. Maximum number of points = 9.
Rank: 1 = highest; 6 = lowest.

Damage as a result of a 100- year or 500-year flood event along the Santa Ana River is not expected to impact a large portion of the city of Newport Beach, yet, hundreds of residential structures are located within the flood zone and thus have the potential to be flooded. A much larger number of residential and commercial structures, up to 6,500, are located within the San Diego Creek 500-year flood zone. Flooding of roadways in the northwestern portion of the City, including the Balboa Peninsula, and in the area where Newport Avenue and Coast Highway intersect, has the potential to severely impact thousands of motorists, and restrict access to Hoag Presbyterian Hospital. Several schools and at least two of the fire stations serving Newport Beach are located within the 500-year flood zone. Even if the facilities themselves are not impacted, the roads providing ingress and/or egress from these facilities could be flooded, hindering evacuation efforts and emergency response. Flooded streets can also result in significant traffic delays, causing short-lived but substantial economic losses to the community, in addition to posing a hazard or nuisance to residents and motorists (depending on the water level reached). Although flooding at this scale is not expected to occur often, it has happened before, and thus has the potential to occur again in the future.

Coastal flooding as a result of a tsunami has not occurred historically in the Newport Beach area (except for a three-story high wave of unknown causes in 1934). However, an earthquake on an offshore fault nearby, or a submarine landslide off the coast of Newport Beach, could result in a tsunami in the area, with very little warning to evacuate the low-lying areas. Given that thousands of people visit the beach daily, and that there is a large number of residential and commercial structures in the inundation zone, a tsunami in Newport Beach has the potential to cause significant losses to life and property. This is a a very low probability but high risk event.

Wildland fires occur on a regular basis in the Southern California region; in fact, the historical record suggests that the fire risk is increasing. Most of Newport Beach is not located in a fire risk area, but the Newport Coast area is not only identified as a very high fire hazard severity zone, but it is located adjacent to wildlands with a very high fire hazard risk.

High winds occur more often than earthquakes, wildfires and flooding. Although high winds are regional in extent, damage as a result of high winds tends to be localized. The costs associated with wind damage are, on a per event basis, fairly small, but because they occur fairly often, over the long-term, the costs can add up. There are several strategies that communities can implement to reduce the impact of high wind events. Some of these potential mitigation actions are discussed in Section 8; strategies that Newport Beach has chosen to implement are discussed in Section 4.

Table 3-4: Critical Facilities at Potential Risk from the Natural Hazards Discussed in this Plan

Hazard	Earthquakes			Flooding				Wildfires	Landslides	Windstorms	
Facility	Strong Ground Shaking	Surface Rupture	Liquefaction or Earthquake-Induced Landslide	Storm-Induced Flooding	Coastal Flooding / Tsunami	Sea Level Rise	Dam Inundation			Santa Anas	Tornadoes/ Waterspouts
City Hall and EOC	✓									✓	
Fire Station 1 110 Balboa Blvd.	✓		✓	✓	✓	✓				✓	✓
Fire Station 2 475 32nd St.	✓	✓	✓	✓	✓	✓				✓	✓
Fire Station 3 868 Santa Barbara	✓						✓			✓	
Fire Station 4 124 Marine Ave.	✓		✓	✓	✓	✓				✓	✓
Fire Station 5 410 Marigold Ave	✓						✓			✓	
Fire Station 6 1348 Irvine Ave	✓									✓	
Fire Station 7 20401 Acacia St	✓		✓	✓	✓		✓			✓	
Fire Station 8 6502 Ridge Park Rd	✓		✓	✓				✓	✓	✓	
Hoag Presbyterian	✓		✓		✓					✓	
Police Station	✓						✓			✓	
Anderson Elementary	✓									✓	
Harbor View Elementary	✓						✓			✓	
Harbor Day Elementary	✓		✓							✓	
Lincoln Elementary	✓						✓			✓	
Mariners Elementary	✓									✓	
Newport Coast Elementary	✓		✓	✓				✓	✓	✓	
Newport Elementary	✓	✓	✓	✓	✓	✓				✓	✓
Newport Heights Elementary	✓									✓	
Carden Hall Jr HS	✓	✓								✓	
Horace Ensign Jr. HS	✓		✓						✓	✓	
Carden Hall HS	✓									✓	
Corona del Mar HS	✓								✓	✓	
Newport Harbor HS	✓									✓	
Childtime Pre-School	✓						✓			✓	
Eastbluff Pre-School	✓									✓	
Liberty Baptist Elementary	✓		✓							✓	

Hazard	Earthquakes			Flooding						Windstorms	
Facility	Strong Ground Shaking	Surface Rupture	Liquefaction or Earthquake-Induced Landslide	Storm-Induced Flooding	Coastal Flooding / Tsunami	Sea Level Rise	Dam Inundation	Wildfires	Landslides	Santa Anas	Tornadoes/ Waterspouts
Liberty Baptist HS	✓		✓							✓	
Newport Harbor Lutheran Pre-School	✓		✓							✓	
Our Lady Queen of Angels Elementary	✓		✓				✓		✓	✓	
Sage Hill School	✓		✓					✓	✓	✓	
St. Andrews Presbyterian MS	✓									✓	
Harbor Master and Coast Guard Station			✓	✓	✓	✓	✓		✓	✓	✓

Notes:
Bold checkmarks signify that the given facility is directly on or within the zone of potential impact, and is thus at greater risk than other nearby facilities. Non-bold checkmarks identify hazards that the facilities are susceptible to, but where the risk is about the same as that for other nearby structures. Non-bold checkmarks have also been assigned to essential facilities that are not located directly in an area susceptible to a given hazard, but are located nearby, such that access to/from the facility could be hindered.
All facilities are susceptible to the effects of strong ground motion and windstorms. The damages resulting from windstorms are expected to be significantly less than those resulting from an earthquake.