5.9 HYDROLOGY AND WATER QUALITY

This section describes the existing conditions related to hydrology, drainage, and water quality within the City of Yorba Linda. Where significant impacts are identified, mitigation measures are identified to avoid or reduce this impacts to a less than significant level. Identification of hydrologic and drainage impacts that could result from implementation of the proposed General Plan Update are provided.

5.9.1 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq., formerly the Federal Water Pollution Control Act of 1972), was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the "waters of the United States". In 1972, the Clean Water Act was amended to require National Pollutant Discharge Elimination System (NPDES) permits for the discharge of pollutants to "Waters of the U.S."[1] from any point source.[2] In 1987, the Clean Water Act was further amended to require that the U.S. Environmental Protection Agency (U.S. EPA) establish regulations for permitting municipal and industrial storm water discharges under the NPDES permit program. Final regulations regarding storm water discharges were issued on November 16, 1990, and require that municipal separate storm sewer system (MS4) discharges and industrial (including construction) storm water discharges to surface waters be regulated by an NPDES permit. NPDES permit requirements relevant to the proposed Project are discussed later in this section.

The Clean Water Act also requires states to adopt water quality standards for receiving water bodies and to have those standards approved by the U.S. EPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with the water quality criteria necessary to support those uses. Water quality criteria are prescribed concentrations or levels of constituents (such as lead, suspended sediment, and fecal coliform bacteria) or narrative statements that represent the quality of water that support a particular use. Because the State of California was unable to develop these standards for priority toxic pollutants, the U.S. EPA promulgated the California Toxics Rule in 1992 (40 *Code of Federal Regulations* [CFR] 131.38), which fills this gap. As a separate Rule, the California Toxics Rule is discussed further below under State regulations.

When water quality issues compromise the designated beneficial uses of a particular receiving water body, Section 303(d) of the Clean Water Act requires the identification and listing of that water body as "impaired". Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for the impairing pollutant(s). A TMDL is an estimate of the total load of pollutants from point, non-point, and natural sources that a water body may receive without exceeding applicable water quality standards (plus a "margin of safety"). Once established, the TMDL allocates the loads among the water body's current and future pollutant sources.

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1 "Waters of the U.S." include all waters that have, are, or may be used in interstate or foreign commerce (including sightseeing or hunting), including all waters subject to the ebb and flow of the tide and all interstate waters including interstate wetlands (33 CFR 328.3).

2 Point sources are discrete water conveyances such as pipes or man-made ditches.

Section 404 of the Clean Water Act is a program administered by the U.S. Army Corps of Engineers (USACE) that regulates the discharge of dredged and fill material into "Waters of the U.S.", including wetlands. Activities that affect "Waters of the U.S." that are regulated under this program include fills for development (including physical alterations to drainages to accommodate storm drainage, stabilization, and flood-control improvements); water resource projects (such as dams and levees); infrastructure development (such as highways and airports); and conversion of wetlands to uplands for farming and forestry. The USEPA and the USACE have issued Section 404(b)(1) Guidelines (40 CFR 230) that regulate dredge and fill activities, including water quality aspects of such activities.

Section 401 of the Clean Water Act requires that any person applying for a federal permit or license that may result in a discharge of pollutants into "Waters of the U.S." must obtain a State water quality certification ensuring that the activity complies with all applicable water quality standards, limitations, and restrictions. Section 404 permits and authorizations are subject to a Section 401 certification by the local Regional Water Quality Control Board (RWQCB).

National Pollutant Discharge Elimination System (NPDES)

As authorized by the CWA, the NPDES permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal sewer system, use a septic system, or do not have a surface discharge do not need a NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

The NPDES permit program is administered by the U.S. EPA which delegates oversight of the program in California to the RWQCBs. The NPDES permit program provides general permits and individual permits.

General permits may be written to cover categories of point sources that have common elements, such as storm water point sources; facilities that involve the same or substantially similar types of operations; facilities that discharge the same types of wastes or engage in the same types of sludge use or disposal practices; facilities that require the same effluent limits, operating conditions, or standards for sewage sludge use or disposal; and facilities that require the same or similar monitoring.

A general permits include requirements for construction projects that disturbs more than one acre of land. The general permit requires the applicant to file a public notice of intent to discharge storm water and to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) and Water Quality Management Plan (WQMP). A SWPPP includes a site map, description of the proposed activities, demonstration of compliance with applicable ordinances and regulation, and a description of the Best Management Practices (BMPs) that would be implemented to reduce erosion and discharge of construction-related pollutants. A WQMP is a plan for managing the storm water or runoff that flows from a developed site after construction is completed.

An individual permit is a permit specifically tailored to an individual facility. Once a facility submits the appropriate application, the permitting authority develops a permit for that particular facility based on the information contained in the permit application. The authority issues the permit to the facility for a specific time period (not to exceed five years) with a requirements that the facility reapplies prior to the expiration date.

Federal Antidegradation Policy

The federal Antidegradation Policy was released in 1968 and was included in the USEPA's first Water Quality Standards Regulation. The Antidegradation Policy represents a three-tiered approach to maintaining and protecting water quality. First, all existing beneficial uses and levels of water quality necessary to protect those uses must be preserved and protected from degradation. Second, water quality must be protected in areas where the quality cannot support the propagation of fish, shellfish, and wildlife and recreation ("fishable/swimmable"). Third, the policy provides special protection of waters for which the ordinary water quality criteria are not sufficient. These waters are called "Outstanding National Resources Waters" and have been designated as unique or ecologically sensitive.

If an activity is going to be allowed to degrade or lower water quality (in situations where existing water quality is higher than that needed to maintain established beneficial uses), the Antidegradation Policy requires that proposed projects meet the criteria below:

- The activity is necessary to accommodate important economic or social development in the area.
- Water quality is adequate to protect and fully maintain existing beneficial uses.
- The highest statutory and regulatory requirements and Best Management Practices (BMPs) for pollution control are achieved.

Federal Emergency Management Agency (FEMA)

The Federal Emergency Management Agency's (FEMA) primary missions is to reduce the loss of life and property and protect the nation from all hazards, including flooding.

Flood is a general and temporary condition of partial or complete inundation of two or more acres of normally dry land area or of two or more properties. The term "100-year flood" is defined by FEMA, as the flood elevation that has a 1 percent change of being equaled or exceeded each year. A "500-year flood" is one which has a 0.2 percent change of occurring each year. A 500-year flood event would be slightly deeper and over a greater area than a 100-year flood event.

Flood zones are geographic areas that FEMA defines, based on studies of flood risk. The zone boundaries are shown on flood hazard maps, also called Flood Insurance Rate Maps (FIRM). High Risk Zones or Special Flood Hazard Areas (Zone A) are high-risk flood areas where special flood, mudflow, or flood-related erosion hazards exist and flood insurance is mandatory. Low-to-Moderate Risk Zones or Non-Special Flood Hazard Areas (Zones B, C, and X) are areas that are not in any immediate danger from flooding caused by overflowing rivers or hard rains. Insurance purchase is not required in these zones.

FEMA is responsible for administering the National Flood Insurance Program (NFIP). The NFIP enables property owners in participating communities to purchase insurance as protection against flood losses in exchanges for State and community floodplain management regulations that reduce future flood damages. In communities that participate in the NFIP, mandatory flood insurance purchase requirements apply to all properties within Zone A, which are communities subject to a 100-year flood event. In addition to providing flood insurance and reducing flood damages through floodplain management regulations, the NFIP identifies and maps the floodplains of Flood Insurance Rate Maps (FIRM).

State of California

Porter-Cologne Water Quality Control Act

California's Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act) grants the State Water Resource Control Board (SWRCB) and the RWQCBs power to protect surface water and groundwater quality and is the primary vehicle for implementing California's responsibilities under the federal CWA. The SWRCB is divided into nine regions, each overseen by a RWQCB. The SWRCB is responsible for protecting California's surface waters and groundwater supplies.

Each RWQCB must formulate and adopt a Water Quality Control Plan (Basin Plan) for its region. The Basin Plan must conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State Water Policy. The Basin Plan establishes beneficial uses for surface and groundwater in the region, and sets forth narrative and numeric water quality standards to protect those beneficial uses. Basin plans are updated every three years and provide the basis of determining waste discharge requirements, taking enforcement actions, and evaluating clean water grant proposals. The Porter-Cologne Act also states that an RWQCB may include water discharge prohibitions applicable to particular conditions, areas, or types of waste within its regional plan. The Porter-Cologne Act is also responsible for implementing CWA Sections 401 and 402 and 303(d) to SWRCB and RWQCBs.

Senate Bill (SB) 610

SB 610 was passed on January 1, 2002, amending California state law to require detailed analysis of water supply availability for large development projects. An SB 610 Water Supply Assessment (WSA) must be prepared if the following three conditions are met: 1) the proposed project is subject to CEQA under Water Code Section 10910; 2) the proposed project meets criteria to be defined as a "Project" under Water Code Section 10912; and 3) the applicable water agency's current Urban Water Management Plan (UWMP) does not account for the water supply demand associated with the proposed project. A proposed project would meet the definition of "Project" per Water Code Section 10912 if it is:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A proposed hotel or motel, or both, having more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- A mixed-use project that includes one or more of the projects specified in this subdivision; or

A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project (DWR, 2003b).

California Department of Fish and Wildlife

Section 1602 of the California Fish & Wildlife (CDFW) Code protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by CDFW in which there is, at any time, any existing fish or wildlife resources, or benefit for the resources. Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state, and requires any person, state or local governmental agency, or public utility to notify the CDFW before beginning any activity that will:

- Substantially divert or obstruct the natural flow of any river, stream or lake;
- Substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

A Streambed Alteration Agreement is required prior to any construction if CDFW determines that a project could substantially adversely affect an existing fish and wildlife resource. The Agreement includes measures to protect fish and wildlife resources while conducting the project. CDFW must comply with CEQA before it may issue a final Agreement; therefore, CDFW must wait for the lead agency to fully comply with CEQA before it finalizes the agreement.

Regional and Local

Orange County Storm Water Program 2003 Drainage Area Management Plan (DAMP)

Section 402(p) of the CWA, as amended by the Water Quality Act of 1987, requires that municipal NPDES Permits include requirements (1) to essentially prohibit non-storm water discharges into municipal storm sewers and (2) to control the discharge of pollutants from municipal storm drains to the maximum extent practicable. In response to this requirement, the Orange County Drainage Area Management Plan (DAMP) was developed in 1993, which has been updated several times in response to requirements associated with NPDES permit renewals (County of Orange et al. 2003). Yorba Linda is a permittee covered by the requirements of this permit.

The main objectives of the Orange County DAMP are to fulfill the Permittees' commitment to present a plan that satisfies NPDES permit requirements and to evaluate the impacts of urban storm water discharges on receiving waters. Orange County DAMP elements include (1) the establishment of public outreach and educational programs, management strategies, and inter-agency coordination; (2) continuing participation in the Regional Research/Monitoring program that is being conducted with the neighboring counties, the Southern California Coastal Waters Research Project, and three Southern California Regional Boards; (3) the establishment of BMPs aimed at managing project-induced hydrologic effects; and (4) the improvement of water quality throughout the region.

City of Yorba Linda General Plan Update

The proposed Conservation Element addresses conservation and utilization of natural resources and the management and protection of open space lands. The Conservation Element provides policy guidance to protect, maintain, and enhance Yorba Linda's natural resources and open space land.

5.9.2 Environmental Setting

Watershed

The Planning Areas lies within two watersheds. The western half of the City falls within the Lower San Gabriel Watershed. Storm water runoff within this portion of the City flows towards Carbon Creek Channel, which flows west and ultimately discharges to the San Gabriel River. The eastern half of the City is within the Santa Ana River Watershed and drains southward, with storm water runoff entering the Santa Ana River.

Drainage and Flood Control

Historic flooding in Orange County has occurred largely in the Santa Ana River. Flood flows have been documented since 1825. The greatest flood in the history of California occurred in 1862 when it was estimated that the flow in the Santa Ana River was 315,000 cfs, more than three times larger than any subsequently measured flow. Historical accounts note the flood occurred after 30 straight days of rain. Flooding also occurred in 1891, 1916, 1938, 1969, 1974, 1978-1980 and 1983. In 1941, the construction of Prado Dam, east of the City, was completed by the US Army Corps of Engineers. The dam was built as a flood control dam to reduce the risk of flood in Orange County communities along the River. The embankment of the Prado Dam was recently expanded in 2005 and a new outlet was constructed to allow for increased releases capabilities from the dam. Flows are released from the dam in coordination with the Orange County Water District to match flow rate with capacity of groundwater recharge facilities and agreements with other agencies.

Surface Water Quality

Santa Ana River Reach 2 is listed on the 2012 303(d) list of impaired waterbodies and is noted to be impaired for Indicator Bacteria.

The portions of Carbon Canyon Creek and Aliso Creek that fall within Yorba Linda boundaries are not listed on the 2012 3030(d) List of Impaired Waterbodies. Likewise, East Lake is not listed. Channel E04501, Atwood Channel, East Richfield Channel, Richfield Channel, and Esperanza Channel are channels maintained by Orange County Public Works Flood Control Division that are at times open and other portions flow underground. There are no other surface water bodies within City limits.

Groundwater

Groundwater depth in the City of Yorba Linda varies from as shallow as ten feet below ground surface near the Santa Ana River to fifty feet below ground surface north of the river. Groundwater is stored and pumped by the Orange County Water District which in turn provides water to local purveyors.

Groundwater Quality

Industrial chemicals have impacted an area in the North Basin (near Fullerton, Anaheim and Placentia) and the South Basin (near Santa Ana, Tustin and Irvine) of the Orange County Groundwater Basin that supplies two-thirds of the drinking water for 2.4 million people in north and central Orange County. Plumes created by past manufacturing are spreading and threaten to impact the basin. Five water wells have already been removed from service. The Orange County Water District is proactively seeking ways to clean up the pollution in a united effort with local and national regulatory agencies. The initial cleanup

efforts are focused on cutting off and preventing the spread of contamination before it travels further into the main aquifer supplying hundreds of potable supply wells. There are no known impacts to groundwater within the limits of Yorba Linda.

Flood Hazards

Designated Flood Zones

The City of Yorba Linda has within its boundaries a number of identified 100-year floodplains. A 100-year floodplain is defined as an area that has a one percent or greater change of experiencing flood inundation in any given year. The floodplain areas in Yorba Linda have been established by the Federal Emergency Management Agency (FEMA) and are shown on Flood Insurance Rate Maps (FIRMS) panels 06059C0064J, 06059C0068J, 06059C0069J, 06059C0152J, 06059C0156J, and 06059C0157J dated December 3, 2009.

The floodplains that are tributaries to the river generally follow the area topography that is flowing roughly south to southwest. Some of these designated areas have been improved to contain floodwaters, but most are in an unimproved state. These areas are Channel E04501, Atwood Channel, East Richfield Channel, Richfield Channel, and Esperanza Channel. **Figure 5.9-1, Flood Hazards Map** shows the location of potential flood hazards in the Planning Area.

Seismically Induced Dam Inundation

Under the California Water Code, dam safety is regulated by the DWR, which delegates the program to the Division of Safety of Dams. Neither Riverside County nor FEMA have jurisdiction over dam inundation areas. Among other duties, the California Emergency Management Agency runs a Dam Safety Program (established by CGC Section 8589.5 in 1972), which collects and reviews dam failure inundation maps and evaluated waivers from the inundation mapping requirement. It is also the designated repository of the official dam failure inundation maps used in California's Natural Hazard Disclosure statement for real estate transactions, pursuant to Civil Code Section 1103.

According to the Department of Water Resources Division of Dam Safety, dam failure generally occurs for one of three reasons: as the result of ground shaking from an earthquake (greater than the assumed earthquake for which the dam was designed to withstand); due to structural instability (i.e., poor design or construction); or from heavy rains in excess of design capacity. Human error can also play a role in dam failure.

In addition, seiching during seismic activity or from seismically-induced landslides may cause stored water to overtop the dam. Seiching refers to a standing wave oscillating in an enclosed body of liquid, including dams or other landlocked bodies of water. Seiching in a large enough magnitude could affect downstream areas if the force is enough to result in the movement of water over dams.

Yorba Linda is located in the identified dam failure inundation zone for four existing dams: the Prado Dam and Reservoir, the Diemer Filtration Plan and Reservoir, Carbon Canyon Dam and Seven Oaks Dam. The County of Orange has prepared contingency plans and response checklists for potential dam failure as part of its Hazard Mitigation Plan and Emergency Operations Plan.

Inundation from Above-ground Water Storage Reservoirs

The Diemer Water Filtration Plant is a storage and filtration facility owned and operated by the Metropolitan Water District. The Diemer facility is located within the City of Yorba Linda and has the capacity to hold 77 acre-feet of water. A sudden release of water from this reservoir, if filled to capacity, could send a channel of water from the filtration plant south. The inundation could impact several hundred residences, major neighborhood shopping centers, and a portion of the Yorba Linda Junior High School.

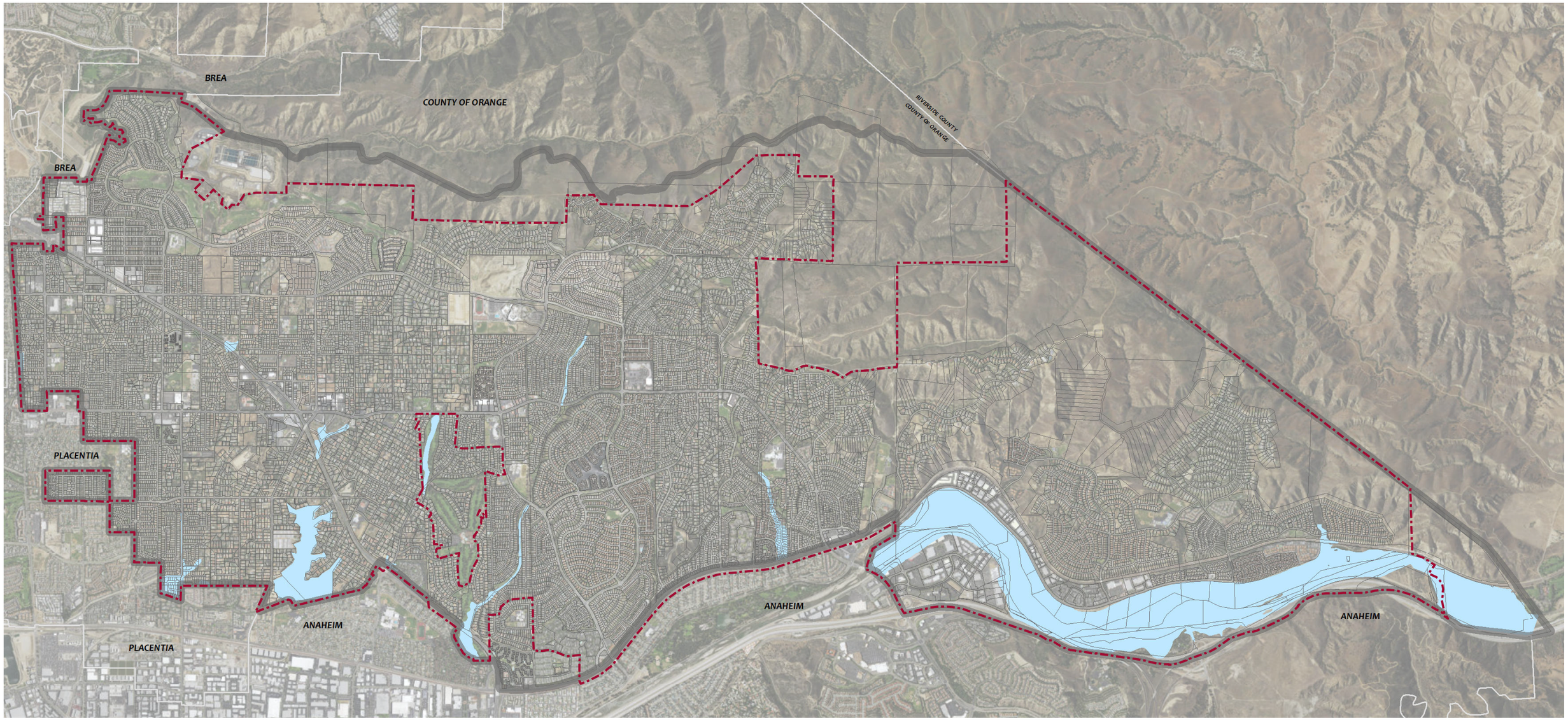
Tsunamis

Tsunamis are a related phenomenon in which the water waves are caused by an up-and-down movement, rather than side-to-side as in seiche. They are most commonly associated with oceans, which can generate waves of massive and devastating height upon hitting coastlines. Since Yorba Linda has no ocean frontage, there is no oceanic tsunami risk within the county. The Yorba Linda Water District maintains two reservoirs within City limits. Both units store water underground in reinforced concrete tanks.

Mudflows

Mudflows are shallow water-saturated landslides, typically manifested as a downhill movement of soft, wet, unconsolidated earth and debris, made fluid by rain or melted snow and often building up great speed. Debris flows are similar to mudflows, except they contain a high percentage of non-soil material, such as rocks, brush, trees or other debris. A mudflow occurs naturally as a result of heavy rainfall on a slope that contains loose soil or debris or is otherwise not stabilized by vegetation or other mechanical means.

There is a high potential for mudflow to occur in some areas of the Planning Area as a result of large amounts of precipitation in a relatively small time frame. Areas with steep slopes or mountains are potentially subject to mudflows in the event of large or concentrated amounts of precipitation. This risk can increase in burned areas where soil- retaining vegetation has been lost. Such areas are particularly susceptible to flashfloods and debris flows during rainstorms. Narrow canyons and creeks are also susceptible to flashfloods which can cause flooding damage directly or indirectly through mudflows. Human activity can also induce a slide, such as when soil becomes saturated from a broken water pipe or the improper diversion of runoff from a developed area.



City Boundary

Sphere of Influence

100 Year Flood Plain

N

City of Yorba Linda
General Plan Update Program EIR

Figure 5.9-1
Flood Hazards Map

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5.9.3 Significance Threshold Criteria

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

HYD-1 Violate any water quality standards or waste discharge requirements.

HYD-2 Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of preexisting nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.

HYD-4 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

HYD-5 Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

HYD-6 Otherwise substantially degrade water quality.

HYD-7 Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

HYD-8 Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

HYD-9 Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.

HYD-10 Be subject to inundation by seiche, tsunami, or mudflow

5.9.4 Impacts and Mitigation Measures

Impact 5.9-1: Development that could occur under the proposed General Plan Update could substantially increase the amount of impervious surfaces in the City and could therefore potentially increase surface water flows into drainage systems within the City's watersheds. [Threshold HYD-1]

<u>Impact Analysis</u>

Buildout under the proposed General Plan Update is forecasted to increase residential development in the Planning Area by 3,913 units and industrial/commercial development by 2,005,770 square feet beyond current development. There are currently 21,958 dwelling units in the City, and 3,845,325 square feet of commercial and industrial space. This represents a potential 17.8 percent increase in the number of dwelling units and a 52 percent increase in the amount of commercial and industrial square footage.

The majority of surface water runoff is conveyed into storm drains. Orange County Public Works is responsible for the development, operations, and maintenance of flood control facilities throughout the County. The City is responsible for providing drainage from developments within its jurisdictional boundaries and ensuring that their systems properly function with the regional system.

It is possible that upgrades to the existing storm drain system in the Planning Area could be required as result of new development and redevelopment that could occur under the proposed General Plan Update, particularly in areas where flooding could occur. However the costs of such improvements would be offset by the payment of development impact fees from developers to the City. Through improvements implemented as required by new development occurring under the General Plan Update, drainage systems in the Planning Area would remain at an adequate level of service.

In addition, the General Plan Update includes several goals and policies that would ensure adequate maintenance of an effective storm drain system. Policies 5.4 and 5.5 of the Public Services Element address the need to maintain and adequate storm drain system to serve the needs of the City and to identify areas where such service is lacking.

As a result of the development impact fees that would be paid by developers to the City to ensure the ongoing operation and maintenance of adequate storm drains systems, as well as the policies in the General Plan Update, impacts as a result of project implementation would be less than significant.

Proposed General Plan Update Goals and Policies

Conservation Element

Goal CN-4 - A healthy watershed and adequate, safe, and reliable water supply.

Policy CN-4.1 - Promote the preservation and enhancement of stream courses and watersheds in the City.

Policy CN-4.2 - Consider conservation of water resources in the review of all development proposals and public facility improvement plans.

Policy CN-4.3 - Promote the use of water efficient practices in site and building design for private and public projects.

Policy CN-4.4 - Ensure the maintenance and monitoring of flood control and drainage facilities to provide protection from inundation from a 100-year flood event.

Policy CN-4.5 - Promote the retention of local drainage courses, channels and creeks in their natural condition where possible.

Policy CN-4.6 - Protect groundwater from sources of pollution.

Public Services and Utilities Element

Policy PSU-5.4 - Provide storm drainage in accordance with best management practices and all adopted plans. Assess the system's ability to accommodate current and future users and include all necessary improvements in development plans.

Policy PSU-5.5 - Identify and improve areas experiencing localized storm drainage problems for storm drain improvements.

Goal PSU-6 - An adequate, safe, and reliable water supply.

Policy PSU-6.1 - Support regional and local efforts to ensure that an adequate water supply, including groundwater, remains available.

Policy PSU-6.2 - Support regional and local efforts to promote water efficiency and conservation.

Policy PSU-6.3 - Promote water efficient practices in site and building design for public and private projects.

Policy PSU-6.4 - Work with the Yorba Linda Water District to ensure adequate water supply for all new developments.

Growth Management Element

Goal GM-1 - Adequate infrastructure and public services provided to areas within the City limits and, if determined appropriate, to areas outside City limits and within its sphere of influence.

Policy GM-1.1 - Ensure that new development pays its share of the costs of public facilities and services needed to serve new residents.

Policy GM-1.2 - Collaborate with adjacent jurisdictions to ensure that infrastructure and public services are provided in a timely and high-quality manner.

Policy GM-1.3 - Promote the establishment of development phasing plans for new development within the City corresponding to required improvements.

Public Health and Safety Element

Goal PS-4 - Protect the lives and property of residents and visitors of the City from flood hazards.

Policy PS-4.1 - Provide appropriate land use designations and regulations for areas subject to flooding.

Policy PS-4.2 - Maintain natural drainage courses and keep them free of obstructions.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Impact 5.9-2: Development associated with the General Plan Update could increase the amount of impervious surfaces in the City, but not a large enough scale such that groundwater recharge would be impacted. [Threshold HYD-2]

Impact Analysis

The majority of potential development that could occur in the Planning Area as result of the proposed General Plan Update would occur in areas that are currently or have previously been developed. This

includes the entirely of the opportunities for commercial and industrial growth, and much of the potential residential expansion. The Cielo/Esperanza Focus Area is the only area of the Planning Area that is anticipated to be development on vacant, undeveloped land. This would be limited to residential growth, in the form of up to 626 new dwelling units. Although this activity would increase the amount of impervious surface in that area, it would not be at a large enough scale to affect groundwater recharge in a significant manner.

Proposed General Plan Update Goals and Policies

Conservation Element

Goal CN-4 - A healthy watershed and adequate, safe, and reliable water supply.

Policy CN-4.1 - Promote the preservation and enhancement of stream courses and watersheds in the City.

Policy CN-4.2 - Consider conservation of water resources in the review of all development proposals and public facility improvement plans.

Policy CN-4.6 - Protect groundwater from sources of pollution.

Public Services and Utilities Element

Goal PSU-6 - An adequate, safe, and reliable water supply.

Policy PSU-6.1 - Support regional and local efforts to ensure that an adequate water supply, including groundwater, remains available.

Policy PSU-6.2 - Support regional and local efforts to promote water efficiency and conservation.

Policy PSU-6.3 - Promote water efficient practices in site and building design for public and private projects.

Policy PSU-6.4 - Work with the Yorba Linda Water District to ensure adequate water supply for all new developments.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Impact 5.9-3: The implementation of the General Plan Update would not result in the alteration of the exiting drainage pattern in the City or its Sphere of Influence such that these areas could experience an increase in erosion or siltation. [Threshold HYD-3]

Impact Analysis

As stated above, the majority of any new development that could occur under the proposed General Plan Update would occur in areas that are already developed and as such would not alter the existing course of a stream or river. The Cielo/Esperanza Focus Area is not currently developed and consists of hillsides

and valleys in the northeastern section of the City's Sphere of Influence. However there are not existing streams or rivers in this area and General Plan Policy CN-4.5 promotes the retention of local drainage courses. Impacts on erosion and siltation would be less than significant as any new development would also be require standard Best Management Practices to prevent such occurrences.

Proposed General Plan Update Goals and Policies

Conservation Element

Policy CN-4.1 - Promote the preservation and enhancement of stream courses and watersheds in the City.

Policy CN-4.5 - Promote the retention of local drainage courses, channels and creeks in their natural condition where possible.

Public Health and Safety Element

Policy PS-4.2 - Maintain natural drainage courses and keep them free of obstructions.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Impact 5.9-4: The implementation of the General Plan Update would not result in any activity that could increase surface runoff at any potential project site that could result in flooding. [Threshold HYD-4]

Impact Analysis

The majority of the areas that could be developed or redeveloped under the General Plan Update are currently developed, as discussed above. As a result surface runoff would be unaffected in these areas. The Cielo/Esperanza Focus Area could experience new development on undeveloped hillsides and canyons. However construction in this area, as with all others, would require runoff Best Management Practices to be implemented and would not be of a large enough scale to impact runoff at a level that could lead to flooding or be considered significant.

Proposed General Plan Update Goals and Policies

Conservation Element

Goal CN-4 - A healthy watershed and adequate, safe, and reliable water supply.

Policy CN-4.4 - Ensure the maintenance and monitoring of flood control and drainage facilities to provide protection from inundation from a 100-year flood event.

Policy CN-4.5 - Promote the retention of local drainage courses, channels and creeks in their natural condition where possible.

Public Services and Utilities Element

Policy PS-5.4 - Provide storm drainage in accordance with best management practices and all adopted plans. Assess the system's ability to accommodate current and future users and include all necessary improvements in development plans.

Policy PS-5.5 - Identify and improve areas experiencing localized storm drainage problems for storm drain improvements.

Public Health and Safety Element

Goal PS-4 - Protect the lives and property of residents and visitors of the City from flood hazards.

Policy PS-4.1 - Provide appropriate land use designations and regulations for areas subject to flooding.

Policy PS-4.2 - Maintain natural drainage courses and keep them free of obstructions.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Impact 5.9-5: Development under the General Plan Update would not create runoff water that would exceed the capacity of existing or planned drainage systems. [Threshold HYD-5]

Impact Analysis

It is anticipated that the existing storm water drainage system in the City is adequate for the majority of potential development that could take place under the General Plan Update. In the event that a proposed development could generate an increased amount of runoff such that the current system would be unable to accommodate the increased flows, the General Plan Update would require that the drainage system be upgraded. This would be funded by development impact fees paid by the developers to the City. As a result impacts would be less than significant.

Proposed General Plan Update Goals and Policies

Conservation Element

Goal CN-4 - A healthy watershed and adequate, safe, and reliable water supply.

Policy CN-4.2 - Consider conservation of water resources in the review of all development proposals and public facility improvement plans.

Policy CN-4.3 - Promote the use of water efficient practices in site and building design for private and public projects.

Policy CN-4.4 - Ensure the maintenance and monitoring of flood control and drainage facilities to provide protection from inundation from a 100-year flood event.

Policy CN-4.5 - Promote the retention of local drainage courses, channels and creeks in their natural condition where possible.

Public Services and Utilities Element

Policy PSU-5.4 - Provide storm drainage in accordance with best management practices and all adopted plans. Assess the system's ability to accommodate current and future users and include all necessary improvements in development plans.

Policy PSU-5.5 - Identify and improve areas experiencing localized storm drainage problems for storm drain improvements.

Growth Management Element

Goal GM-1 - Adequate infrastructure and public services provided to areas within the City limits and, if determined appropriate, to areas outside City limits and within its sphere of influence.

Policy GM-1.1 - Ensure that new development pays its share of the costs of public facilities and services needed to serve new residents.

Policy GM-1.2 - Collaborate with adjacent jurisdictions to ensure that infrastructure and public services are provided in a timely and high-quality manner.

Policy GM-1.3 - Promote the establishment of development phasing plans for new development within the City corresponding to required improvements.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Impact 5.9-6: The General Plan Update would not otherwise degrade existing water quality. [Threshold HYD-6]

Impact Analysis

There are no other aspects of the proposed General Plan Update that would degrade the existing level of water quality in the City or its Sphere of Influence.

Proposed General Plan Update Goals and Policies

Please refer to the General Plan Update goals and policies identified in this section.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Impact 5.9-7: The implementation of the General Plan Update would not place housing within a 100-year flood hazard area. [Threshold HYD-7]; and

Impact 5.9-8: The implementation of the General Plan Update would not result in structures being placed in areas that could impede or redirect flood flows. [Threshold HYD-8]

Impact Analysis

The General Plan Update would involve potential redevelopment in areas that are currently built, as well as an expansion of housing into undeveloped hillsides in the City's Sphere of Influence (Cielo/Esperanza Focus Area). The currently developed areas are not within 100-year flood hazard zones as mapped by FEMA and as such redevelopment in these areas would be unaffected by potential flooding. According to FEMA Flood Insurance Rate Map 06059C0069J, there are no 100-year flood hazard areas in the undeveloped Cielo/Esperanza Focus Area, meaning new housing that could be built in that area would not be located in a flood hazard zone. Impacts would be less than significant.

Proposed General Plan Update Goals and Policies

Please refer to the General Plan Update goals and policies identified in this section.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Impact 5.9-9: There is the potential for new development in areas that could be inundated in the event of a breach of the Prado Dam. [Threshold HYD-9]

Impact Analysis

The only portion of the Planning Area that would be subject to potential damn inundation is the located in the southeastern area of the City, in and adjacent to the East Gateway Focus Area. This area could experience expansion of both commercial and industrial land uses, which are compatible with current land use in that area.

The potential for dam inundation is a result of the presence of the Prado Dam, due east of the City upstream on the Santa Ana River. Although there is not standing water behind the dam in normal circumstances, a flood event upstream from the dam results in a lake forming behind it. Were the dam to be breached, the Gateway Focus Area, is located immediately to the north of the Santa Ana River. Because of the potential for new construction in that Focus Area, new structures are likely to be placed in the path of such an event.

To mitigate threats such as dam inundation the proposed General Plan Update Safety Element contains goals and actions that would lessen risks associated with flooding, thereby ensuring that flood control facilities are maintained and operable in order to prevent flood damage. In addition, the City's Emergency Management Plan, which is part of the Orange County Emergency Management Plan, would further ensure that impacts associated with dam inundation would remain less than significant.

Proposed General Plan Update Goals and Policies

Please refer to the General Plan Update goals and policies identified in this section.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

Impact 5.9-10: The implementation of the General Plan Update would not lead to any areas being threatened by inundation from mudslide, tsunami, or seiche. [Threshold HYD-10]

Impact Analysis

The threat of tsunamis impacts the Planning Area because the area is approximately 18 miles from the Pacific Ocean at its closest point and is well above sea level. Seiches occur when a water storage facility's water level overflows its containment wall. There is not a large enough body of water in or adjacent to the Planning Area for this possibility to arise a level of significance.

New development could potentially result in an increased mudslide risk in the Cielo/Esperanza Focus Area due to the undeveloped, hilly nature of that portion of the Sphere of Influence. However the General Plan Update contains goals and policies that protect hillsides and provide for practices that mitigate events such as mudslides. Specifically, Goals PS-1 and PS-2 of the Public Health and Safety Element which state that the highest priorities of the City are to protect human life and property. This includes policies 2.1 – 2.5 which ensure, among other things, that engineering best practices are employed such that the potential risks of hazards such as mudslides are kept to a less than significant level.

Proposed General Plan Update Goals and Policies

Please refer to the General Plan Update goals and policies identified in this section.

Mitigation Measures

No mitigation measures are required.

Level of Significance After Mitigation

Less than significant impact.

5.9.5 Cumulative Impacts

Cumulative impacts of the proposed project on hydrology do not rise to a significant level. Although there would be an increase in the amount of impervious areas of the City associated with new development, this would not be of a significant enough nature to have cumulative environmental effects. In addition, the costs of any expansion of drainage infrastructure that may be required as a result of an increase in development would be offset by the payment of development impact fees to the City from the developer. The risk of hydrologically related natural hazards such as mudflows is mitigated by the General Plan Update policies referenced above, and areas of new development that lie in flood hazard areas are also addressed in the goals and policies of the proposed project. Cumulative impacts would be less than significant.

5.9.6 Significant Unavoidable Impacts

No significant unavoidable impacts are identified.