

## 4.9 HYDROLOGY AND WATER QUALITY

This section analyzes the hydrology and water quality conditions of local waterways on and near the project site and the project's potential impacts to these local waterways. This evaluation uses existing information from previously completed documents that address water resources in the project vicinity, including the following:

- ▶ *City of Manteca General Plan Background Report* (City of Manteca 1988),
- ▶ *City of Manteca 2000 Urban Water Management Plan, 2002 Update* (City of Manteca 2002),
- ▶ *Draft EIR for the City of Manteca General Plan 2023* (City of Manteca 2003),
- ▶ *City of Manteca Storm Drain Master Plan* (City of Manteca 2006), and
- ▶ *City of Manteca 2003 Storm Water Management Program* (City of Manteca 2003a).

The results of these reports are summarized in this section. Copies of these reports are available for review at the City of Manteca Community Development Department, 1001 W. Center Street, Manteca, California.

### 4.9.1 ENVIRONMENTAL SETTING

#### HYDROLOGY AND DRAINAGE

##### Project Site Surface Hydrology

The project site occupies approximately 16 acres of land in the Central Valley within the central portion of San Joaquin County in the southwestern portion of the City of Manteca (City). Existing ground slopes in the area are relatively flat, with an elevation of approximately 25 feet above mean sea level. Average annual rainfall on the project site is approximately 14 inches, with most of this rain occurring between November and March (Climate Zone 2006).

The project site is located in an inundation area for three dams located within the Manteca vicinity. The project site could be subject to flooding if the Tulloch Dam (located 37 miles east), San Luis Dam (located 46 miles south), or New Melones Dam (located 42 miles east) failed (City of Manteca 1988). The California Government Code (Section 8589.5) requires local jurisdictions to adopt emergency evacuation procedures for populated inundation areas. A Dam Failure Plan has been prepared by the local Office of Emergency Services that includes a description of dams, direction of floodwaters, responsibilities of local jurisdictions, and evacuation plans (City of Manteca 2003). Because an adequate evacuation plan exists in case of a dam failure that could affect the project site, flooding issues related to dam failure will not be discussed further in this Draft EIR.

The project site is located on relatively flat land with no drainages traversing the site. Major drainages in the project vicinity include Lone Tree Creek approximately 7 miles to the north, the Stanislaus River approximately 6 miles to the south, and the San Joaquin River approximately 2 miles west of the site. The nearest significant body of water is the San Joaquin River. The project site is not located in the 100-year floodplain, but is located in the 500-year floodplain (City of Manteca 2003). The project site is not located near an open body of water and therefore would not be subject to adverse effects associated with a tsunami; this issue will therefore not be addressed further in this Draft EIR.

The City currently provides storm drainage via a system of gravity storm drain lines that terminate at detention or retention facilities to provide storage to attenuate peak flows. There are currently 32 basins in the City with up to 65 additional basins planned for the future (City of Manteca 2006). Most storm water is pumped into South San Joaquin Irrigation District (SSJID) drains. There are currently 38 drainage pump stations in the City with an additional pump station planned for each proposed detention basin. The SSJID operates drainage facilities that traverse the City of Manteca and carry a portion of the City's stormwater drainage. Water in the SSJID drainage system flows west through drains and laterals into the French Camp Outlet Canal located at the western boundary of the City. From Manteca, the French Camp Outlet Canal flows north into the French Camp Slough and

ultimately drains into the Sacramento-San Joaquin Delta (Delta) northwest of the city. Existing road and railroad crossings of the French Camp Outlet Canal are undersized (i.e., they constrain the flow and can cause the back up of water) and require modification (e.g., expansion) to accommodate future peak buildout flows from the City (City of Manteca 2003). The City is planning for these new facilities through its Storm Drain Master Plan (City of Manteca 2006).

The City utilizes SSJID drains, laterals, and the French Camp Outlet Canal to convey stormwater runoff north to the French Camp Slough and the San Joaquin River. The storm drainage agreement between the City and the SSJID was re-adopted in February 2006.

The proposed project is located in the Drain 7 subshed, which serves approximately 1,600 acres of developed land. Drain 7 runs in an east-west direction immediately north of SR 120. Beginning on the east side of Speckles Avenue, the drain continues to the west and increases to 42 inches near Stonum Lane. The 42-inch pipe then continues west to Airport Way where a 3-foot by 10-foot box culvert carries the drain under Daniels Street near the “Big League Dreams” complex. The box culvert ends at the confluence with Drain 8 at the beginning of the French Camp Outlet Canal. Drain 7 is well controlled with 10 detention basins along its length (City of Manteca 2006).

All stormwater from the project site would drain into the existing Dutra NE stormwater detention basin located to the east of the project site. The Dutra NE basin is sized to accommodate the 16-acre project site (Milam, pers. comm., 2007). Please refer to Appendix F for basin capacity calculations and the storm drain plan for the Dutra NE stormwater detention basin.

### Groundwater Hydrology

The City is located in the Eastern San Joaquin County Groundwater Basin (ESJCGB), a sub-basin of the San Joaquin Valley Groundwater Basin. The Department of Water Resources (DWR) classified the ESJCGB as a basin in a critical condition of overdraft in DWR Bulletin 118-80 (California Department of Water Resources 2003).

Groundwater levels historically drop during severe drought periods and recover in subsequent wet periods; however, the Manteca area has experienced a long-term drop in groundwater levels resulting from local groundwater pumping and severe overdraft in the central and eastern portions of the groundwater basin. The City continues to reduce overdraft of groundwater supplies and maintain historical reliability of groundwater resources by limiting groundwater usage to meet the safe aquifer yield for the area identified as 1.0 acre-foot per acre per year by the City’s Public Works Department Engineering Division (Conarroe, pers. comm., 2006).

The City of Manteca historically extracted groundwater at a rate of approximately 2.4 acre-feet per acre per year. Recent groundwater extraction rates for the City are shown in Table 4.9-1. As shown in Table 4.9-1, the City relied exclusively on groundwater resources for domestic water supplies from the years 2000 through 2004.

	Year				
	2000	2001	2002	2003	2004
Acre-Feet Per Year	12,609	12,974	13,516	14,451	14,933
Percent of Total Water Supply	100	100	100	100	100
Source: City of Manteca 2005					

Within the Manteca area, groundwater levels have historically been relatively high as a result of its low topographic elevation and proximity to the San Joaquin River and Delta channels to the west. High groundwater can be influenced by water levels in the San Joaquin River, subsurface groundwater flow from areas of higher elevation to the east, and local irrigation practices. Groundwater recharge also may occur as a result of irrigation of agricultural lands and infiltration from streams flowing west out of the Sierra Nevada. The recharge occurs in areas with permeable materials that allow infiltration of water along streams, alluvial fans, and foothill areas (City of Manteca 2003).

## **Local Water Supplies**

The City currently provides domestic water to its customers through a network of wells and transmission lines that extract groundwater from underlying aquifers and distribute the water throughout the City. The City recently began receiving domestic water supplies from the SSJID's South County Water Supply Project (SCWSP), which conveys surface water to the City for municipal use. The SCWSP is a joint project between SSJID and the cities of Manteca, Lathrop, Escalon, and Tracy to supply treated potable water to these cities. The SCWSP involves the operation of a new surface water treatment plant near Woodward Reservoir in Stanislaus County and a 36.5-mile water transmission pipeline with pumping facilities to transport treated water to turnouts at each city. The SCWSP began supplying surface water supplies to the City in 2005 and is expected to provide sufficient surface water supplies to meet the City's future water demands. The City water supply is adequate to serve the proposed Stadium Center Phase III project (Conarro, pers. comm., 2007).

For additional information regarding local water supplies, the SCWSP, and groundwater pumping, see Section 4.10, "Public Services and Utilities."

## **WATER QUALITY**

### **Surface Water Quality**

Section 303(d) of the federal Clean Water Act requires each state to periodically prepare a list of all surface waters in the state for which beneficial uses of the water (e.g., drinking, recreation, aquatic habitat, and industrial use) are impaired by pollutants. These surface waters include water quality-limited estuaries, lakes, and streams that fall short of state surface water quality standards and are not expected to improve within the next two years.

California's Section 303(d) list, issued by the State Water Resources Control Board (SWRCB), identifies impaired status for channels in the eastern Delta and the San Joaquin River. Potential sources of pollution for all of the listed constituents in the basin include agriculture, resource extraction, and other unknown sources. Waters placed on the 303(d) list require preparation of Total Maximum Daily Loads (TMDLs), which identify the maximum amount of a pollutant allowed to be released into a water body to not further impair uses of the water, and allocate that amount among various sources.

### **Groundwater Quality**

The quality of the City's groundwater is expected to remain relatively unchanged for at least the next 10 years (City of Manteca 2002). Some areas of the City's groundwater basin are subject to saltwater intrusion from the Delta and adverse water quality impacts from infiltration of area runoff from urban and agricultural areas. Saline intrusion is the possible result of excessive groundwater withdrawal from aquifers. The extent of saline intrusion in the Manteca area is not well defined but is known to occur west of the City of Lathrop. Saline intrusion is an important issue related to the reliability of the existing groundwater system as it could result in well abandonment or water treatment to maintain existing water quality.

Several other known contaminants have the potential to affect the quality of groundwater for domestic use in the Manteca area (City of Manteca 2002). The concentrations of these have remained relatively stable, but have the potential to increase as a result of groundwater movement. They are:

## ***Nitrate***

Elevated levels of nitrate (as NO<sub>3</sub>) are found at six city wells at 30 milligrams per liter (mg/l) or higher. If these levels were to increase above the Maximum Contaminant Level (MCL) of 45 mg/l, production would have to stop from the source well and modified with screening of the upper portion of the aquifer where higher concentrations are found, or treating the water. The source of the nitrate is believed to be from past agricultural activities in the area.

## ***Arsenic***

The MCL for arsenic was lowered from 50 micrograms per liter (µg/l) to 10 µg/l in 2001, and became effective in 2006. Arsenic levels exceed the MCL of 10 µg/l at 12 of the 16 city wells, which have concentrations of 12 to 19 µg/l. Arsenic treatment has been initiated at each well to lower levels to below the MCL, and will be installed in any new wells constructed that exceed the MCL.

## ***Manganese***

There is no primary MCL for manganese. The city has one well that exceeds the secondary MCL of 50 µg/l. This well has been installed with a filter to bring it into compliance. The secondary MCL addresses the aesthetic characteristics of water (e.g., taste and odor).

## ***Organic Chemicals***

Ethylene dibromide (EDB), dibromochloropropane (DBCP) and perchloroethylene (PCE) have been detected at low levels in seven of the city's wells. EDB and DBCP, agricultural chemicals that have been used in the surrounding area, are below the MCL in all but one well, which has been fitted with an activated carbon filter to remove the EDB and DBCP. PCE has been detected at one well at levels below the MCL. Concentrations of EDB and DBCP are expected to decline over time, as they have not been used for 20 years. PCE is also expected to decline as use of this chemical is more closely regulated.

## **4.9.2 REGULATORY SETTING**

### **HYDROLOGY**

#### **Federal Plans, Policies, Regulations, and Laws**

No hydrology-related federal plans, policies, regulations, or laws are applicable to the proposed project.

#### **State Plans, Policies, Regulations, and Laws**

##### ***Sacramento and San Joaquin River Basins Comprehensive Study***

The Sacramento and San Joaquin River Basins Comprehensive Study is a joint effort by the State Reclamation Board and the U.S. Army Corps of Engineers (USACE), in coordination with federal, state, and local agencies, groups, and organizations in California's Central Valley, to develop a comprehensive plan for flood damage reduction and environmental restoration for the Sacramento and San Joaquin River basins. The comprehensive study is a region-wide planning effort and not a regulatory program; however, consistency with its goals and objectives is important for any project affecting flood control in the Sacramento-San Joaquin River basins. The proposed project site is located in the Lower San Joaquin River Region of the comprehensive study area.

## Regional and Local Plans, Policies, Regulations, and Ordinances

### **City of Manteca General Plan 2023**

The *City of Manteca General Plan 2023* (City of Manteca 2003b) includes policies to maintain adequate service in the City's drainage system and to protect both surface and groundwater resources from contamination. The following policy is relevant to this analysis:

#### Public Facilities and Services Element

- ▶ **Policy PF-P-28:** Storm drainage systems within new development areas shall include open drainage corridors, where feasible, to supplement or replace an underground piped drainage system. The drainage system would provide for short-term storm water detention, storm water conveyance for storm waters exceeding a 10-year event, storm water quality treatment, bike and pedestrian paths, and visual open space within neighborhoods. The width and length of the corridors would be determined by the storm water management requirements. The drainage systems would provide a pedestrian connection between parks and access to open space from residential neighborhoods. The neighborhoods would be designed with homes oriented to, rather than backing on the open space corridor.

### **City of Manteca Storm Drain Master Plan**

The City's 2006 *Storm Drain Master Plan* (SDMP) is based on the City's Drainage Design Criteria supplemented by the SSJID's requirements and standards, San Joaquin County's Improvement Standards, and the County Hydrology Manual. These standards are further supplemented by design practices of other cities and counties and by the *California Stormwater Quality Association Stormwater Best Management Practice Handbook* (City of Manteca 2006).

The policies and criteria included in the SDMP are designed to guide and set minimum standards for the design of storm drainage conveyance, detention facilities, and drainage pump stations within the City. Storm drain design must conform to the City's current SDMP and the City's standard Plans and Specifications. The SDMP requires drainage studies to be submitted and accepted by the Public Works Department prior to completion of a tentative subdivision or parcel map.

The SDMP requires all new development to provide drainage plans that require that new projects do not adversely affect adjacent properties and that allow all properties within a given watershed an appropriate means of discharging surface runoff. The City's storm drainage design standards require that a drainage report/designs be prepared for all proposed development projects, regardless of size. The report must include maps showing drainage basins relative to the project and sub-basins within the project, with catch basin and inlet locations, and calculations of design runoff before and after subdivision development. Hydraulic calculations for depth of flow and quantity of runoff, pipe sizing, pump stations, and detention/retention basins must be included in the drainage report. All urban development within the City is required to be protected from flooding.

The City's SDMP includes the following drainage requirements and design standards that are relevant to the project:

- ▶ all stormwater improvements shall comply with the requirements of the SSJID agreement with the City;
- ▶ operation of stormwater facilities shall comply with SSJID requirements to eliminate uncontrolled inflows to drains and laterals;
- ▶ the City shall assure an adequate level of service in drainage systems to accommodate runoff from existing and projected development; and

- ▶ design of storm drain systems within new developments shall consider the use of open drainage corridors where feasible as an alternative to an underground pipe drainage system. Open drainage corridors may provide short-term detention storage and storm water quality treatment.

## **GROUNDWATER HYDROLOGY**

California groundwater law is extremely complicated because of the variety of groundwater rights recognized in the state. Groundwater is classified as either a subterranean stream or percolating groundwater. A subterranean stream exists when the flow of groundwater is confined to a known and defined subsurface channel. Groundwater not flowing as a subterranean stream is classified as percolating groundwater. Subterranean streams are subject to surface water law, which recognizes riparian and appropriative rights, and are regulated by the SWRCB. Percolating groundwater is subject to general court-enforced principles of groundwater law, which recognizes overlying and appropriative rights. This latter category of groundwater can be regulated by ordinances adopted at the local level but is generally not subject to SWRCB regulation or oversight. Groundwater underlying the City of Manteca is classified as percolating groundwater.

## **WATER QUALITY**

### **Federal Plans, Policies, Regulations, and Laws**

#### ***Federal Clean Water Act***

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

#### **Water Quality Criteria and Standards**

Under federal law, 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: identified designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires 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, EPA has granted the State Water Board and its nine regional water quality control boards (regional water boards) the authority to identify beneficial uses and adopt applicable water quality objectives.

#### **National Pollutant Discharge Elimination System Permit Program**

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 municipal 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 1 of the permitting program applied to municipal discharges of stormwater in urban areas where the population exceeded 100,000 persons. Phase 1 also applied to stormwater discharges from a large variety of industrial activities, including general construction activity if the project would

disturb more than 5 acres. Phase 2 of the NPDES stormwater permit regulations, which became effective in March 2003, required that NPDES permits be issued for construction activity for projects that disturb between 1 and 5 acres. Phase 2 of the municipal permit system (known as the NPDES General Permit for Small Municipal Separate Storm Sewer Systems [MS4s]) requires small municipal areas of less than 100,000 persons to develop stormwater management programs. The Regional Water Quality Control Boards (RWQCBs) in California are responsible for implementing the NPDES permit system (see additional information below).

### **Section 401 Water Quality Certification or Waiver**

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 a certificate from the appropriate state agency stating that the fill is consistent 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 SWRCB to the nine RWQCBs.

### **State Plans, Policies, Regulations, and Laws**

In California, the State Water Board has broad authority over water quality control issues for the state. The State Water Board 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 Health Services (DHS) (for drinking water regulations), the California Department of Pesticide Regulation, the California Department of Fish and Game, and the Office of Environmental Health and Hazard Assessment.

Regional authority for planning, permitting, and enforcement is delegated to the nine regional water boards. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The Central Valley Regional Water Board is responsible for the water bodies in the project vicinity.

### ***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 State Water Board and regional water boards 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 Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The act also requires waste dischargers to notify the regional water boards of their activities through the filing of Reports of Waste Discharge (RWD) and authorizes the State Water Board and regional water boards to issue and enforce waste discharge requirements (WDRs), NPDES permits, Section 401 water quality certifications, or other approvals. The regional water boards also have authority to issue waivers to RWD/WDRs for broad categories of "low threat" discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

### ***Water Quality Control Plan for the Sacramento-San Joaquin River Basins***

The Water Quality Control Plan for the Sacramento-San Joaquin River Basins (Basin Plan), adopted by the Central Valley RWQCB in 1998, identifies the beneficial uses of water bodies and provides water quality objectives and standards for waters of the Sacramento River and San Joaquin River basins, including the Delta. State and federal laws mandate the protection of designated "beneficial uses" of water bodies. Section 13050(f) of the California Water Code defines beneficial uses as "domestic; municipal; agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves." Additional protected beneficial uses of the San Joaquin River include groundwater recharge and fresh water replenishment.

The Basin Plan contains specific narrative and numeric water quality objectives for a number of physical properties (e.g., temperature, turbidity, and suspended solids), biological constituents (e.g., coliform bacteria), and chemical constituents of concern, including inorganic parameters, trace metals, and organic compounds. Water quality objectives for toxic priority pollutants (i.e., select trace metals and synthetic organic compounds) are included in the Basin Plan and the California Toxics Rule (CTR) that was adopted in May 2000.

### ***1995 Bay-Delta Water Quality Control Plan***

The Central Valley Project (CVP) and the State Water Project (SWP) are currently responsible for maintaining water quality in the Delta to standards established by the State Water Board as stipulated in the 1995 Bay-Delta Water Quality Control Plan (Bay-Delta Plan). Among the various criteria described in the Bay-Delta Plan are numeric objectives for water quality constituents (salinity and dissolved oxygen), numeric operational constraints for the CVP and SWP, a narrative objective to protect salmon, and a narrative objective to protect brackish tidal marshes in Suisun Marsh. The Bay-Delta Plan is the substantive regulatory authority over Delta hydrologic conditions. Compliance with the standards is maintained, in part, by regulating the releases from CVP and SWP reservoirs upstream of the Delta. During certain months of certain years, a major portion of inflow to the Delta is affected by CVP and SWP regulation.

### ***NPDES Permit System and WDRs***

The SWRCB and Central Valley RWQCB have adopted specific NPDES permits for a variety of activities that have potential to discharge wastes to waters of the state. The SWRCB's statewide stormwater permit for general construction activity (Order 99-08-DWQ, as amended) is applicable to all land-disturbing construction activities that would disturb more than one acre. The Central Valley RWQCB's general NPDES permit for construction dewatering activity (Order 5-00-175) authorizes direct discharges to surface waters of up to 250,000 gallons per day for no more than a 4-month period each year. The NPDES permit requires submittal to the Central Valley RWQCB a Notice of Intent (NOI) to discharge and implementation of best management practices (BMPs) to minimize those discharges. The Central Valley RWQCB may also issue site-specific WDRs, or waivers to WDRs, for certain waste discharges to land or waters of the state. In particular, Central Valley RWQCB Resolution R5-2003-0008 identifies activities subject to waivers of WDRs and/or WDRs for a variety of activities, including minor dredging activities and construction dewatering activities that discharge to land.

Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of permanent post-construction BMPs that would remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements. In response to a court decision, the Central Valley RWQCB implemented mandatory water quality sampling requirements in Resolution 2001-046 for visible and nonvisible contaminants in discharges from construction activities.

Water quality sampling is required if an activity could result in the discharge of turbidity or sediment to a water body that is listed as impaired under Section 303(d), or if a release of a nonvisible contaminant occurs. Where such pollutants are known or should be known to be present and have the potential to contact runoff, sampling and analysis is required. NPDES permits require the implementation of design and operational BMPs to reduce the level of contaminant runoff. Types of BMPs include source controls, treatment controls, and site planning measures.

Discharges subject to the SWRCB's NPDES general permit for construction activity must develop and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and description of construction activities and identifies the BMPs that would be employed to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. A monitoring program is generally required to ensure that BMPs are implemented according to the SWPPP and are effective at controlling discharges of stormwater-related pollutants.

## ***Safe Drinking Water Act***

Under the Safe Drinking Water Act (Public Law 93-523), passed in 1974, the federal EPA regulates contaminants of concern to domestic water supply. Contaminants of concern relevant to domestic water supply are defined as those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are regulated by EPA primary and secondary Maximum Contaminant Levels (MCLs). MCLs and the process for setting these standards are reviewed triennially. Amendments to the SDWA enacted in 1986 established an accelerated schedule for setting drinking water MCLs.

The EPA has delegated to DHS the responsibility for administering California's drinking water program. DHS is accountable to the EPA for program implementation and for adopting standards and regulations that are at least as stringent as those developed by the EPA.

Title 22 of the California Code of Regulations (Article 16, Section 64449) also defines secondary drinking water standards, which are established primarily for reasons of consumer acceptance (i.e., taste) rather than for health issues. For mineralization (i.e., TDS and chloride), the secondary standards are expressed in the form of recommended, upper, and short-term MCLs. The recommended, upper, and short-term MCLs for TDS are 500, 1,000, and 1,500 milligrams per liter, respectively.

## **Regional and Local Plans, Policies, Regulations, and Ordinances**

### ***City of Manteca General Plan 2023***

The Resource Conservation Element (Water Quality) of the City general plan provides policies to protect both surface and groundwater resources from contamination (City of Manteca 2003b). The following policies may be relevant to the project:

- ▶ **Policy RC-P-11:** Minimize pollution of waterways and other surface water bodies from urban runoff.
- ▶ **Policy RC-P-12:** Protect the quality of Manteca's groundwater.

The City's general plan also includes provisions that new commercial development with a significant potential to adversely affect San Joaquin River water quality or groundwater quality shall not be approved; that buffer areas between waterways and urban development shall be maintained to protect water quality and riparian areas; that BMPs shall be utilized to limit urban pollutants from entering water courses; and that compliance with the RWQCB regulations and standards to maintain and improve groundwater quality in Manteca shall be required.

### ***City of Manteca Storm Water Management Program***

The City of Manteca *Storm Water Management Program* (SWMP) provides for the City's compliance with Section 402(p) of the CWA for MS4 operators and with General Permit Number CAS000004, Water Quality Order No. 2003-0005-DWG, issued April 30, 2003 (City of Manteca 2003b). Development within the City is governed primarily by the requirements of Attachment 4 to the General Permit. Attachment 4 provides guidance and design standards required to achieve stormwater quality objectives. In addition to receiving water limitations, the guidance standards state that discharges shall not cause or contribute to an exceedance of water quality standards contained in a Statewide Water Quality Control Plan, the CTR, or the San Joaquin River Basin Plan.

## **4.9.3 ENVIRONMENTAL IMPACTS**

### **ANALYSIS METHODOLOGY**

The environmental analysis for hydrology and water quality was based on documents and plans prepared for the project site, and other sources including the recent *City of Manteca General Plan Draft EIR* (City of Manteca

2003) to the degree it was applicable to the project. The project's hydrology and water quality effects were compared to environmental baseline conditions (i.e., existing conditions) to determine impacts.

## THRESHOLDS OF SIGNIFICANCE

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines. The proposed project was determined to result in a significant effect related to hydrology and water quality if it would:

- ▶ violate any water quality standards or waste discharge requirements, including violating NPDES waste discharge or stormwater runoff requirements, state or federal antidegradation policies, enforceable water quality standards contained in the Central Valley RWQCB Basin Plan or statewide water quality control plans, or federal rulemakings to establish water quality standards in California;
- ▶ 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 or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- ▶ create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- ▶ substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a substantial lowering of the local groundwater table level;
- ▶ substantially degrade water quality;
- ▶ 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;
- ▶ place within a 100-year flood hazard area structures that would impede or redirect flood flows; or
- ▶ 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.

## IMPACT ANALYSIS

**IMPACT 4.9-1**      **Hydrology and Water Quality–Temporary Construction-Related Water Quality Effects.** *Temporary construction-related ground disturbances on the project site could result in the discharge of stormwater and non-stormwater discharges containing pollutants to nearby drainage systems and ultimately into the San Joaquin River. The discharge of pollutants to local waterways would be a **potentially significant** construction-related water quality impact.*

Grading, earth moving, excavation and utility installation, infrastructure development, and building construction would disturb the existing vegetative cover and soil over the entire site. Construction activities are anticipated to occur in two phases. The Lowe's Home Improvement Warehouse would be developed in the first phase over a 5-10 month construction period, and the three retail buildings would be developed in the second phase approximately 12 months after completion of the Lowe's Home Improvement Warehouse. During this period, disturbed portions of the project site would be subject to exposure from wind erosion, rainfall, and winter stormwater runoff events. In particular, construction activities could result in substantial soil erosion and stormwater discharges of suspended solids, increased turbidity, and potential mobilization of other pollutants from project construction areas as contaminated runoff or direct discharges to drainage channels. Although the project

site is relatively flat and the potential for soil erosion is considered low, intense rainfall and associated stormwater runoff could result in short periods of sheet erosion within areas of exposed or stockpiled soils. If erosion is uncontrolled, soil materials could cause sedimentation and blockage of nearby drainage channels. Further, compaction of soils by heavy equipment may reduce the infiltration capacity of soils and increase the potential for runoff and erosion. Consequently, the potential surface water quality impacts on off-site drainage channels from proposed construction activities would be **potentially significant**.

**IMPACT 4.9-2**      **Hydrology and Water Quality–Long-Term Water Quality Effects of Urban Runoff.** *The project would convert agricultural land to commercial shopping center use, and thereby change the amount and timing of potential waste discharges in stormwater runoff. Because specifics related to the stormwater drainage system and water quality treatment features that would be constructed to serve the project site are unknown at this time, the storm drain system would have the potential to discharge urban and construction-related contaminants into SSJID water drainage facilities. Therefore, this would be a **potentially significant** impact.*

The existing land use on the project site is agriculture. In general, irrigation and stormwater runoff from agricultural lands, including the project site, are not considered to be of high quality and contain a variety of constituents/contaminants in relatively high concentrations. In addition, agricultural runoff is not typically treated prior to discharge. Conversion of agricultural land to urban land uses would alter the types, quantities, and timing of contaminant discharges in stormwater runoff relative to existing conditions. If this stormwater runoff is uncontrolled and not treated, the water quality of the discharge could adversely affect off-site drainage channels and downstream water bodies.

Commercial activities could contribute to water quality degradation through maintenance of landscaping associated with the use of fertilizers, herbicides, and pesticides; and motor vehicle operation. In addition, an increase in impervious surfaces would have the potential to increase the volume of runoff discharges from the project site. Runoff from developed uses typically contains contaminants such as oils, grease, fuel, antifreeze, by-products of combustion (e.g., lead, cadmium, nickel, and other metals), nutrients, sediment, and other pollutants. Project implementation could result in discharge of pollutants to downstream water bodies including the San Joaquin River.

Stormwater runoff generated on the project site would be collected in the Drain 7 drainage system and a proposed on-site drainage system. The proposed on-site drainage system would be designed to be consistent with the goals and policies of the Public Facilities and Services Element of the City general plan (policy PF-P-28), and would include structural water quality treatment measures consistent with the City’s standards and ordinances and as outlined in the City’s Storm Drain Master Plan. Stormwater would pass through these treatment measures and continue to the Dutra NE stormwater detention basin, where it would then be pumped to SSJID facilities. However, specific BMPs that would be implemented to remove pollutant constituents from stormwater runoff have not been identified or included as an element of the project. As a result, because it is unknown whether measures would be in place to sufficiently remove pollutants from the project’s stormwater, the project could result in **potentially significant** water quality impacts.

**IMPACT 4.9-3**      **Hydrology and Water Quality–Potential On-site and Off-site Flooding Risk from Increased Stormwater Runoff.** *Project implementation would increase the area of impervious surfaces on-site, thereby resulting in increased surface runoff and discharge. Approximately 18 acre-feet per day of stormwater would be discharged to the Dutra NE storm drainage system. The project involves construction of a stormwater runoff collection system to provide on-site stormwater collection discharge capacity, and the existing Dutra NE storm drainage basin provides storage and discharge capacity sufficient to protect the project site during a 48-hour, 100-year flood event and avoid off-site flooding. Therefore, this would be a **less-than-significant** impact.*

The incremental increase in runoff generated on the project site and discharged off-site would not substantially increase flows in a manner that would cause flooding at or downstream of the project site. Based on information provided by the project applicant, the total runoff for the project site is estimated to be 18 acre-feet per day (Bouillon, pers. comm., 2007). The project involves construction of a stormwater runoff collection system to provide on-site stormwater collection discharge capacity, and stormwater runoff would be discharged to the existing Dutra NE storm basin located east of the project site on Laurel Park Circle. The Dutra NE drainage basin is sized to accommodate the proposed project (Milam, pers. comm., 2007), and would provide storage and discharge capacity sufficient to protect the project site during a 48-hour, 100-year flood event. Discharge from the Dutra NE drainage basin would be directed to the 42-inch SSJID storm drain pipe in Daniels Street. Therefore, the proposed drainage system would provide sufficient capacity to address project generated stormwater and would prevent stormwater-related flooding damage on the project site.

Because the proposed project involves construction of an adequately sized on-site stormwater runoff collection system and the existing Dutra NE storm basin would provide storage and discharge capacity sufficient to protect against on-site and off-site flooding risks, this would be a **less-than-significant** impact.

**IMPACT**      **Hydrology and Water Quality–Impacts to Groundwater.** *The project would increase demands for domestic water supplies to serve project development. To meet water supply demands, the City of Manteca has a conjunctive use water supply system that draws water from groundwater wells and uses surface water supplied from the SCWSP. The City's participation in this project eliminated its exclusive reliance on groundwater for water supplies and allows the City to maintain groundwater pumping yields within the sustainable yields of the underlying aquifer. The potential for groundwater overdraft or substantial lowering (i.e., 10 feet or more) of local groundwater levels is not anticipated to occur because these effects are minimized through implementation of the SCWSP water supply system in the City. Therefore, groundwater impacts would be less than significant.*

**4.9-4**

The project would result in increased demand for water supply. Domestic water supply would be provided by the City of Manteca and would originate from groundwater resources and surface water resources from the SSJID's SCWSP. The proposed project would not result in the construction of any on-site water wells or utilize existing irrigation wells for landscape irrigation. Water for landscape irrigation would be provided by the City (Bouillon, pers. comm., 2007). Project implementation would increase the City's overall demand for domestic water supplies. As such, the project would contribute to the City's continued need to pump groundwater to use conjunctively with available surface water supplies.

Although operation of City groundwater wells could result in minor localized draw down effects (i.e., lowering of the groundwater table) in the area, these effects are minimized through implementation of the SCWSP water supply system in the City. Groundwater modeling performed for the SCWSP EIR (May 2000) indicates that over the long-term, groundwater storage and water levels would increase in the SSJID region. The EIR concluded that with implementation of the SCWSP, the long-term impact on the basin's ground water elevations would be negligible and, therefore, less-than-significant. Implementation of the proposed project is not anticipated to result in the substantial lowering (i.e., 10 feet or more) of the local groundwater table. In addition, the City general plan identifies the SCWSP as the primary source of water to supplement groundwater and eliminate over-drafting. Further, the City is currently exploring opportunities to reuse reclaimed wastewater from the City's wastewater treatment plant; however, no formalized plans on the reuse of this water are currently available (Conarro, pers. comm., 2006).

The SCWSP began supplying surface water supplies to the City in 2005 and is expected to provide sufficient surface water supplies to meet the City's water demands. However, groundwater wells would remain in place to supplement the City's water supply during dry years and to provide appropriate reliability and redundancy in the City's water supply system. Please refer to Section 4.10, "Public Services and Utilities", for additional details regarding water supply.

An irrigation well is located in the southwest corner of the project site. Because water for site irrigation would be provided by the City, the irrigation well would be decommissioned in accordance with local and state standards. With the decommissioning of the existing on-site well, no groundwater would be pumped at the site.

Because sufficient surface water supplies (as part of the SCWSP) are currently available to serve the proposed project (as discussed in Section 4.10, “Public Services and Utilities”), the potential for overdraft of groundwater aquifers is not anticipated to occur with implementation of the project. On-site groundwater pumping is anticipated to be less than historic on-site groundwater pumping for agricultural purposes because an existing on-site well will be decommissioned. Therefore, the project would result in a **less-than-significant** impact to groundwater resources.

**IMPACT 4.9-5**      **Hydrology and Water Quality–Reduction in Groundwater Recharge.** *The project site does not serve as a substantial groundwater recharge area. Therefore, development of the site would result in a less-than-significant groundwater recharge impact.*

The project would be connected to the City’s municipal water system, which is supplied by a number of water wells located throughout the community as well as the SSJID surface water supply. In addition, on-site groundwater pumping is anticipated to be less than historic on-site groundwater pumping for agricultural purposes because an existing on-site irrigation well will be decommissioned.

The project site does not have streams or alluvial fan conditions that could function as substantial groundwater recharge areas, and thus changes in the land use are not expected to affect overall groundwater supplies or recharge rates. Further, agricultural land is northwest of the project site and these agricultural uses would continue to provide limited amounts of groundwater recharge. The *City of Manteca General Plan Draft EIR* concluded that no areas in the Manteca area provide a substantial source of groundwater recharge (City of Manteca 2003). Therefore, implementation of the project is not anticipated to substantially affect groundwater recharge rates in the area. This would be a **less-than-significant** groundwater recharge impact.

#### **4.9.4      MITIGATION MEASURES**

No mitigation measures are required for the following less-than-significant impacts:

Impact 4.9-3: Potential On-site and Off-site Flooding Risk from Increased Stormwater Runoff.

Impact 4.9-4: Impacts to Groundwater.

Impact 4.9-5: Reduction in Groundwater Recharge.

The following mitigation measures are provided for potentially significant impacts:

**Mitigation Measure 4.9-1: Temporary Construction-Related Water Quality Effects.** The project applicant shall implement Mitigation Measure 4.7-3, “Construction-Related Erosion Hazards.”

**Mitigation Measure 4.9-2: Long-Term Water Quality Effects of Urban Runoff.** The project applicant shall implement permanent water quality features (BMPs) designed in conformance with standards of the Central Valley RWQCB, the City of Manteca, and SSJID. The applicant shall submit designs for these features to the City prior to issuance of a grading permit. The project applicant shall implement BMPs such as, but not limited to, the following:

- a) The project applicant shall ensure that post-development peak stormwater runoff discharge rates do not exceed the estimated pre-development rate to decrease the potential for downstream erosion. To address peak stormwater discharge rates, the project applicant shall confirm that the Dutra NE stormwater basin is properly sized to accommodate the proposed project.

- b) The project shall be designed to minimize, to the maximum extent practicable, the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas, to the storm water conveyance system as approved by the City. Pollutants of concern consist of any pollutants that exhibit one or more of the following characteristics: current loadings or historic deposits of the pollutant are adversely affecting the beneficial uses of a receiving water, elevated levels of the pollutant are found in sediments of a receiving water and/or have the potential to bioaccumulate in organisms therein, or the detectable inputs of the pollutant are at concentrations or loads considered potentially toxic to humans and/or flora and fauna.
- c) The project applicant shall provide storm drain system stenciling and signage, where appropriate. Storm drain stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets. The stencil contains a brief statement that prohibits the dumping of improper materials into the storm water conveyance system. Graphical icons, either illustrating anti-dumping symbols or images of receiving water fauna, are effective supplements to the anti-dumping message. All storm drain inlets and catch basins within the project area shall be stenciled with prohibitive language (e.g., NO DUMPING – DRAINS TO RIVER) and/or graphical icons to discourage illegal dumping.
- d) Where proposed project plans include outdoor areas for storage of materials that may contribute pollutants to the storm water conveyance system, the following structural or treatment BMPs shall be implemented:
- ▶ materials with the potential to contaminate storm water shall be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the storm water conveyance system; or (2) protected by secondary containment structures such as berms, dikes, or curbs;
  - ▶ the storage area shall be paved and sufficiently impervious to contain leaks and spills; and
  - ▶ the storage area shall have a roof or awning to minimize collection of storm water within the secondary containment area.
- e) To minimize the off-site transport of pollutants in parking areas, the applicant shall implement stormwater BMPs, such as bioretention areas in landscaping or any swale areas (to the maximum extent feasible), to infiltrate or treat runoff.

Implementation of nonstructural BMPs, through various public education and outreach programs maintained by the City under the municipal NPDES stormwater permit, would also serve to limit the types, amounts, and likely discharges of urban runoff into stormwater.

#### **4.9.5 LEVEL OF SIGNIFICANCE AFTER MITIGATION**

With implementation of the mitigation measures identified above, the project's hydrology and water quality impacts would be reduced to a less-than-significant level because preparation of a grading and erosion control plan and implementation of BMPs would ensure that urban runoff does not impair water quality in off-site water bodies. Implementation of these mitigation measures would also make the project consistent with the City's general plan policies related to water quality (policies RC-P-11 and RC-P-12).