4.8 HYDROLOGY AND WATER QUALITY

This section summarizes information on hydrology, including flooding and water quality, in Chino and its Sphere of Influence (SOI), and provides an evaluation of the effects that the Proposed General Plan and Focused Growth Plan would have on these environmental factors.

A. Regulatory Framework

This section summarizes key federal, State and City statutes, regulations and policies that would apply to the implementation of the Proposed General Plan and Focused Growth Plan.

1. Federal Agencies, Laws and Regulations

a. Federal Emergency Management Agency[1]

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) and has recently published digital format maps, called DFIRMs, available on the internet, that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 annual exceedance probability (i.e. the 100-year flood event).

b. Federal Clean Water Act

The US Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act (CWA) of 1972 is the primary federal law that governs and authorizes water quality control activities by the EPA as well as the states. Various elements of the CWA address water quality. These elements are discussed below.

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[1] Federal Emergency Management Agency, http://www.fema.gov/hazard/flood/index.shtm, accessed on December 4, 2009.

Under Section 401 of the CWA, an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) must first obtain certification from the appropriate state agency that the proposed activity will comply with the state's water quality standards and criteria. In California, the authority to either grant water quality certification or waive the requirement is delegated by the State Water Resources Control Board (SWRCB) to the nine Regional Water Quality Control Boards (RWQCBs).

Under federal law, the EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations (40 CFR). Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question and (2) criteria that protect the designated uses. Section 304(a) requires the EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. In California, the EPA has designated the SWRCB and its RWQCBs with authority to identify beneficial uses and adopt applicable water quality objectives.

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the CWA to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring and other activities.

In November 1990, the EPA published regulations establishing NPDES permit requirements for municipal and industrial stormwater discharges. Phase 2 of the municipal permit system (known as the NPDES General Permit for Small MS4s) requires small municipal areas of less than 100,000 persons to develop stormwater management programs. The RWQCBs in California are responsible for implementing the NPDES permit system.

c. Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was established in 1974 to set federal minimum drinking standards and to protect public water supplies. This is the primary federal legislation protecting drinking water supplied by public water systems. As a result of the act, regulations for the protection of public health, as well as regulations relating to the taste, odor, and appearance of drinking water were established.[2]

2. State Laws and Regulations

a. California Constitution Article X, Section 2

This article is the benchmark for California's water law and policy. Specifically, the law states that all uses of California's bodies of water be both reasonable and beneficial.[3]

b. Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) of 1969 is California's statutory authority for the protection of water quality. Under the act, the State must adopt water quality policies, plans, and objectives that protect the State's waters for the use and enjoyment of the people. The act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically update water quality control plans (Basin Plans). Basin Plans are the regional water quality control plans required by both the CWA and Por-

[2] Safe Drinking Water Act, U.S. Environmental Protection Agency, http://www.epa.gov/OGWDW/sdwa/laws_statutes.html, accessed on December 4, 2009.

[3] California Constitution, Article 10: Water, http://www.leginfo.ca.gov/const/.article_10, accessed on December 4, 2009.

ter-Cologne Act in which beneficial uses, water quality objectives and implementation programs are established for each of the nine regions in California. The City of Chino falls under the Basin Plan for the Santa Ana River Basin. The act also requires waste dischargers to notify the RWQCBs of their activities through the filing of Reports of Waste Discharge (RWD), and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, Section 401 water quality certifications, or other approvals.[4]

c. Water Quality

In California, the SWRCB has broad authority over water quality control issues for the State. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the State by the federal government under the CWA. Other State agencies with jurisdiction over water quality regulation in California include the California Department of Public Health (DPH) (for drinking water regulations), the California Department of Pesticide Regulation, the California Department of Fish and Game (CDFG), and the Office of Environmental Health and Hazard Assessment.

3. Local Agencies, Programs, and Regulations

a. City of Chino Municipal Code

Chapter 8.60 of the Chino Municipal Code includes the areas of special flood hazard identified by the Federal Insurance Administration. Section 8.60.170 regulates development in the floodplain by the creation of standards of construction. Section 8.60.270 sets out conditions for variances.

b. City of Chino Stormwater Ordinance

On February 1, 1994, the City of Chino adopted Ordinance 94-01, Protection and Regulation of the Stormwater Drainage System. The purpose of this ordinance is to ensure the health, safety, and general welfare of City residents

[4] Porter-Cologne Water Quality Act Table of Contents, http://ceres.ca.gov/wetlands/permitting/tbl_cntnts_porter.html, accessed on December 4, 2009.

by protecting and enhancing the water quality of local waterbodies, groundwater, and wetlands. One of the primary goals of this ordinance is to reduce pollutants in all stormwater discharges to the maximum extent practicable. City staff periodically updates the ordinance for the purpose of maintaining compliance with new regulations including NPDES permit requirements.

c. Standard Conditions of Approval

The City of Chino provides Standard Conditions of Approval for new development. The standards that apply to drainage and water quality include the following:

- Prepare and submit a drainage study, including supporting hydraulic and hydrological data for approval. The study must identify the project's impact and all downstream drainage-mitigating measures, including, but not limited to, detention facilities.
- Prepare and submit a grading plan showing drainage routes and other pertinent information.
- Prepare and submit a Water Quality Management Plan (WQMP) to mitigate impacts to stormwater quality and quantity through the implementation of post-construction Best Management Practices (BMPs).

d. San Bernardino County Municipal Code

Chapter 19.16 of the San Bernardino County Municipal Code addresses the Flood Plain Overlay District. Section 19.16.050 establishes provisions for flood hazard reduction, including standards for anchoring, construction materials and methods, and floodproofing.

e. Chino Master Plan of Drainage (Master Plan)

The Chino Master Plan of Drainage was created in 1993, based on existing drainage systems in Chino. The Master Plan recommends the most viable and cost-effective storm drain facilities to relieve the deficiencies that existed at the time and meet future needs based on buildout conditions. The Master Plan study area covered all drainage to the west of Euclid Avenue, to the south of the West State Street Storm Drain watershed, to the east of San An-

tonio Channel and Chino Creek (Corona Expressway), and tributaries to the City's storm drainage system. Subsequent updates addressing Chino's newly annexed areas are listed below:

- Storm Drain Master Plan – Subarea 1 Agricultural Preserve – July 1998
- Storm Drain Master Plan – Subarea 2 (Preserve Area) – November 2003, amended June 2004

f. Chino Creek Integrated Plan

The Chino Creek Integrated Plan, updated in September 2006, was undertaken by the Inland Empire Utilities Agency (IEUA) under a grant from the SWRCB. The Plan identifies the highest priority improvement opportunities to preserve and enhance the Prado Basin. The Prado Basin is a unique asset to this region, which provides flood control, regional open space and endangered species recovery sites. It also hosts water quality enhancement programs and recreational and cultural facilities. The Plan identifies the key problem areas in the lower Chino Creek watershed and recommends projects and measures that will result in improved water quality, flood control, habitat restoration, recreation, water conservation and public education.

g. Optimum Basin Management Program

The Optimum Basin Management Program (BMP), prepared for the Chino Basin Watermaster, describes the current physical state of the Chino Groundwater Basin, sets goals, and contains a management plan. The goals of the BMP are to enhance the Basin's water supplies through the enhanced recharge of stormwater runoff, increase the recharge of recycled water, develop new sources of supplemental water, use recycled water for non-potable uses making more native groundwater available for higher-priority beneficial uses, treat and use contaminated groundwater, and to reduce groundwater outflow. Other goals are to protect and enhance water quality, and to enhance management of the Basin.[5]

[5] Wildermuth Environmental, Inc., 1999, *Optimum Basin Management Program*.

B. Existing Conditions

1. Existing Drainage and Stormwater Disposal, Flooding, and Dam Inundation

This section addresses flooding and dam inundation and existing drainage and stormwater disposal for the City of Chino.

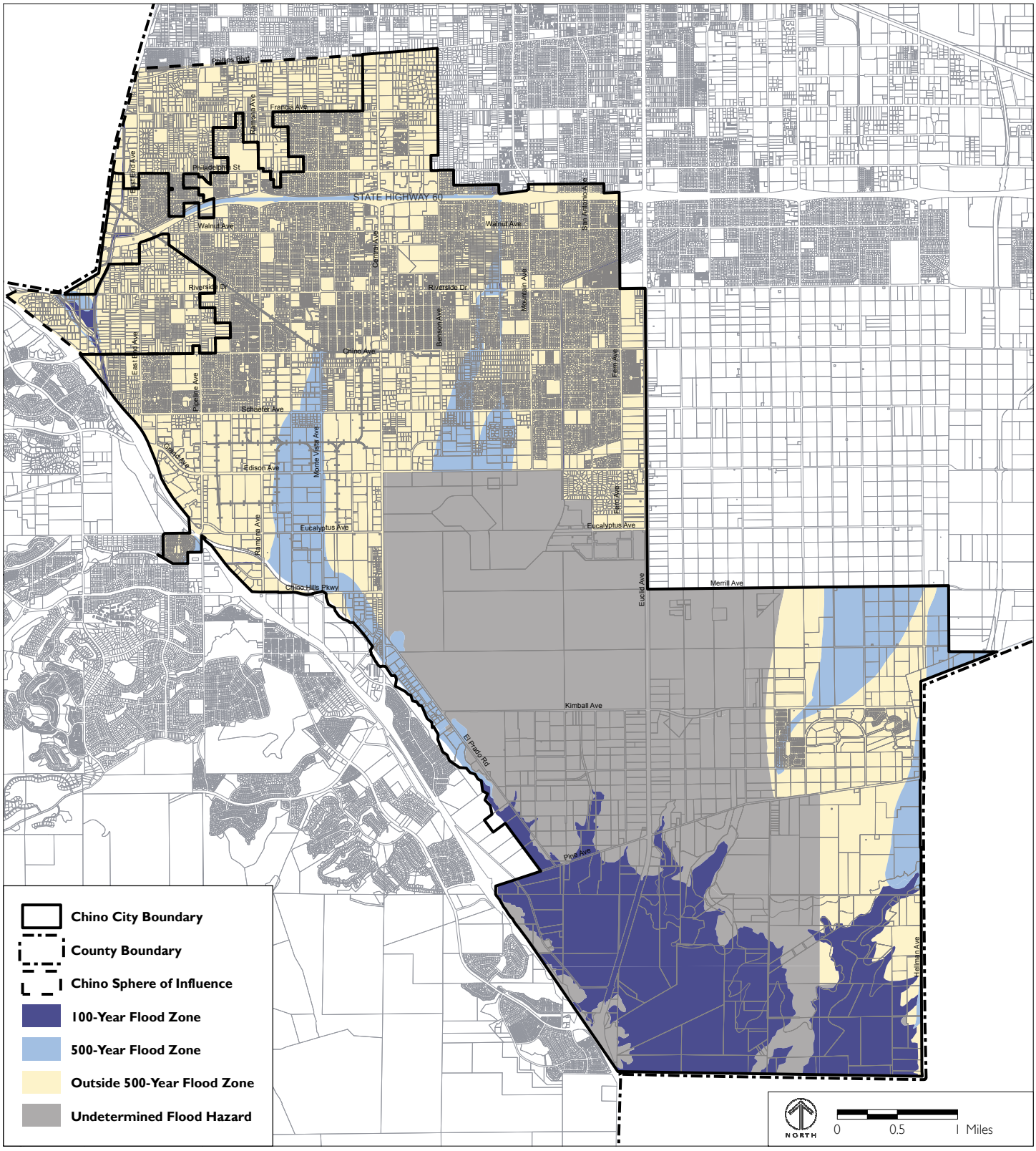
The City of Chino is located in the Chino Valley, a relatively flat area surrounded by hills and mountains which makes the basin susceptible to flooding. Flash-flood cycles are also common in the very dry Southern California region. Flooding in the City is primarily caused by the flooding from local streams and creeks and flooding associated with the Prado Dam, located to the southwest of Chino's City limits. The types of flooding are described below:

a. Local Flooding

Local flooding primarily occurs in the southern portion of the City south of Pine Avenue. As shown on Figure 4.8-1, this part of the City is located within the 100-year floodplain, as described by FEMA. This means that there is a 1 percent chance of flooding to that level in any given year. In addition, some of the areas of the City along State Highway 60, between Monte Vista Avenue and El Prado Road at the western boundary of the City, and on Merrill Avenue at the eastern corner of the City, are located within the 500-year floodplain, meaning a 0.2 percent chance of flooding to that level in any given year.

The City of Chino, the San Bernardino County Flood Control District (SBCFCD) and the U.S. Army Corps of Engineers (Corps) manage flood control in the City. The City of Chino's Public Works Department maintains and improves the City's storm drain systems.[6] The San Bernardino County

[6] City of Chino Public Works, http://www.cityofchino.org/index.aspx?page=43, accessed on December 4, 2009.



Source: FEMA 2008.

FIGURE 4.8-1
FEMA FLOODPLAINS

Flood Control District maintains adequate water supplies by increasing groundwater recharge services at flood control district facilities.[7] The Corps develops and controls federally sponsored flood control projects.[8] A portion of the City of Chino is located within the Corps' Prado Flood Control Basin associated with the Prado Dam. In addition, there are several flood control channels and creeks within the City and its watershed area. These are listed below:

- The concrete-lined San Antonio Channel runs along Chino's western boundary and ultimately meets with Chino Creek, and is the responsibility of San Bernardino County Flood Control (SBCFC).
- Chino Creek, entering Chino south of State Route 60, joins the San Antonio Channel, and follows the western side of the City southward. It is concrete lined upstream of Central Avenue, and a straightened earthen channel from Central Avenue to Pine Avenue. Downstream of Pine Avenue it is more natural and meanders until it flows into the Prado Flood Control Basin, and is the responsibility of the Corps.
- The West State Street Storm Drain begins in Ontario and flows through the City of Montclair and discharges into the San Antonio Channel. It serves as the northern-most portion of the 100-year flood system for the drainage area that includes Chino. It is a concrete-lined channel, and is the responsibility of SBCFC.
- The Chino Storm Drain, constructed alongside State Route 60, joins the San Antonio Channel on the western side of the City. It provides drainage for an area of approximately 5.5 square miles between State Street and the Pomona Freeway. It is a concrete-lined channel, and is the responsibility of SBCFC.

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[7] County of San Bernardino Department of Public Works, http://www.co.san-bernardino.ca.us/dpw/, accessed on December 4, 2009.

[8] County of San Bernardino Department of Public Works, Federal Projects/FC Engineering, http://www.co.san-bernardino.ca.us/dpw/floodcontrol/federal_projects.asp, accessed on December 4, 2009.

- The concrete-lined Cypress Channel begins south of State Route 60, flows through California Institution for Men (CIM), and drains into the Corps' Prado Flood Control Basin. It is concrete lined with the exception of a small unimproved earthen section located in the CIM property. It provides storm drainage to the eastern side of the City of Chino, and is the responsibility of SBCFC.
- The Magnolia Channel extends from Edison Avenue through the southern part of the City and ultimately joins with Chino Creek. It is an unimproved earthen channel, but provides some potential habitat as it passes through agricultural lands, particularly through the CIM property, and is the responsibility of the City of Chino.
- Cucamonga Creek enters the City from the north after running through Rancho Cucamonga and Ontario in a channel. Referred to as Mill Creek in Chino, it is not channelized. It flows through the area to the south of The Preserve. Although agricultural uses have affected the creek, primarily through erosion, it is largely a natural creek. The channelized portion north of Chino-Corona Road is the responsibility of SBCFC, while the unchannelized portion south of Chino-Corona Road is the responsibility of the Corps. [9,10]

b. Dam Inundation

Flooding associated with the Prado Dam is a result of Chino being located upstream of the dam, which creates a flood risk when water in the reservoir rises to the top of the dam. When the dam was originally constructed, the maximum reservoir water surface was 556 feet above sea level. The Corps and the Orange County Flood Control District (OCFD) are in the process of raising the height of the dam to allow a maximum reservoir water surface of 566 feet in order to accommodate additional flood control capacity for the region. When the raising of the dam is completed, areas below the 566-foot flood inundation line will be subject to flooding. These areas are restricted to

[9] City of Chino, 1993, *Master Plan of Drainage*, pages I-1 to I-4.

[10] Inland Empire Utilities Agency, 2006, *Chino Creek Integrated Plan*, pages 2-2 to 2-10.

recreation, open space, and resource management uses. OCFD is in the process of acquiring through fee or flowage easement all of the remaining privately owned property below the 566-foot level for flood control purposes. Until the dam spillway is completed and the properties are acquired, the flood inundation level will remain at its current 556-foot level. Existing land uses below the 566-foot inundation line primarily include dairies, agricultural and vacant land, as well as Prado Park and the El Prado Golf Course. The ultimate Prado Dam inundation area is shown in Figure 4.8-2.

2. Existing Water Quality

This section addresses water quality. Local water resources include surface water from streams and creeks fed by the nearby mountains that serve to partially replenish the local groundwater basin via a system of recharge basins, recycled water, treated groundwater, and groundwater extracted from the Chino Basin.[11] Approximately 16,291 acre-feet of water was produced and distributed in the City of Chino to residences and businesses in Fiscal Year 2008-09. Of the total amount of water, 83 percent was treated groundwater, while 17 percent came from the Agua de Lejos Water Treatment Plant.[12]

Federal regulations require the EPA to safeguard drinking water by establishing standards that limit the amount of substances in drinking water. In California, the Department of Public Health (DPH) also safeguards drinking water by establishing standards that are as stringent as the EPA's. These standards, also known as maximum contaminant levels (MCLs), are established in two categories: 1) primary standard: to protect the public health; and 2) secondary standard: to preserve water's aesthetic qualities such as taste, odor, clarity, and color.

[11] Inland Empire Utilities Agency, 2005, *2005 Regional Urban Water Management Plan*, page 9-1.

[12] City of Chino Public Works Department, 2007, *City of Chino Annual Water Quality Report*.

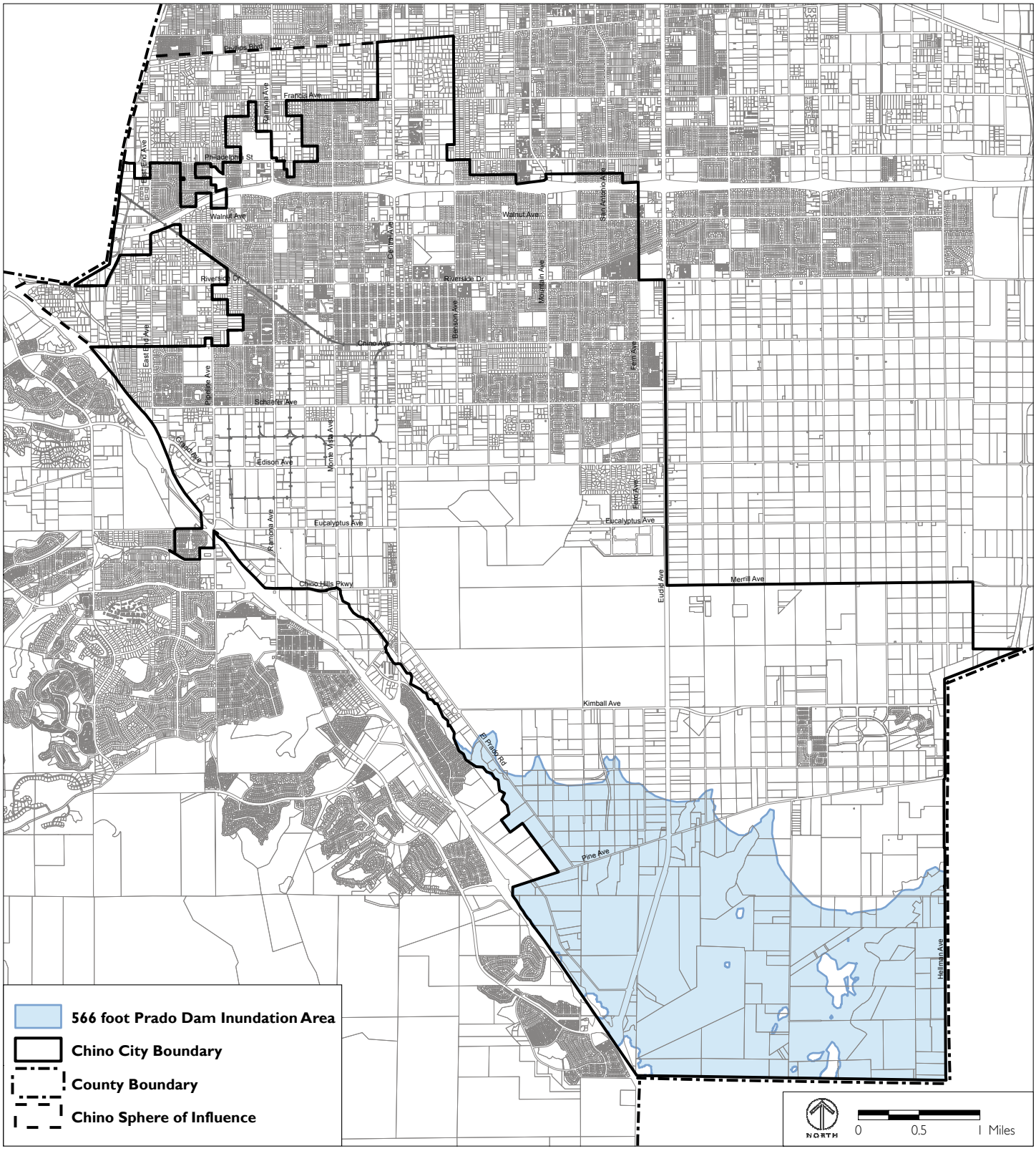

FIGURE 4.8-2

566 FOOT PRADO DAM INUNDATION AREA

The City safeguards its water supply by exceeding the monitoring frequencies required by the EPA and DPH. The City's water distribution system is also monitored at various locations to ensure good water quality throughout the system. Groundwater is produced by the City wells and by the Chino Basin Desalter Authority which in turn delivers potable water to the City. This section describes the quality of existing groundwater, desalter water, imported water, and recycled water in Chino.

a. Chino Basin Groundwater

Chino Basin groundwater is a critical resource to the City. From a regulatory perspective, the use of Chino Basin groundwater to serve potable demands will be limited by drinking water standards. In August 1999, Phase 1 of the OBMP established a necessity for conducting groundwater quality and water level monitoring in order to obtain current water quality and water level data in the Chino Basin.

The groundwater quality in Chino Basin is generally good, with better groundwater quality found in the northern portion of Chino Basin where recharge occurs. Salinity and nitrate concentrations tend to be greater in the southern portion of Chino Basin than in the northern portions of the Basin. Other constituents that have the potential to impact groundwater quality from a regulatory or Basin Plan standpoint are certain volatile organic compounds (VOCs), arsenic, and perchlorate. Arsenic concentrations greater than the water quality standard appear to be limited to the deeper aquifer in the vicinity of south Chino. Total chromium and hexavalent chromium, while currently not a groundwater issue for Chino Basin, may become so, depending on the promulgation of future standards.

The principal groundwater quality issues potentially facing the City involve total dissolved solids (TDS), nitrate, VOCs, and perchlorate.

i. Total Dissolved Solids (TDS)

TDS concentrations in excess of 200 mg/L indicate degradation from overlying land use. With few exceptions, areas with significant irrigated land use or

dairy waste disposal histories overlie groundwater with elevated TDS concentrations. Most of these degraded areas are located south of the Pomona Freeway. The impact of agriculture on TDS in groundwater primarily is caused by fertilizer use on crops, consumptive use, and dairy waste disposal.

The average TDS concentration in groundwater produced by City wells is approximately 314 mg/L. Much of the groundwater underlying or around The Preserve is currently degraded by high TDS concentrations. TDS concentrations near Subarea 2 range from 340 mg/L to more than 1,700 mg/L. The area north of the Chino Airport and The Preserve is characterized by TDS concentrations ranging from 230 mg/L to 1,220 mg/L.

ii. Nitrates

Similar to TDS, areas with significant irrigated land use or dairy waste disposal histories overlie groundwater with elevated nitrate concentrations. The primary areas of nitrate degradation are the areas formerly or currently overlain by citrus in the northern parts of the Chino Groundwater Basins, and dairy areas in the southern parts of the Basin.

The average nitrate concentration in groundwater produced by City wells ranges from approximately 24 mg/L to 75 mg/L. Much of the groundwater underlying or around The Preserve is currently degraded by high nitrate concentrations. Nitrate concentrations in this area range from 3 mg/L to 407 mg/L.

iii. Volatile Organics Compounds

VOCs have been discovered in several discrete areas of the Chino Groundwater Basin, including the City of Pomona Water Service Area, the General Electric Flatiron Site, and Cucamonga Creek near the intersection of Archibald Avenue and Riverside Drive.

The Chino Basin Watermaster OBMP Phase I Report indicates there are local areas with high VOCs, principally trichloroethylene (TCE). These areas include the Chino Airport, CIM, and an area southwesterly of Ontario Airport.

TCE concentrations in wells southwest of the Chino Airport and northeast of The Preserve are in the range of 2.5 μg/L to more than 50 μg/L. Consequently, groundwater produced in this area may require treatment for VOCs.

iv. Perchlorate

Perchlorate interferes with the thyroid gland's uptake of iodine to produce thyroid hormones. Normal body metabolism requires thyroid hormones, as do normal prenatal and postnatal development and growth. To protect the public from the adverse health effects of perchlorate and in the absence of drinking water standards for the contaminant, DPH established a Notification Level of 6 μg/L.

Perchlorate had been detected in 150 wells in the Chino Basin. Historical values of perchlorate exceeding the State Notification Level have occurred in several areas of Chino Basin, including the City of Chino.

b. Desalter Water

The objective of the Chino Basin Desalter Authority, a joint powers agency that supplies potable water to the City and other retail water agencies, is to extract contaminated local groundwater and treat it so that it can be used directly for domestic purposes. The Chino I Desalter has treated water quality targets of 25 mg/L for nitrate and 350 mg/L for TDS.

c. Imported Water

The City receives imported water through the Inland Empire Utilities Agency (IEUA) from the Metropolitan Water District of Southern California (MWD), which receives raw water from Northern California through the State Water Project (SWP). The SWP water is delivered to the Water Facilities Authority's (WFA) Agua de Lejos Water Treatment Plant through the MWD Rialto Reach of the Foothill Feeder. The WFA receives and treats SWP raw water.

The quality of water from the WFA is generally and consistently quite good, though it can vary depending on hydrologic conditions in both northern and southern California. Since 1972, the average annual TDS of SWP water from

Lake Silverwood has ranged from 112 mg/L to 375 mg/L. In 2005, the City reported the following water quality concentrations for imported water from the WFA:

- TDS = 290-360 mg/L (less than the MCL)
- Nitrates = 2.4-4.7 mg/L
- VOCs = non detectable
- Perchlorate = non detectable

In MWD's Integrated Resources Plan (IRP) Update, water quality was identified as a possible risk to MWD's future water supply reliability. Existing supplies could be threatened in the future because of more stringent water quality regulations, and/or the discovery of a previously undetected contaminants. Impairment of the quality of imported water could directly impact the amount of water supplies available to the City.

d. Recycled Water

DPH has established regulations and guidelines for the use of recycled water under the California Code of Regulations, Title 22. In addition, IEUA sets requirements on recycled water retailers, including the City, that are incorporated in its agreements with retailers and in IEUA Ordinance No. 69, which regulates the availability and use of recycled water.

The wastewater treatment process at IEUA's water reclamation facilities is designed so that effluent water quality will meet Title 22 requirements for non-restricted recreational use with an average level of TDS well below 450 mg/L and a total nitrogen level of less than 10 mg/L.

3. Seiche, Tsunami, and Mudflows

This section addresses issues related to seiche, tsunami, and mudflows. The City of Chino is at low risk from damage resulting from seiches or waves generated in bodies of water. Chino is also not at risk from tsunami due to its inland location. Finally, the City is not at risk of mudflows due to its relatively flat topography. For the same reason, there is no risk from mudflow from the hills in Chino. See Section 4.6 for a full discussion of land subsidence.

4. Standards of Significance

The Proposed General Plan and Focused Growth Plan would have a significant impact to hydrology and water quality if they would:

- Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a significant lowering of the local groundwater table level.
- Substantially alter the existing drainage pattern of the site or area in a manner which would result in substantial erosion, siltation or flooding on- or off-site.
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems.
- Provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality.
- Place occupied development 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.
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- 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.
- Potentially be inundated by seiche, tsunami, or mudflow.

5. Impact Discussion

This section discusses the potential impacts of the proposed adoption and implementation of the Proposed General Plan and Focused Growth Plan on hydrology, water quality and related issues in Chino.

a. Drainage

Additional development and related construction activities allowed by future development could affect the drainage system in the Chino area with increased runoff, resulting in the need for additional stormwater drainage facilities. In addition, water quality could also be impacted by the discharge of soils and other pollutants as a result of such urban runoff and construction activities. Some areas in Chino are prone to ponding due to debris accumulation in storm drains and in flood control channels and drainage systems. However, the City of Chino provides Standard Conditions of Approval for new development in order to address drainage and water quality issues. These Conditions include the following:

- Prepare and submit a drainage study, including supporting hydraulic and hydrological data for approval. The study must identify the project's impact and all downstream drainage-mitigating measures, including, but not limited to, detention facilities.
- Prepare and submit a grading plan showing drainage routes and other pertinent information.
- Prepare and submit a Water Quality Management Plan (WQMP) to mitigate impacts to stormwater quality and quantity through the implementation of post-construction Best Management Practices (BMPs).

Similarly, Ordinance 94-01 of the City of Chino calls for reduction of pollutants in all stormwater discharges. At the Statewide level, the Porter-Cologne Act calls for the protection of water quality and sets forth the obligations for the SWRCB and RWQCBs to adopt and periodically update Basin Plans.

In addition, the Proposed General Plan includes policies and actions to control general erosion and runoff pollution. Objective PFS-10.1 states that the

City would control stormwater runoff. Policies P1 and P2 under this Objective call for stormwater runoff infrastructure to be maintained in good condition, as well as for stormwater runoff infrastructure to attain capacity that conforms with the requirements of the Master Plans of Drainage. To address potential erosion and runoff impacts from new storm drainage facilities, Objective PFS-10.1, P4 calls for stormwater runoff drainage facilities to be consistent with State and federal requirements, including NPDES requirements. Policy P6 calls for the City to implement a local stormwater program that achieves compliance with the provisions of the City's NPDES permit for area-wide urban stormwater runoff (MS4 Permit). The City's stormwater program activities shall also be coordinated with neighboring agencies as needed. Policy P7 calls for the City to continue to implement the City's Sewer System Management Plan to prevent sanitary sewer overflows from reaching local water bodies. Finally, Action A1 under this Objective calls for an update to the Master Plans of Drainage to reflect existing and future demand on stormwater runoff collection facilities. Implementation of the aforementioned policies and actions contained in the proposed projects would ensure *less than significant* impacts to drainage.

b. Water Quality

Residential, commercial, industrial, and agricultural land uses accommodated by the Proposed General Plan and Focused Growth Plan could increase pollution levels in stormwater. Additional traffic would also result in increased potential for oil, grease, and other contaminates. These changes could exacerbate pollution of local bodies of water such as Chino Creek. In addition, future development will result in increased use of solvents, lawn chemicals, paint, petroleum products, metals, and other material which could be carried to water bodies by surface runoff during rainstorms.

Implementation of the Proposed General Plan's Public Facilities and Services Element, Policies P1 through P3 under Objective PFS-8.1 would address these areas. Policy P1 would limit impermeable paving that would negatively impact surface water runoff through the project approval process. Policy P2 would require the protection of surface water resources from contamination

from runoff containing pollutants and sediment, through implementation of the Santa Ana Regional Water Quality Control Board's (SARWQCB) Best Management Practices. Policy P3 requires coordination with State and local agencies to identify and eliminate or minimize all sources of existing and potential point and non-point sources of pollution to ground and surface waters. These policies would reduce potential impacts to a *less-than-significant* level.

In addition to these policies, the OBMP will continue to guide Chino Groundwater Basin activities. The OBMP contains several elements designed to provide enhanced management of the local groundwater basin resource, including protection of water quality and the safe yield of the basin. Any impacts to the water quality associated with the Proposed General Plan and Focused Growth would be mitigated by a combination of recharge and other groundwater management activities accomplished by the Chino Basin parties, including the City, and coordinated by the Watermaster. Therefore, there would be a *less-than-significant* impact on groundwater quality.

c. Flooding and Dam Inundation

In terms of flooding and dam inundation risk, serious flooding could result in the contamination of water supplies, electrical outages, and the closure of major transportation routes that pass through the City. However, neither the Proposed General Plan nor the Focused Growth Plan propose housing or other urban structures within the 100-year flood hazard area. Since there would not be new development within the 100-year plain, there would be a less-than-significant impact related to flooding within a 100-year flood plain. To further assure that impacts related to flooding are reduced, the Proposed General Plan includes goals and policies to reduce hazards related to flooding or inundations. For example, policies under Goal SAF-2, Objective SAF-2.1 prohibit development in the 100-year flood zone if it would result in danger to life and property, create safety hazards, increase erosion or sedimentation, deteriorate water quality, or create excessive costs in providing emergency services during and after flooding. Policy P2 states that the City of Chino shall prevent construction of flood barriers within the 100-year flood zone which would divert flood water or increase flooding in other areas. In addi-

tion, Objective SAF-2.2., Policy P1 states that the City would only allow uses below the 566-foot flood inundation line if it is approved by the Corps. Furthermore, the inundation area is limited to open space areas, so there would be no damage to developed areas. With these aforementioned policies there would be a *less-than-significant* impact from the proposed projects.

d. Seiche, Tsunami, or Mudflow Hazards

As previously mentioned, the potential risk of seiche is low in Chino and the area is not at risk of tsunamis and mudflows. See Section 4.6 for a full discussion of land subsidence. As a result, adoption and implementation of the Proposed General Plan and Focused Growth Plan would result in *a less-than-significant* impact related to seiches, tsunamis, and mudflows.

6. Cumulative Impacts

As development proceeds within the City of Chino and its SOI, impervious surfaces would increase as would the amount of pollutants in runoff, thereby increasing stormwater drainage rates and potentially impacting surface and groundwater quality. However, water quality impacts would be reduced to less than significant levels by the implementation of the water quality policies contained in the Proposed General Plan. New development within San Bernardino County and adjacent cities would also result in an increase in runoff. However, regional development would also be required to comply with regional, State and federal regulations addressing stormwater runoff, water quality and flooding. These regulations would reduce the potential for a cumulative hydrology and water quality impact to a *less-than-significant* level.

7. Impacts and Mitigation Measures

Since no significant impacts were identified related to hydrology and water quality as a result of the Proposed General Plan or the Focused Growth Plan, no mitigation measures are required.