



Section 5.8

Hydrology and Water Quality



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Section 5.8

5.8.1 PURPOSE

This section describes the existing hydrological and water quality conditions within the City of Artesia. The potential impacts that could result from implementation of the proposed General Plan Update are analyzed, and where significant impacts are identified, mitigation measures are recommended to avoid or reduce these impacts to a less than significant level.

5.8.2 EXISTING REGULATORY SETTING

CLEAN WATER ACT

The principal law governing pollution of the nation's surface waters is the Clean Water Act (CWA), formerly known as the Federal Water Pollution Control Act (FWPCA). Originally enacted in 1948, it has been amended several times since. As amended in 1977, the law became commonly known as the CWA. The CWA is a Federal law that protects the nation's surface waters, including lakes, rivers, coastal wetlands, and "waters of the United States." The CWA includes provisions that authorize federal financial assistance for municipal sewage treatment plants and the regulatory requirements that apply to industrial and municipal dischargers. The law gave the authority to set effluent standards on an industry basis. In addition, the CWA requires states to adopt water quality standards that "consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses."

The CWA specifies that discharges to waters are illegal, unless authorized by an appropriate permit. The permits regulate the discharge of dredged and fill materials, construction-related stormwater discharges, and activities that may result in discharges of pollutants to waters of the U.S. Section 404 of the CWA establishes a permit program for the discharge of dredge or fill materials into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE). If waters of the U.S. are located on or downstream of a project site, the project may discharge to them, and if impacts on them are anticipated, the project must obtain a CWA Section 401 Water Quality Certification. Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredge or fill material) into waters of the U.S. This permitting program is administered by the RWQCBs. In addition, Section 303 and 304 of the CWA provide for water quality standards, criteria, and guidelines.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Control Act acts in cooperation with the CWA to establish the State Water Resources Control Board (SWRCB). The SWRCB and nine Regional Water Quality Control Boards (RWQCB), overseen by the SWRCB, are responsible for protecting California's surface and groundwater supplies.



The Porter-Cologne Water Quality Control Act establishes Basin Plans for each of the nine regions overseen by the RWQCB that designate the beneficial uses of California's rivers and groundwater basins. The Basin Plans also establish narrative and numerical water quality objectives for those waters. Basin Plans are updated every three years and provide the basis of determining waste discharge requirements, taking enforcement actions, and evaluating clean water grant proposals. The Porter-Cologne Water Quality Control Act is also responsible for implementing CWA Sections 401-402 and 303(d) to SWRCB and RWQCBs.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM PERMIT

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

Enacted in 1990, Phase I of the Stormwater Rule applied to municipal separate storm sewer systems (MS4s) with a service population of 100,000 or more, to construction projects affecting 5.0 acres or more of land disturbance, and to certain industrial activities. The NPDES Phase II Final Rule was adopted in December 1999 and requires operators of small municipal separate storm sewer systems (MS4s) located in designated urbanized areas (UAs) and in areas meeting certain regulatory criteria to develop and implement Stormwater Management Programs (SWMPs).

Under the NPDES Phase II Rule and the MS4 General Permit, Small MS4s that meet specific criteria must obtain MS4 General Permit coverage for stormwater discharges. Artesia is under the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB). The Los Angeles RWQCB issues MS4 General Permit coverage for the County of Los Angeles (County). The County was required to comply with Federal NPDES Phase II requirements and submitted a Notice of Intent (NOI) to comply with the State's MS4 General Permit to the RWQCB. To comply with the State's MS4 General Permit, the MS4 operator (in this case, the County) must implement a Stormwater Management Program (SWMP) that reduces the discharge of pollutants to the "Maximum Extent Practicable" (MEP), that protects water quality and that satisfies the requirements of the Clean Water Act according to California's MS4 General Permit.

STATE REGIONAL WATER QUALITY CONTROL BOARD STORMWATER GENERAL CONSTRUCTION PERMIT

In 1999, the SWRCB adopted Order No. 99-08-DWQ, NPDES General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Stormwater Runoff Associated with Construction Activity (General Construction Permit). This permit was subsequently amended to include smaller construction sites. The General Construction Permit requires that construction sites with 1.0 acre or greater of soil disturbance or less than 1.0 acre, but part of a greater



common plan of development, apply for coverage for discharges under the General Construction Permit by submitting a Notice of Intent (NOI) for coverage, developing a Stormwater Pollution Prevention Plan (SWPPP), and implementing Best Management Practices (BMPs) to address construction site pollutants.

The SWRCB has identified the City of Artesia, as being subject to NPDES Phase II requirements under the MS4 General Permit.

COUNTY OF LOS ANGELES

In partial implementation of CWA Section 402(p) the Phase I and Phase II Storm Water Regulations and the CWC, the Los Angeles RWQCB issued "Order No. 01-182 (NPDES Permit No. CAS004001), Waste Discharge Requirements For Municipal Storm Water and Urban Runoff Discharges Within the County of Los Angeles and the Incorporated Cities Therein, Except the City of Long Beach" (the "2001 Permit") on December 13, 2001, to cities in Los Angeles County, including the City of Artesia. The City is a permittee under the 2001 Permit and therefore is required by federal and state law to implement all requirements of the 2001 Permit. The goal of the 2001 Permit is to have discharges from land uses in Los Angeles County drainage basins meet water quality standards suitable for the protection of the beneficial uses of the receiving waters (lakes, rivers, ground water and the ocean).

The Los Angeles RWQCB increased its requirements for the Municipal NPDES Permit. The new requirements of the Municipal NPDES permit require the development of a Standard Urban Stormwater Mitigation Plan (SUSMP). Guidelines for the requirements associated with the SUSMP are described in detail in the Development Planning for Stormwater Management - A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP) (2002) prepared by the Los Angeles County Department of Public Works.

FEDERAL EMERGENCY MANAGEMENT AGENCY

On March 1, 2003, the Federal Emergency Management Agency (FEMA) became part of the U.S. Department of Homeland Security (DHS). FEMA's primary mission is to reduce the loss of life and property and protect the Nation from all hazards, including flooding, among others.

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

Flood zones are geographic areas that FEMA defines, based on studies of flood risk. The zone boundaries are shown on flood hazard maps, also called Flood Insurance Rate Maps (FIRM). High Risk Zones or Special Flood Hazard Areas (Zone A) are high-risk flood areas where special flood, mudflow, or flood-related erosion hazards exist and flood insurance is mandatory. Low-to-Moderate Risk Zones or Non-Special Flood Hazard Areas (Zones B, C, X) are areas that



are not in any immediate danger from flooding caused by overflowing rivers or hard rains. Insurance purchase is not required in these zones.

FEMA is responsible for administering the National Flood Insurance Program (NFIP), which enables property owners in participating communities to purchase insurance as protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages. In communities that participate in the NFIP, mandatory flood insurance purchase requirements apply to all Zones A, which are communities subject to a 100-year flood event. In addition to providing flood insurance and reducing flood damages through floodplain management regulations, the NFIP identifies and maps the Nation's floodplains on FIRMs.

CITY OF ARTESIA MUNICIPAL CODE

Artesia Municipal Code (AMC) Title 6 Chapter 7, *Storm Water Management and Discharge Control*, is known as the "City of Artesia Storm Water Management and Discharge Control Ordinance." The purpose of this chapter is to ensure the future health, safety, and general welfare of the citizens of the City and the water quality of the receiving waters of the County of Los Angeles and surrounding coastal areas by:

- (1) Reducing pollutants in stormwater discharges to the maximum extent practicable;
- (2) Regulating illicit connections and illicit discharges and thereby reducing the level of contamination of stormwater and urban runoff in the municipal separate storm sewer system; and
- (3) Regulating non-storm water discharges to the municipal separate storm sewer system.

The intent of this chapter is to protect and enhance the quality of watercourses, water bodies, and wetlands within the City in a manner consistent with the Federal Clean Water Act, the California Porter-Cologne Water Quality Control Act and the Municipal NPDES Permit. This chapter is also intended to provide the City with the legal authority necessary to control discharges to and from those portions of the municipal separate storm sewer system over which it has jurisdiction as required by the Municipal NPDES Permit, and thereby fully and timely comply with the terms of the Municipal NPDES Permit.

This chapter also sets forth requirements for the construction and operation of certain commercial development, new development, and redevelopment and other projects, which are intended to ensure compliance with the stormwater mitigation measures prescribed in the current version of the Standard Urban Storm Water Mitigation Plan (SUSMP) approved by the Regional Water Quality Control Board-Los Angeles Region, and on file in the office of the City Clerk of this City. This chapter authorizes the authorized enforcement officer to define and adopt applicable Best Management Practices (BMP) and other stormwater pollution control measures.



5.8.3 EXISTING ENVIRONMENTAL SETTING

SURFACE WATERS

The Coastal Plain of Los Angeles County is drained primarily by the Los Angeles River and the Rio- Hondo-San Gabriel River systems. Additionally, the Coyote Creek located adjacent to the City's eastern boundary is part of the minor stream systems of this Coastal Plain. Coyote Creek joins the San Gabriel River approximately 2.1 miles southwest of the City, and ultimately discharges into the Pacific Ocean, just north of Seal Beach. Existing storm drain facilities in the area include the San Gabriel River, Coyote Creek, and the Artesia-Norwalk storm drain.

Floodplain Mapping

Artesia has been designated on the Flood Insurance Rate Map (FIRM), as being in Zone X, which is a Non-Special Flood Hazard Area.¹ As previously noted, Zone X includes areas:

- Outside the one percent (1%) annual flood risk floodplain;
- Of one percent annual shallow flooding risk where average depths are less than 1 foot;
- Of one percent annual stream flooding risk where the contributing drainage area is less than 1.0 square mile; and
- Protected by levees from the one percent annual flood risk.

These areas are not in any immediate danger from flooding caused by overflowing rivers or hard rains. However, it is noted that structures within a Non-Special Flood Hazard Areas are still at risk. Because the City is within Zone X, insurance purchase is not required. Notwithstanding, the City participates in the NFIP.

GROUNDWATER

The City of Artesia receives its potable water service from the Golden State Water Company (GSWC), which owns and operates the Artesia System. The Artesia System serves most residents in the Cities of Artesia and Hawaiian Gardens, and portions of the Cities of Lakewood and Long Beach. According to the 2005 Urban Water Management Plan – Artesia, GSWC obtains its water supply for the Artesia System from local groundwater, recycled water, and imported water. Groundwater within the Artesia System is supplied by six active wells in the Central Basin of the Coastal Plain of Los Angeles. The Central Water Basin is bounded on the north by the La Brea uplift, on the east by the Elysian, Repetto, Merced and Puente Hills, on the southeast by the Orange County Ground Water Basin, and on the west by the Newport-Inglewood Fault Zone.

¹ Federal Emergency Management Agency, Flood Insurance Rate Map Number 06037C1839F (Panel 1839) and Map Number 06037C1980F (Panel 1980), <http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1>, Accessed May 11, 2010.



The aquifer boundaries have been defined in the Recent Alluvium, Lakewood, and San Pedro Formations. The Recent Alluvium covers most of the Central Water Basin and attains a probable depth of 200 feet near the City of Bellflower. The Central Basin Pressure Area contains the Semiperched Aquifer, the Bellflower Aquiclude, and the Gaspar Aquifer.

The Central Basin Pressure Area underlies the City with Recent Alluvium covering most of this basin, reaching a maximum coverage depth of 200 feet. Groundwater flows generally in a southwesterly direction.

Groundwater recharge results from percolation of precipitation, stream flow, return flow (irrigation), spreading activity at recharge grounds, and injection of imported water into the Alamitos Barrier Project (seawater intrusion barrier). Natural recharge occurs in the Central Basin's Forebay areas due to prevalent silty permeable soils and suitable hydrological conditions. The total projected storage capacity for the Central Basin is 13.8 million AFY.

The Artesia System draws groundwater, as a part of the Central and West Basin Water Replenishment District. The Central Basin's adjudication limit for groundwater extraction across the entire basin is 217,367 AFY. The Central Basin Judgment limits the amount of groundwater each party can extract annually (i.e., the Allowed Pumping Allocation, or APA). GSWC's APA of 16,439 AFY is shared between all of the systems that extract groundwater from the Central Basin.

The Central Basin's six active wells have a current total active capacity of 5,570 AF/Y. Between 2000 and 2004, the actual water production from these active wells averaged 4,874 AF/Y. Groundwater accounts for the majority (approximately 67 percent) of the Artesia System's available water supply, as of 2005.

STORMWATER QUALITY

Stormwater quality is a significant concern in Southern California. This section discusses typical pollutants found in stormwater runoff and discusses the types of contaminants that may be found in existing stormwater runoff.

Nonpoint Source Pollutants

A net effect of urbanization can be to increase pollutant export over naturally occurring conditions. The impact of the higher export can be on the adjacent streams and also on the downstream receiving waters. However, an important consideration in evaluating a project's stormwater quality is to assess if it impairs the beneficial use to the receiving waters. Receiving waters can assimilate a limited quantity of various constituent elements, however, there are thresholds beyond which the measured amount becomes a pollutant and results in an undesirable impact. The backgrounds of these standard water quality categories provide an understanding of typical urbanization impacts. Nonpoint source pollutants have been characterized by the following major categories in order to assist in determining the pertinent data and its use.



Sediment. Sediment is made up of tiny soil particles that are washed or blown into surface waters. It is the major pollutant by volume in surface water. Suspended soil particles can cause the water to look cloudy or turbid. The fine sediment particles also act as a vehicle to transport other pollutants including nutrients, trace metals and hydrocarbons. Construction sites are the largest source of sediment for urban areas under development. Another major source of sediment is streambank erosion, which may be accelerated by increases in peak rates and volumes of runoff due to urbanization.

Nutrients. Nutrients are a major concern for surface water quality. In particular, phosphorous and nitrogen can cause algal blooms and excessive vegetative growth. Of the two, phosphorus is usually the limiting nutrient that controls the growth of algae in lakes. The orthophosphorous form of phosphorus is readily available for plant growth. The ammonium form of nitrogen can also have severe effects on surface water quality. The ammonium is converted to nitrate and nitrite forms of nitrogen in a process called nitrification. This process consumes large amounts of oxygen, which can impair the dissolved oxygen levels in water. The nitrate form of nitrogen is very soluble and is found naturally at low levels in water. When nitrogen fertilizer is applied to lawns or other areas in excess of plant needs, nitrates can leach below the root zone, eventually reaching ground water. Orthophosphate from auto emissions also contributes phosphorus in areas with heavy automobile traffic. As a general rule of thumb, nutrient export is greatest from development sites with the most impervious areas. Other problems resulting from excess nutrients are: 1) surface algal scums; 2) water discolorations; 3) odors; 4) toxic releases; and 5) overgrowth of plants. Common measures for nutrients are total nitrogen, organic nitrogen, total Kjeldahl nitrogen (TKN), nitrate, ammonia, total phosphate and total organic carbon (TOC).

Trace Metals. Trace metals are primarily a concern because of their toxic effects on aquatic life and their potential to contaminate drinking water supplies. The most common trace metals found in urban runoff are lead, zinc and copper. Fallout from automobile emissions is also a major source of lead in urban areas. A large fraction of the trace metals in urban runoff are attached to sediment and this effectively reduces the level, which is immediately available for biological uptake and subsequent bioaccumulation. Metals associated with the sediment settle out rapidly and accumulate in the soils. Also, urban runoff events typically occur over a shorter duration, which reduces the amount of exposure, which could be toxic to the aquatic environment. The toxicity of trace metals in runoff varies with the hardness of the receiving water. As total hardness of the water increases, the threshold concentration levels for adverse effects increases.

Oxygen-Demanding Substances. Aquatic life is dependent on the dissolved oxygen (DO) in the water and when organic matter is consumed by microorganisms then DO is consumed in the process. A rainfall event can deposit large quantities of oxygen demanding substance in lakes and streams. The biochemical oxygen demand of typical urban runoff is on the same order of magnitude as the effluent from an effective secondary wastewater treatment plant. A problem from low dissolved oxygen results when the rate of oxygen-demanding material exceeds the rate of replenishment. Oxygen demand is estimated by direct measure of DO and indirect measures such as biochemical oxygen demand (BOD), chemical oxygen demand (COD), oils and greases, and total organic carbon (TOC).



Bacteria. Bacteria levels in undiluted urban runoff exceed public health standards for water contact recreation almost without exception. Studies have found that total coliform counts exceeded Environmental Protection Agency (EPA) water quality criteria at almost every site and almost every time it rained. The coliform bacteria that are detected may not be a health risk in themselves, but are often associated with human pathogens.

Oil and Grease. Oil and grease contain a wide variety of hydrocarbons some of which could be toxic to aquatic life in low concentrations. These materials initially float on water and create the familiar rainbow-colored film. Hydrocarbons have a strong affinity for sediment and quickly become absorbed to it. The major source of hydrocarbons in urban runoff is through leakage of crankcase oil and other lubricating agents from automobiles. Hydrocarbon levels are highest in the runoff from parking lots, roads and service stations. Residential land uses generate less hydrocarbons export, although illegal disposal of waste oil into stormwaters can be a local problem.

Other Toxic Chemicals. Priority pollutants are generally related to hazardous wastes or toxic chemicals and can be sometimes detected in stormwater. Priority pollutant scans have been conducted in previous studies of urban runoff, which evaluated the presence of over 120 toxic chemicals and compounds. The scans rarely revealed toxins that exceeded the current safety criteria. The urban runoff scans were primarily conducted in suburban areas not expected to have many sources of toxic pollutants (with the possible exception of illegally disposed or applied household hazardous wastes). Measures of priority pollutants in stormwater include: 1) phthalate (plasticizer compound); 2) phenols and creosols (wood preservatives); 3) pesticides and herbicides; 4) oils and greases; and 5) metals.

Physical Characteristics of Surface Water Quality

Standard parameters, which assess the quality of stormwater, provide a method of measuring impairment. The backgrounds of these typical characteristics assist in understanding water quality requirements. The quantity of a material in the environment and its characteristics determine the degree of availability as a pollutant in surface runoff. In an urban environment, the quantity of certain pollutants in the environment is a function of the intensity of the land use. For instance, a high density of automobile traffic makes a number of potential pollutants (such as lead and hydrocarbons) more available. The availability of a material, such as a fertilizer, is a function of the quantity and the manner in which it is applied. Applying fertilizer in quantities that exceed plant needs leaves the excess nutrients available for loss to surface or groundwater.

The physical properties and chemical constituents of water traditionally have served as the primary means for monitoring and evaluating water quality. Evaluating the condition of water through a water quality standard refers to its physical, chemical, or biological characteristics. Water quality parameters for stormwater comprise a long list and are classified in many ways. In many cases, the concentration of an urban pollutant, rather than the annual load of that pollutant, is needed to assess a water quality problem. Some of the physical, chemical or biological characteristics that evaluate the quality of the surface runoff are outlined below.



Dissolved Oxygen. Dissolved oxygen in the water has a pronounced effect on the aquatic organisms and the chemical reactions that occur. It is one of the most important biological water quality characteristics in the aquatic environment. The dissolved oxygen concentration of a water body is determined by the solubility of oxygen, which is inversely related to water temperature, pressure and biological activity. Dissolved oxygen is a transient property that can fluctuate rapidly in time and space. Dissolved oxygen represents the status of the water system at a particular point and time of sampling. The decomposition of organic debris in water is a slow process and the resulting changes in oxygen status also respond slowly. The oxygen demand is an indication of the pollutant load and includes measurements of biochemical oxygen demand or chemical oxygen demand.

Biochemical Oxygen Demand (BOD). The biochemical oxygen demand (BOD) is an index of the oxygen-demanding properties of the biodegradable material in the water. Samples are taken from the field and incubated in the laboratory at 20°C, after which the residual dissolved oxygen is measured. The BOD value commonly referenced is the standard five-day values. These values are useful in assessing stream pollution loads and for comparison purposes.

Chemical Oxygen Demand. The chemical oxygen demand (COD) is a measure of the pollutant loading in terms of complete chemical oxidation using strong oxidizing agents. It can be determined quickly because it does not rely on bacteriological actions as with BOD. COD does not necessarily provide a good index of oxygen demanding properties in natural waters.

Total Dissolved Solids (TDS). TDS concentration is determined by evaporation of a filtered sample to obtain residue whose weight is divided by the sample volume. The TDS of natural waters varies widely. There are several reasons why TDS is an important indicator of water quality. Dissolved solids affect the ionic bonding strength related to other pollutants such as metals in the water. TDS are also a major determinant of aquatic habitat. TDS affects saturation concentration of dissolved oxygen and influences the ability of a water body to assimilate wastes. Eutrophication rates depend on total dissolved solids.

pH. The pH of water is the negative log, base 10, of the hydrogen ion (H⁺) activity. A pH of seven is neutral; a pH greater than seven indicates alkaline water; a pH less than seven represents acidic water. In natural water, carbon dioxide reactions are some of the most important in establishing pH. The pH at any one time is an indication of the balance of chemical equilibrium in water and affects the availability of certain chemicals or nutrients in water for uptake by plants. The pH of water directly affects fish and other aquatic life and generally toxic limits are pH values less than 4.8 and greater than 9.2.

Alkalinity. Alkalinity is the opposite of acidity, representing the capacity of water to neutralize acid. Alkalinity is also linked to pH and is caused by the presence of carbonate, bicarbonate and hydroxide, which are formed when carbon dioxide is dissolved. A high alkalinity is associated with a high pH and excessive solids. Most streams have alkalinities less than 200 mg/l and ranges of alkalinity of 100-200mg/l seem to support well-diversified aquatic life.

Specific Conductance. The specific conductivity of water, or its ability to conduct an electric current, is related to the total dissolved ionic solids. Long-term monitoring of a project's waters can develop a relationship between specific conductivity and TDS. Its measurement is quick and



inexpensive and can be used to approximate TDS. Specific conductivities in excess of 2000 $\mu\text{mhos/cm}$ indicate a TDS level too high for most freshwater fish.

Turbidity. The clarity of water is an important indicator of water quality that relates to the alkalinity of photosynthetic light to penetrate. Turbidity is an indicator of the property of water that causes light to become scattered or absorbed. Turbidity is caused by suspended clays and other organic particles. It can be used as an indicator of certain water quality constituents such as predicting the sediment concentrations.

Nitrogen (N). Sources of nitrogen in stormwater are from the additions of organic matter to water bodies or chemical additions. Ammonia and nitrate are important nutrients for the growth of algae and other plants. Excessive nitrogen can lead to eutrophication since nitrification consumes dissolved oxygen in the water. Nitrogen occurs in many forms. Organic Nitrogen breaks down into ammonia, which eventually becomes oxidized to nitrate-nitrogen, a form available for plants. High concentrations of nitrate-nitrogen (N/N) in water can stimulate growth of algae and other aquatic plants, but if phosphorus (P) is present, only about 0.30 mg/l of nitrate-nitrogen is needed for algal blooms. Some fish life can be affected when nitrate-nitrogen exceeds 4.2 mg/l. There are a number of ways to measure the various forms of aquatic nitrogen. Typical measurements of nitrogen include Kjeldahl nitrogen (organic nitrogen plus ammonia); ammonia; nitrite plus nitrate; nitrite; and nitrogen in plants. The principal water quality criteria for nitrogen focus on nitrate and ammonia.

Phosphorus (P). Phosphorus is an important component of organic matter. In many water bodies, phosphorus is the limiting nutrient that prevents additional biological activity from occurring. The origin of this constituent in urban stormwater discharge is generally from fertilizers and other industrial products. Orthophosphate is soluble and is considered to be the only biologically available form of phosphorus. Since phosphorus strongly associates with solid particles and is a significant part of organic material, sediments influence concentration in water and are an important component of the phosphorus cycle in streams. The primary methods of measurement include detecting orthophosphate and total phosphorus.

Existing Stormwater Quality

The City lacks any measured data on stormwater runoff quality. In the absence of site-specific data, expected stormwater quality can be qualitatively discussed by relating typical pollutants to specific land uses. Currently, the City contains residential dwellings and commercial buildings along with their associated parking and storage/sales lots. Approximately 99 percent of the City is built-out. Runoff from these existing uses flows to the existing storm drain facilities (i.e., San Gabriel River, Coyote Creek, and Artesia-Norwalk Storm Drain) via local drainage areas, catch basins, and other storm drain facilities. The expected existing pollutants from the developed areas and the City's tributary areas are oil and grease from automobile use. Other pollutants associated with residential and commercial development include trash, nutrients, bacteria, oil and grease, and household hazardous wastes. Vacant lots could add suspended solids in the stormwater runoff. Currently, the City does not contain any structural Best Management Practices (BMP), which would potentially decrease the amount of pollutants in stormwater runoff.



POTABLE WATER

The GSWC provides potable water to the City of Artesia. GSWC's Central Basin East Customer Service Area serves approximately 20,000 customers in portions of Artesia, Downey, Hawaiian Gardens, La Mirada, Lakewood, Long Beach, Norwalk, Santa Fe Springs, and adjacent county territory. The GSWC provides water to the City via the Artesia System. GSWC currently obtains its water supply for the Artesia System from local groundwater, among other sources; refer to [Section 5.13.1, *Water Supply*](#).

Water delivered to customers in the Artesia System is a blend of ground water pumped from the Central Ground Water Basin and imported water from the Colorado River Aqueduct and the State Water Project. Water supplies are delivered through a distribution system comprised of storage facilities, pumps, pipes, valves, meters, and other components. This distribution system is maintained through flushing programs, hydrant and valve maintenance, and infrastructure replacements as needed.

GSWC performs water quality tests to determine if the water supply in the Artesia System meets Federal and State standards for allowable Maximum Contaminant Levels (MCL). GSWC monitors its water sources, treatment processes, and distribution system for all constituents mandated by the United States Environmental Protection Agency (U.S. EPA) and the California Department of Health Services (CDHS). The frequency of required testing is determined by the State and varies for surface water and ground water. The water supply is monitored on a schedule approved by the CDHS, and any activity that could affect this supply is closely analyzed. The types and concentrations of contaminants found in water supply sources determine the treatment necessary to produce safe drinking water and to comply with Federal and State standards. Compliance is based on the average level of concentration being below the MCL.

DAM INUNDATION

A "dam" is an artificial barrier that has the ability to impound water, wastewater, or any liquid-borne material for the purpose of storage or control of water. There are no dams located within the City of Artesia. The Whittier Narrows Dam is located approximately 16 miles north of Artesia, in the City of Montebello. Whittier Narrows Dam is a flood control and water conservation project constructed and operated by the U.S. Army Corps of Engineers, Los Angeles District. The Whittier Narrows are a natural gap in the hills that form the southern boundary of the San Gabriel Valley. The Rio Hondo and the San Gabriel River flow through this gap and are impounded by the reservoir, which has a capacity of 67,060 acre-feet.

According to FEMA, dams can fail for one or a combination of the following reasons:

- Overtopping caused by floods that exceed the capacity of the dam;
- Deliberate acts of sabotage;
- Structural failure of materials used in dam construction;
- Movement and/or failure of the foundation supporting the dam;
- Settlement and cracking of concrete or embankment dams;



- Piping and internal erosion of soil in embankment dams; and
- Inadequate maintenance and upkeep.

Dam failures can result in the worst flood events. Flooding, as a result of dam failure, could expose people and structures to significant loss, injury, or death.

5.8.4 SIGNIFICANCE THRESHOLDS AND CRITERIA

Appendix G of the *CEQA Guidelines* contains the *Initial Study Environmental Checklist Form* used during preparation of the Project Initial Study; refer to [Appendix 12.1, *Notice of Preparation*](#). The Checklist includes questions relating to hydrology and water quality, which have been utilized as thresholds of significance in this Section. Accordingly, a significant environmental impact would occur if the Project would:

- 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 lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern on 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;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise 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 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; and/or
- Inundation by seiche, tsunami, or mudflow.



Based on these significance thresholds and criteria, the Project’s effects have been categorized as either “effects found not to be significant” or “potentially significant impact.” Feasible mitigation measures, which could avoid or minimize potentially significant impacts, are identified. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a “significant unavoidable impact.”

5.8.5 PROJECT IMPACTS AND MITIGATION MEASURES

□ GENERAL PLAN UPDATE POLICIES

The following Policies and Policy Actions relevant to hydrology and water quality have been proposed in the General Plan Update:

COMMUNITY DEVELOPMENT AND DESIGN ELEMENT

Land Use

Community Policy LU 1.5: Promote future patterns of urban development and land use that reduce infrastructure construction costs and make better use of existing and planned public facilities.

Policy Action LU 1.5.1: Encourage infill development that provides community amenities and uses that serve priority community needs.

Community Facilities and Infrastructure

Community Policy CFI 1.1: Maintain facilities and infrastructure to serve diverse community needs

Policy Action CFI 1.1.1: Provide storm drainage in accordance with best management practices and all adopted plans. Assess the system’s ability to accommodate current and future users and include all necessary improvements in development plans.

Community Policy CFI 1.2: Promote equitable distribution of community facilities and infrastructure

Policy Action CFI 1.2.1: Conduct a community needs assessment to determine where service gaps exist in community facilities and where particular types of programs could best meet neighborhood needs.

Policy Action CFI 1.2.3: Identify and improve areas experiencing localized storm drainage problems for storm drain improvements.

Community Policy CFI 1.3: Require new development to provide proportionate facilities and infrastructure improvements as the new development occurs.



Policy Action CFI 1.3.1: Coordinate development with the Capital Improvement Plan (CIP) to ensure completion of high-priority facility and infrastructure elements.

Community Policy CFI 2.1: Employ ongoing maintenance and upgrades to protect the City's long-term investment in community facilities.

Policy Action CFI 2.1.1: Continue to inspect, maintain and enhance City facilities relative to their water use.

Policy Action CFI 2.1.2: Continue to maintain, improve, and replace aging wastewater collection facilities and storm drain systems to ensure the provision of these services to all areas of the community.

Policy Action CFI 2.1.3: Update the City's Water Master Plan, as necessary.

Policy Action CFI 2.1.5: Amend as necessary and adopt a Seven-year Capital Improvement Program.

Community Policy CFI 3.1: Promote green and sustainable practices and approaches in planning, design, construction, renovation and maintenance of public facilities.

Policy Action CFI 3.1.1: Continue to sponsor and provide water conservation and education programs.

Policy Action CFI 3.1.2: Examine and utilize the use of alternative water supplies, such as grey water and reclaimed water, where appropriate and feasible.

Policy Action CFI 3.1.4: Continue to participate in the National Pollutant Discharge Elimination System (NPDES) permit program.

Policy Action CFI 3.1.5: Review the use of natural features such as bioswales, wildlife ponds, and wetlands for flood control and water quality treatment in conjunction with new development or redevelopment projects.

Policy Action CFI 3.1.6: Provide public education information and outreach materials regarding proper materials handling practices to assist residents and businesses in complying with surface water quality regulations and to increase awareness of potential impacts to the environment resulting from improper containment or disposal practices.

Policy Action CFI 3.1.7: Review and revise planning and building codes to provide for new technologies (i.e. low flow fixtures, low flow toilets, drought tolerant landscaping, etc.).



COMMUNITY RESOURCES AND WELLNESS ELEMENT

Community Safety

Community Policy SAF 3.1: Reduce risks associated with flooding through enforcement of regulations.

Policy Action SAF 3.1.1: Continue to require compliance with floodplain management requirements in the Municipal Code and update requirements as necessary.

Community Policy SAF 7.1: Develop a Citywide Disaster Preparedness Plan

Policy Action SAF 7.1.1: Ensure that adequately trained staff is available to provide essential emergency public services.

Policy Action SAF 7.1.2: Work cooperatively with the Public Safety Commission, community organizations, adjacent jurisdictions and regional agencies to prepare Artesia for emergencies.

Policy Action SAF 7.1.3: Coordinate with regional, State and Federal agencies to prepare for and respond to potential terrorism threats.

Community Policy SAF 7.2: Provide community members with information and education on disaster preparedness.

Policy Action SAF 7.2.1: Promote public education and awareness regarding individual fire prevention and safety, earthquake safety, and other emergency preparedness topics through information resources, programs and seminars in conjunction with the County of Los Angeles and other partners.

SUSTAINABILITY ELEMENT

Urban Nature

Policy Action SUS 4.1.2: Encourage use of native and drought-tolerant species of street trees and landscaping whenever possible.

Environmental and Public Health

Community Policy SUS 6.2: Protect and enhance environmental and public health by reducing or eliminating the use of hazardous and toxic materials; minimizing pollutants entering the air, soil, and water; and lessening the risks which environmental problems pose to human health and prosperity.

Policy Action SUS 6.2.3: Develop protocol to ensure that no one geographic or socioeconomic group in the City is being unfairly affected by environmental pollution.



Policy Action SUS 6.2.5: Investigate the feasibility of requiring parking lots to incorporate landscaping plans with greenery that holds and filters stormwater runoff while also reducing the heat island effect and creating a comfortable and safe pedestrian environment.

Water

Community Policy SUS 8.1: Maximize water efficiency and the use of alternative sources of water in City operations.

Policy Action SUS 8.1.1: Prioritize the monitoring, enforcement, and, as necessary, improvement of the Water Conservation Ordinance to reduce City-wide water consumption.

Policy Action SUS 8.1.2: Use an understanding of local water consumption to help create goals, prioritize conservation actions, and gauge progress.

Policy Action SUS 8.1.3: Promote water conservation within municipal buildings and operations, including fixture retrofits and diligent leak repairs.

Policy Action SUS 8.1.4: Promote the use of drought-tolerant plants and high-efficiency irrigation systems in landscaping, through implementation of the Water Efficient Landscaping Ordinance and public education.

Community Policy SUS 8.2: Implement outreach and education programs that promote best practices in water conservation.

Policy Action SUS 8.2.1: Promote community water conservation through outreach and consider a hotline for reporting wasteful irrigation.

Policy Action SUS 8.2.2: Promote public awareness of water use issues and support for wise water management.

Community Policy SUS 8.3: Protect the watershed by achieving mandates imposed by regulations.

Policy Action SUS 8.3.1: Prioritize enforcement of NPDES permit guidelines, conduct inspections of businesses and construction projects, and consider providing education and guidance to residents and businesses on proper stormwater management.

Policy Action SUS 8.4.1: Encourage water conservation and the use of alternative water sources (i.e., graywater, recycled water, etc.) for non-potable uses, such as irrigation, cooling towers and toilet flushing.



□ EFFECTS FOUND NOT TO BE SIGNIFICANT

In accordance with Section 15128, *Effects Not Found To Be Significant*, of the *CEQA Guidelines*, the following briefly discusses the reasons that various possible significant effects of the Project were determined not to be significant and were therefore not discussed in detail.

Threshold: *Would the Project 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?*

Threshold: *Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?*

Threshold: *Would the Project create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

The City of Artesia is 99 percent built and has an existing stormwater infrastructure. There are no naturally occurring permanent surface water features within the City of Artesia. Stormwater drainage in the City is provided by a network of regional drainage channels and local drainage facilities. Surface water is deposited into regional channels, which are owned and maintained by Los Angeles County.

Development under the proposed General Plan Update would result in localized alterations to the existing drainage patterns of the development sites. Drainage patterns could change slightly due to project-related grading and increases in the amount of impermeable surfaces on the respective development sites from structures (i.e., residential and commercial uses) and other improvements (i.e., parking lots, driveways, walkways, etc.). No significant changes in tributary area are anticipated; therefore, no significant changes in flowrates would occur. All future development would be required to incorporate adequate drainage that would transport runoff to local catch basins and nearby storm channels. The proposed General Plan Update would not substantially alter existing drainage patterns within the City through the alteration of the course of a stream or river.

The existing storm drain facilities in the area are the San Gabriel River, Coyote Creek, and the Artesia-Norwalk Storm Drain. Facilities providing drainage in the community appear to be adequate. No new drainage systems or alterations to the existing drainage systems are planned for the City. Additionally, the Project would not create runoff water, which would exceed the capacity of the City's existing stormwater drainage system. All future development would be subject to compliance with the General Plan Update Community Facilities and Infrastructure Element and Community Safety Element Policies and Policy Actions outlined above, which would further protect community members from potential harm caused by drainage and flooding.



Threshold: *Would the Project otherwise substantially degrade water quality?*

Given the nature of the proposed development (i.e., residential and commercial uses), implementation of the proposed General Plan Update would not otherwise substantially degrade water quality; refer also to the *Water Quality Standards* discussion below.

Threshold: *Would the Project place within a 100-year flood hazard area structures, which would impede or redirect flood flows?*

Threshold: *Would the Project 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?*

As noted above, the incorporated limit of Artesia is not located within a Special Flood Hazard Area; the City is within a designated Zone X. Therefore, implementation of the proposed General Plan Update would not place structures or housing within a 100-year flood hazard area and a less than significant impact would occur in this regard.

Threshold: *Would the Project be subject to inundation by seiche, tsunami, or mudflow?*

A seiche is a standing wave in an enclosed or partially enclosed body of water. Seiches and seiche-related phenomena have been observed on lakes, reservoirs, swimming pools, bays, and seas. The key requirement for formation of a seiche is that the body of water be at least partially bounded, allowing the formation of the standing wave. The City of Artesia is not subject to seiche, given no significant water bodies exist within the City limits.

A tsunami is a great sea wave, commonly referred to as a tidal wave, produced by a significant undersea disturbance such as tectonic displacement of a sea floor associated with large, shallow earthquakes. The City of Artesia is not subject to tsunamis, since the City is located inland. Moreover, this is verified by Tsunami Inundation Map Los Alamitos Quadrangle/Seal Beach Quadrangle, which indicates the City of Artesia is not located within a mapped Tsunami Inundation Zone.²

Mudflows result from the downslope movement of soil and/or rock under the influence of gravity. Due to the relatively flat topography of the City, no mudflow impacts would occur.

² State of California Department of Conservation, http://www.consrv.ca.gov/CGS/GEOLOGIC_HAZARDS/TSUNAMI/INUNDATION_MAPS/Pages/Statewide_Maps.aspx, Accessed May 10, 2010.



❑ POTENTIALLY SIGNIFICANT IMPACTS

WATER QUALITY – CONSTRUCTION

- **GRADING, EXCAVATION, AND CONSTRUCTION ACTIVITIES ASSOCIATED WITH FUTURE DEVELOPMENT COULD IMPACT WATER QUALITY DUE TO SHEET EROSION RESULTING FROM EXPOSED SOILS AND SUBSEQUENT DEPOSITION OF PARTICLES AND POLLUTANTS IN DRAINAGE AREAS.**

Impact Analysis: Construction controls are separated from other water quality management, because the measures are temporary and specific to the type of construction. Construction of future development projects has the potential to produce typical pollutants such as nutrients, heavy metals, pesticides and herbicides, toxic chemicals related to construction and cleaning, waste materials including wash water, paints, wood, paper, concrete, food containers and sanitary wastes, fuel, and lubricants.

All future development would be subject to compliance with AMC Title 6 Chapter 7, *Storm Water Management and Discharge Control*, and NPDES requirements. Construction sites with 1.0 acre or greater of soil disturbance or less than 1.0 acre, but part of a greater common plan of development, would be required to apply for coverage for discharges under the General Construction Permit. Prior to issuance of any Grading or Building Permit, and as part of the future development's compliance with the NPDES requirements, a Notice of Intent would be prepared and submitted to the Los Angeles RWQCB providing notification and intent to comply with the State of California General Construction Permit. Also, a Stormwater Pollution Prevention Plan (SWPPP) would be submitted for approval to the Director of Public Works and the City Engineer for water quality construction activities onsite. A copy of the SWPPP would be made available and implemented at each respective construction site at all times. The SWPPP is required to outline the source control and/or treatment control BMPs, in order to avoid or mitigate runoff pollutants at the construction site to the "maximum extent practicable." Compliance with AMC Title 6 Chapter 7, *Storm Water Management and Discharge Control*, and NPDES requirements would reduce construction-related impacts to water quality to a less than significant level. Compliance with the General Plan Update Policy Action CFI 3.1.4, which requires continued participation in the NPDES program, would further minimize potential construction-related water quality impacts.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant.

WATER QUALITY – LONG-TERM

- **IMPLEMENTATION OF THE PROPOSED GENERAL PLAN UPDATE COULD RESULT IN LONG-TERM IMPACTS TO THE QUALITY OF STORMWATER AND URBAN RUNOFF, SUBSEQUENTLY IMPACTING WATER QUALITY.**



Impact Analysis: Development associated with implementation of the proposed General Plan Update would have long-term effects on runoff once the development is complete. Residential and other urban development can affect water quality in three ways:

- Impervious surfaces associated with development increase the rate and volume of stormwater runoff, therefore increasing downstream erosion potential;
- Urban activities generate dry-weather or “nuisance” flows, which may contain pollutants and/or may change the ephemeral nature of streams and the degradation of certain habitats; and
- Impervious surfaces increase the concentration of pollutants during wet weather flows.

The potential for negative water quality effects is generally correlated to the density/intensity of development and the amount of impervious area associated with development. Detached residential development has the potential to generate sediments such as nutrients and organic substances (including fertilizers), pesticides (from landscape application), trash and debris (including household hazardous waste), oxygen demand, oil and grease (from driveways and roads) and bacteria and viruses. Attached residential developments share these potentialities as well as an increased potential for concentration of pollutants from the larger parking lots typically associated with multiple family development projects. These impacts would be considered potentially significant unless mitigated.

Future development in the City would increase impervious areas and overall levels of activity. As a result, impacts to stormwater quality would occur. Future development would increase pollutant loadings immediately off the respective development sites and would potentially violate water quality standards. The pollutants that would be expected with future development include pollutants typically found in stormwater runoff; refer to the *Existing Setting* Section. Without mitigation, future development would be expected to increase pollutant loadings, including hydrocarbons, fertilizers, pesticides, trash, and sediment.

All future development would be subject to compliance with AMC Title 6 Chapter 7, *Storm Water Management and Discharge Control*, and NPDES requirements. Prior to issuance of any Grading Permit, all future development would be required to prepare, to the satisfaction of the Director of Public Works and the City Engineer, a Water Quality Management Plan (WQMP), which includes Best Management Practices (BMPs), Structural Measures and Adaptive Management, under the guidelines in *Development Planning for Stormwater Management - A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP)* prepared by Los Angeles County Department of Public Works (2002) or the most current/updated version. The SUSMP conforms to the new NPDES permit requirement for Los Angeles County. Compliance with AMC Title 6 Chapter 7 and NPDES requirements would reduce post construction impacts to water quality to a less than significant level. Compliance with the General Plan Update Policies and Policy Actions outlines above would further minimize potential post construction-related water quality impacts.



Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant.

GROUNDWATER DEPLETION

■ DEVELOPMENT ASSOCIATED WITH IMPLEMENTATION OF THE PROPOSED GENERAL PLAN UPDATE COULD DEplete GROUNDWATER SUPPLIES.

Impact Analysis: As noted previously, GSWC currently obtains its water supply for the Artesia System from local groundwater, among other sources. Implementation of the proposed General Plan Update would result in increased demand for water resources. More specifically, the water demand at buildout of the proposed General Plan Update would be approximately 7,169 AFY; refer to Table 5.12-8, *General Plan Update Water Demand*. This represents an increase of approximately 778 over the City's existing water demand of approximately 6,391 AFY; refer to Table 5.12-4. The projected water supply for the Artesia System at build-out year 2030 is estimated to be approximately 7,469 AFY. Thus, the projected water supplies in 2030 would be sufficient to meet the water demand generated by the General Plan Update at buildout. Between groundwater, imported water, and recycled water, GSWC has concluded they would have access to water supplies necessary to serve the additional demands anticipated from the proposed General Plan Update. Further, the Central Basin's adjudication limit for groundwater extraction across the entire basin is 217,367 AFY. The Central Basin Judgment limits the amount of groundwater each party can extract annually (i.e., the Allowed Pumping Allocation, or APA). GSWC's APA of 16,439 AFY is shared between all of the systems that extract groundwater from the Central Basin. GSWC would continue to be subject to the groundwater extraction limitations imposed by the Central Basin Judgment. Therefore, development associated with implementation of the proposed General Plan Update would not substantially deplete groundwater supplies and a less than significant impact would occur in this regard.

It is the goal of the Sustainability Element that the City reduce potable water consumption per capita City-wide and protect the watershed from pollution. To this end, all future development projects within the City would be subject to compliance with General Plan Policies and Policy Actions outlined above, which involve water conservation measures. Additionally, any future development project meeting SB 610 criteria would require a water supply assessment. Similarly, any project involving a subdivision pursuant to SB 221 would require verification of sufficient water supply from the water supplier. Compliance with this existing regulatory framework and the specified General Plan Update Policies would further ensure that future development would not substantially deplete groundwater supplies.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant.



RISK INVOLVING FLOODING

- FUTURE DEVELOPMENT RESULTING FROM IMPLEMENTATION OF THE PROPOSED GENERAL PLAN UPDATE COULD EXPOSE PEOPLE OR STRUCTURES TO A SIGNIFICANT RISK INVOLVING FLOODING, AS A RESULT OF THE FAILURE OF A DAM OR LEVEE.

Impact Analysis: The City is subject to inundation if the Whittier Narrows Dam fails. Although, the failure of this dam is considered unlikely, failure could cause a major disaster in the City. Should the Whittier Dam fail, the entire City would be in the inundation path.

The General Plan Update would increase the City's existing population by approximately 7.3 percent (1,253 persons) over existing conditions. Thus, when compared to existing conditions, a greater number of persons and structures would be exposed to potential risk involving flooding. However, the General Plan Update proposes Policies and Policy Actions outlined above would lessen potential risks involving flooding. Furthermore, flooding risks for Artesia are addressed in the City's Emergency Operations Plan; refer to Section 5.9, *Hazards and Hazardous Materials*.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant.

5.8.6 CUMULATIVE IMPACTS

- FUTURE DEVELOPMENT RESULTING FROM IMPLEMENTATION OF THE PROPOSED GENERAL PLAN UPDATE COULD RESULT IN CUMULATIVE IMPACTS RELATED TO HYDROLOGY AND WATER QUALITY.

Impact Analysis: For this topic, the cumulative impacts are analyzed in terms of impacts within the City of Artesia, along with impacts to the regional drainage facilities under the jurisdiction of the Los Angeles RWQCB.

The proposed General Plan Update would not result in significant changes to existing land uses, thus, would not significantly impact drainage courses and hydrologic flows throughout the City. Additionally, because the City is approximately 99 percent built-out, development proposed in the General Plan Update would not significantly increase impermeable surfaces citywide, which would not substantially increase regional drainage flows.

Future development projects in the Los Angeles County or in the City of Artesia would be required to mitigate specific hydrologic impacts on a project-by-project basis. Additionally, the City's Municipal Code incorporates Federal and State regulations and guidelines pertaining to stormwater runoff to avoid or reduce regional water quality impacts. Impacts associated with future development in the City would be addressed at a site-specific level to ensure their



cumulative impact would be less than significant. Thus, implementation of the proposed General Plan Update would not result in cumulatively considerable hydrology or water quality impacts.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant.

5.8.7 SIGNIFICANT UNAVOIDABLE IMPACTS

Hydrology and water quality impacts associated with implementation of the proposed General Plan Update would be less than significant.

5.8.8 SOURCES CITED

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State of California Department of Conservation, http://www.consrv.ca.gov/CGS/GEOLOGIC_HAZARDS/TSUNAMI/INUNDATION_MAPS/Pages/Statewide_Maps.aspx, Accessed May 10, 2010.



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