

4.K HYDROLOGY AND WATER QUALITY

4.K.1 INTRODUCTION

This section addresses hydrology and water quality issues associated with proposed TOD Plan and Zoning for the Downtown Inglewood and Fairview Heights areas, and evaluates the potential for environmental impacts related to surface and groundwater quality, groundwater supplies, erosion, flood zones, levee and dam failure; and inundation due to seiche, tsunami, or mudflow.

Issues related to capacity and construction of construction of stormwater drainage facilities are addressed in Section 4.N, *Utilities, Service Systems, and Water Supply*.

DEFINITIONS

- **100-year flood** is a flood that has a 1 percent statistical chance of occurring in any given year. The 100-year flood can, however, occur in consecutive years or multiple times within a year.
- **100-year storm** is a storm that has a 1 percent statistical chance of occurring in any given year. The 100-year storm can, however, occur in consecutive years or multiple times within a year.
- **Aquifer** refers to a body of rock or sediment that is sufficiently porous and permeable to store, transmit, and yield significant or economic quantities of groundwater to wells and springs.
- **Area of Shallow Flooding** includes lands designated AO, AH or VO Zone on the FIRM. The base flood depths range from one to three feet; a clearly defined channel does not exist; the path of flooding is unpredictable and indeterminate; and velocity flow may be evident. Such flooding is characterized by ponding or sheet flow.
- **Area of Special Flood Hazard** includes lands in the floodplain within a community subject to a one percent or greater chance of flooding in any given 35.5.2year; sometimes referred to as the “Base Flood.” This area is designated as Zone A, AO, AH, A1-A30, AE, A99, VO, V1-30, VE, or V on the FIRM.
- **Base Flood** is flood having a one percent chance of being equaled or exceeded in any given year (also called the “100-year flood”).
- **Basin Plan** refers to a water quality control plan developed pursuant to CWC §13240. A master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the Region. The Basin Plan must include 1) a statement of beneficial water uses that the Water Board will protect; 2) the water quality objectives needed to protect the designated beneficial water uses; and 3) the strategies and time schedules for achieving the water quality objectives. Factors to be considered by a regional board in establishing water quality objectives shall include, but not necessarily be limited to, all of the following: (a) past, present, and probable future beneficial uses of water; (b) environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto; (c) water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area; (d) economic considerations; (e) the need for developing housing within the region; and (f) The need to develop and use recycled water.
- **Best Management Practices (BMPs)**, in relation to stormwater management, are control measures taken to mitigate changes to both quantity and quality of urban runoff caused

through changes to land use. BMPs are designed to reduce stormwater volume, peak flows, and/or nonpoint source pollution through evapotranspiration, infiltration, detention, and filtration or biological and chemical actions. Stormwater BMPs are often classified as “structural” (i.e., devices installed or constructed on a site) or “non-structural” (procedures, such as modified landscaping practices). The US EPA publishes lists of stormwater BMPs for use by local governments, builders, and property owners.

- **FEMA** refers to the Federal Emergency Management Agency.
- **Flood Insurance Rate Map (FIRM)** refers to the official map on which the Federal Insurance and Mitigation Administration has delineated both the Areas of Special Flood Hazards and the risk premium zones applicable to the community.
- **Flooded** refers to any condition in which the soil surface is temporarily covered with flowing water from any source, such as streams overflowing their banks, runoff from adjacent or surrounding slopes, inflow from high tides, or any combination of sources.
- **Frequency (inundation)** refers to the average frequency of flooding by surface water or soil saturation. It is usually expressed as the number of years (e.g. 50 years) the soil is inundated or saturated at least once during a year.
- **Groundwater** includes water that occurs beneath the land surface and fills the pore spaces of the alluvium, soil, or rock formation in which it is situated. It excludes soil moisture, which refers to water held by capillary action in the upper unsaturated zones of soil or rock.
- A **Groundwater Basin** is any basin identified in the CDWR’s California’s Groundwater: Bulletin No. 118 (September 1975, updated 2003), and any amendments to that bulletin, but does not include a basin in which the average well yield, excluding domestic wells that supply water to a single-unit dwelling, is less than 100 gallons per minute.
- **Groundwater Table** refers to the upper surface of the zone of saturation in an unconfined aquifer.
- **Hydromodification** refers to any activity that increases the velocity and volume (flow rate) - and often the timing - of runoff, such as development of impervious surfaces, vegetation removal, dredging/filling, or other alterations to natural land contours for the purposes of new development.
- **Inundation** is the condition in which water from any source temporarily or permanently covers a land surface.
- **Low Impact Development (LID)** is an approach to land development that uses various land planning and design practices and technologies to simultaneously conserve and protect natural resource systems and reduce infrastructure costs. LID is intended to provide for land development in a cost- effective manner that helps mitigate potential environmental impacts. Typically, emphasis is on employing natural and constructed features that reduce the rate of stormwater runoff, filter out pollutants, facilitate stormwater storage onsite, infiltrate stormwater into the ground to replenish groundwater supplies, or improve the quality of receiving groundwater and surface water.
- **Mudflow** refers to a landslide composed of saturated rock debris and soil with a consistency of wet cement.

- **National Flood Insurance Program** is the federal program that authorizes the sale of federally subsidized flood insurance in communities where such flood insurance is not available privately.
- **National Pollutant Discharge Elimination System (NPDES)** refers to the provision of the federal Clean Water Act that prohibits discharge of pollutants into waters of the United States unless a special permit is issued by the U.S. EPA, a state, or another delegated agency.
- **Nonpoint Source Pollution** refers to pollution that enters water from dispersed and uncontrolled sources, such as surface runoff, rather than through pipes. Nonpoint sources (e.g., landscape practices, on-site sewage disposal, and automobiles) may contribute pathogens, suspended solids, and toxicants. While individual sources may seem insignificant, the cumulative effects of nonpoint source pollution can be significant.
- **Non-Stormwater Discharge** includes any discharge that is not entirely composed of stormwater except those noted within an NPDES permit.
- **Seiche** is a surface wave created when a body of water is shaken, usually by earthquake activity.
- **Stormwater** refers to discharges generated by runoff from land and impervious areas, such as paved streets, parking lots, and building rooftops, during rainfall and snow events that often contain pollutants in quantities that could adversely affect water quality. Most stormwater discharges are considered point sources and require coverage by a NPDES permit.
- **Surface Water** refers to water present above the substrate or soil surface.
- **Tsunami** refers to the ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. Although discouraged by the scientific community, tsunamis are sometimes referred to as “tidal waves” due to their common appearance as that of an extraordinarily high, rapidly rising, and forceful tide.

4.K.2 APPLICABLE PLANS, POLICIES, AND REGULATIONS

Implementation of the proposed TOD Plan for the Downtown Inglewood and Fairview Heights planning areas is subject to a range of federal, state, regional, and local plans, policies, and regulations, which are described below.

FEDERAL PLANS, POLICIES, AND REGULATIONS

Clean Water Act

The Clean Water Act established the basic structure for regulating discharges of pollutants into “waters of the U.S.” The act specifies a variety of regulatory and non-regulatory tools to sharply reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. Key components of the Clean Water Act that are relevant to the proposed TOD Plan are:

- Sections 303 and 304, which provide for water quality standards, criteria, and guidelines. Section 303(d) requires the state to develop lists of water bodies that do not attain water quality

objectives (are impaired) after implementation of required levels of treatment by point-source dischargers (municipalities and industries). Section 303(d) also requires that the state develop a Total Maximum Daily Loads (TMDLs) for each of the listed pollutants. The TMDL is the amount of pollutant loading that the water body can receive and still be in compliance with water quality objectives. After implementation of the TMDL, it is anticipated that the contamination that led to the 303(d) listing would be remediated. Preparation and management of the Section 303(d) list is administered by the RWQCBs.

- Section 401 requires every applicant for a federal permit or license for any activity that may result in a discharge to a water body to obtain a water quality certification that the proposed activity would comply with applicable water quality standards.
- Section 402 regulates point- and nonpoint-source discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. In California, the State Water Resources Control Board (SWRCB) oversees the NPDES program, which is administered by the RWQCBs. The NPDES program provides for both general permits (those that cover a number of similar or related activities) and individual permits.

National Pollutant Discharge Elimination System

The NPDES permit program under the Clean Water Act controls water pollution by regulating point and nonpoint sources that discharge pollutants into “waters of the U.S.” California has an approved state NPDES program. The USEPA has delegated authority for NPDES permitting to the California State Water Resources Control Board (SWRCB), which has nine regional boards. The Los Angeles Regional Water Quality Control Board (LARWQCB or RWQCB) regulates water quality in the Los Angeles area, which includes the City of Inglewood. Under this system, municipal and industrial facilities are required to obtain a NPDES permit that specifies allowable limits, based on available wastewater treatment technologies, for pollutant levels in their effluent. Stormwater discharges are regulated somewhat differently than pollutant discharges. Discharge of stormwater runoff from construction areas of one acre or more requires either an individual permit issued by the RWQCB or coverage under the statewide Construction General Stormwater Permit for stormwater discharges (discussed below). Specific industries and public facilities, including wastewater treatment plants that have direct stormwater discharges to navigable waters, are also required to obtain either an individual permit or obtain coverage under the statewide General Industrial Stormwater Permit.

National Flood Insurance Program

The City of Inglewood is a participant in the National Flood Insurance Program (NFIP), which is administered by the Federal Emergency Management Agency (FEMA). Participants in the NFIP must satisfy certain mandated floodplain management criteria, including adopting an ordinance that is in compliance with minimum regulatory standards issued by FEMA and monitoring construction and building permits and the status of the City ordinance to ensure that all are in compliance with federal law (City, 2010).

Established in 1968 with the passage of the National Flood Insurance Act, the NFIP is a federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for state and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the federal government. If a community adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains, the federal government will make flood insurance available within the community as a financial protection against flood losses. This insurance is designed to provide an affordable insurance alternative to disaster assistance to reduce the escalating costs of repairing damage to buildings and their contents caused by floods. Communities are occasionally audited by the Department of Water Resources to ensure the proper implementation of FEMA floodplain management regulations.

However, the City of Inglewood does not include any areas designated as a Special Flood Hazard Area, which are subject to a one percent chance or greater chance of flooding in any one year (100-year flood zone). The City of Inglewood is designated a Non-Special Flood Hazard Area, and is considered by the NFIP to have a low to medium probability of flooding, and historically has experienced no flood events (City, 2010).

STATE PLANS, POLICIES, AND REGULATIONS

Porter-Cologne Act

The State Water Resources Control Board and the Regional Water Quality Control Board share the responsibility under the Porter-Cologne Act to formulate and adopt water policies and plans, and to adopt and implement measures to fulfill Clean Water Act requirements. In order to meet this requirement for the Los Angeles area, the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan) (discussed below) was prepared by the RWQCB to protect the water quality of the state according to the beneficial uses identified for each water body. Prior to authorizations of waste discharge by the RWQCB, the Porter-Cologne Act requires reports of waste discharges to be filed. The RWQCB then prescribes Waste Discharge Requirements, which serve as NPDES permits under a provision of the Porter-Cologne Act.

Anti-Degradation Policy

A key policy of California's water quality program is the State's Anti-Degradation Policy. This policy, formally known as the Statement of Policy with Respect to Maintaining High Quality Waters in California (SWRCB Resolution No. 68-16), restricts degradation of surface and ground waters. In particular, this policy protects water bodies where existing quality is higher than necessary for the protection of beneficial uses. Under the Anti-Degradation Policy, any actions that can adversely affect water quality in all surface and ground waters must (1) be consistent with maximum benefit to the people of the state; (2) not unreasonably affect present and anticipated beneficial use of the water; and

(3) not result in water quality less than that prescribed in water quality plans and policies, (i.e., will not result in exceedances of water quality objectives).¹

Construction General Permit

The State of California adopted a Statewide NPDES Permit for General Construction Activity (Construction General Permit) on September 2, 2009 (Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ). The last Construction General Permit amendment became effective on February 16, 2012. The Construction General Permit regulates construction site storm water management. Dischargers whose projects disturb one or more acres of soil, or whose projects disturb less than one acre, but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the general permit for discharges of storm water associated with construction activity. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

To obtain coverage under this permit, project operators must electronically file Permit Registration Documents, which include a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other compliance-related documents, including a risk-level assessment for construction sites, an active storm water effluent monitoring and reporting program during construction, rain event action plans, and numeric action levels (NALs) for pH and turbidity as well as requirements for qualified professionals to prepare and implement the plan. An appropriate permit fee must also be mailed to SWRCB.

The Construction General Permit requires the SWPPP to identify BMPs that will be implemented to reduce controlling potential chemical contaminants from impacting water quality. Types of BMPs include erosion control (e.g., preservation of vegetation), sediment control (e.g., fiber rolls), non-stormwater management (e.g., water conservation), and waste management. The SWPPP also includes descriptions of BMPs to reduce pollutants in storm water discharges after all construction phases have been completed at the site (post-construction BMPs).

Recycled Water General Permit for Landscape Irrigation

In July 2009, the SWRCB released General Waste Discharge Requirements for Landscaping Irrigation Uses of Municipal Recycled Water (Recycled Water General Permit), allowing municipal entities to distribute disinfected tertiary-treated recycled water to select customers for landscape irrigation (Order No. 2009-0006-DWQ). The Recycled Water General Permit is intended to further the state's Recycled Water Policy (California Code of Regulations [CCR] Title 22) and California Water Code Section 13552.5, both of which encourage recycled water for non-potable uses.

¹ SWRCB, 1968, Statement of Policy with Respect to Maintaining High Quality of Waters in California. Resolution No. 68-16.

Under the Recycled Water General Permit, recycled water is limited to recycled water produced by a public entity at a municipal wastewater treatment plant. The Recycled Water General Permit does not apply to water produced from the treatment of other non-municipal wastewaters (e.g., oil field production, food processing, stormwater, etc.) and other types of treatment facilities (e.g., industrial wastewater treatment plants). To obtain coverage under the Recycled Water General Permit, the producer/distributor of recycled water must submit a Notice of Intent (NOI) and Operations and Maintenance Plan to the SWRCB. The Operations and Maintenance Plan must contain a detailed operations plan for use areas, including procedures for implementation of regulations regarding recycled water use and maintenance of equipment and emergency backup systems to maintain compliance with the conditions of the Recycled Water General Permit. In addition, it must have an irrigation management plan specifying measures to ensure that recycled water is applied efficiently, at an agronomic rate, and using practices necessary to minimize application of salinity constituents to use areas. Characteristics of the soil, the recycled water, plant species being irrigated, climatic conditions, and other relevant conditions must be considered in this plan.

The Recycled Water General Permit notes that the use of recycled water may not be appropriate for all situations because of unique site-specific characteristics and conditions. In addition, because there are certain public health concerns associated with recycled water, the Recycled Water General Permit includes exposure control measures, including minimum setback distances, signage, method of application, and use restrictions and only allows use of water treated to CCR Title 22 tertiary treatment requirements. Other potential public health issues, such as cross-contamination of recycled water and potable water sources, control of recycled water salinity, and chlorination are regulated under the Recycled Water Policy and the Water Code. Landscape irrigation with recycled water would require coverage under this Recycled Water General Permit or an individual permit.

California Water Resources Control Board Low Impact Development Policy

The SWRCB adopted the Low Impact Development (LID) Policy which, at its core, promotes the idea of “sustainability” as a key parameter to be prioritized during the design and planning process for future development. The SWRCB has directed its staff to consider sustainability in all future policies, guidelines, and regulatory actions.

The intent of the LID policy is to benefit water supply, contribute to water quality protection, and manage stormwater. The RWQCBs are advancing LID in California in various ways, including provisions for LID requirements in renewed Phase I municipal stormwater NPDES permits.

REGIONAL PLANS, POLICIES, AND REGULATIONS

Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties

The Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties is designed to preserve and enhance water quality and protect the beneficial uses of all regional waters. Specifically, the Basin Plan designates beneficial uses for surface and ground waters, sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy, and describes implementation programs to protect all waters in

the region. Required construction permits that are issued to control pollution (i.e. waste-discharge requirements and NPDES permits) must implement the Basin Plan requirements (i.e. water quality standards), taking into consideration the beneficial uses to be protected.

Los Angeles County Municipal Separate Storm Sewer System Permit

The current Municipal Separate Storm Sewer System (MS4) Permit for Los Angeles County (Order No. R4-2012-0175) was adopted on November 8, 2012, became effective December 28, 2012, was amended by the State Water Board on June 16, 2015 (by Order WQ 2015-0075) and will expire on December 28, 2017. This permit includes: Los Angeles County Flood Control District, County of Los Angeles, and 84 incorporated cities within Los Angeles County watersheds excluding the City of Long Beach. The permit contains requirements to reduce the discharge of pollutants in stormwater runoff to the maximum extent practicable and provides achieve water quality standards. In addition, the MS4 Permit requires that runoff is addressed during the major phases of urban development (planning, construction, and operation) in order to reduce the discharge of pollutants from storm water to the maximum extent practicable, effectively prohibit non-storm water discharges and protect receiving waters.

The MS4 Permit also includes construction requirements for implementation of minimum construction site BMPs for erosion, sediment, non-storm water management and waste management on construction sites, which are listed in **Table 4.K-1**; and additional BMPs applicable to construction sites that disturb one-acre or more (as listed in **Table 4.K-2**).

**TABLE 4.K-1
MINIMUM BMPs FOR CONSTRUCTION SITES**

Erosion Controls	Scheduling Preservation of Existing Vegetation
Sediment Controls	Silt Fence Sandbag Barrier Stabilized Construction Site Entrance/Exit
Non-Storm Water Management	Water Conservation Practices Dewatering Operations
Waste Management	Material Delivery and Storage Stockpile Management Spill Prevention and Control Solid Waste Management Concrete Waste Management Sanitary/Septic Waste Management

Source: MS4 Order No. R4-2012-0175, 2015.

The permit also requires the design and implementation of specific post-construction controls to mitigate storm water pollution, prior to project completion, for all “new development” and “redevelopment” projects that meet certain criteria as specified in the permit. During operation of new

development or redevelopment, the permit prohibits non-storm water discharges from the development (with some conditional exceptions), and requires BMPs to eliminate discharges to the MEP. Storm water effluent must meet water-quality based effluent limitations (WQBELs), or water quality standards for discharge leaving the site, and must not cause or contribute to the exceedance of receiving water limitations (water quality standards for receiving waters). The permit requires each permittee to implement a Planning and Land Development Program for all new development, which requires permittees to:

- Lessen the water quality impacts of development by using smart growth practices such as compact development, directing development towards existing communities via infill or redevelopment, and safeguarding of environmentally sensitive areas.
- Minimize the adverse impacts from storm water runoff on the biological integrity of Natural Drainage Systems and the beneficial uses of water bodies in accordance with requirements under CEQA (Cal. Pub. Resources Code Section 21000 et seq.).

**TABLE 4.K-2
ADDITIONAL BMPs APPLICABLE TO CONSTRUCTION SITES DISTURBING ONE-ACRE OR MORE**

Erosion Controls	Hydraulic Mulch Hydroseeding Soil Binders Straw Mulch Geotextiles and Mats Wood Mulching
Sediment Controls	Fiber Rolls Gravel Bag Berm Street Sweeping or Vaccum Storm Drain Inlet Protection Scheduling Check Dam
Additional Controls	Wind Erosion Controls Stabilized Construction Entrance/Exit Stabilized Construction Roadway Entrance/ Exit Tire Wash
Non-Storm Water Management	Vehicle and Equipment Washing Vehicle and Equipment Fueling Vehicle and Equipment Maintenance
Waste Management	Material Delivery and Storage Spill Prevention and Control

Source: MS4 Order No. R4-2012-0175, 2015.

- Minimize the percentage of impervious surfaces on land developments by minimizing soil compaction during construction, designing projects to minimize the impervious area footprint,

and employing LID design principles to mimic predevelopment hydrology through infiltration, evapotranspiration and rainfall harvest and use.

- Minimize pollutant loadings from impervious surfaces such as roof tops, parking lots, and roadways through the use of properly designed, technically appropriate BMPs (including Source Control BMPs such as good housekeeping practices), LID Strategies, and Treatment Control BMPs.
- Properly select, design and maintain LID and Hydromodification Control BMPs to address pollutants that are likely to be generated, reduce changes to pre-development hydrology, assure long-term function, and avoid the breeding of vectors.
- Prioritize the selection of BMPs to remove storm water pollutants, reduce storm water runoff volume, and beneficially use storm water to support an integrated approach to protecting water quality and managing water resources in the following order of preference:
 - On-site infiltration, bioretention and/or rainfall harvest and use.
 - On-site biofiltration, off-site ground water replenishment, and/or off-site retrofit.

Los Angeles County Standard Urban Storm Water Mitigation Plan

The Los Angeles County Standard Urban Storm Water Mitigation Plan (SUSMP) was written for compliance with MS4 Permit requirements, and outlines the MS4 Permit BMPs (described in **Tables 4.K-1 and 4.K-2**, above) that are required to be incorporated into design plans for specific development and/or redevelopment projects, such as the following:

- Ten or more unit homes (includes single-family homes, multi-family homes, condominiums, and apartments);
- Automotive service facilities (SIC codes 5013, 5014, 5541, 7532-7534, and 7536-7539);
- Restaurants (SIC code 5812);
- 100,000 square feet or more of impervious surface in industrial/commercial
- Retail gasoline outlet;
- Parking lot 5,000 square feet or more of surface area or with 25 or more parking spaces;
- Redevelopment projects in subject categories that meet redevelopment thresholds (SUSWMP 2000).

Site-specific development projects within the TOD Plan areas that satisfy any of the categories identified above would be required to comply with the County SUSMP submittal requirements as specified on the County SUSMP Review Checklist and listed below:

- Provide a hydrology analysis to determine the design flow rate (QPM) or Volume (VM) for the first 3/4-inch of rainfall that must be treated.
- Submit site specific hydraulic calculations along with the recommended structural BMP manufacturer's product specifications to verify the BMP will adequately handle the minimum design flow required for treatment.
- Show locations of BMPs on building/drainage plans.

- Determine and provide the pre and post development pervious and impervious areas created by the proposed development.
- Submit Operation and Maintenance Guidelines that include the designated responsible party to manage the SUSMP devices, employee's training program and duties, operating schedule, maintenance frequency, routine service schedule, specific maintenance activities, copies of resource agency permits. Inspection and servicing of all SUSMP devices must occur on an annual basis at a minimum.

The County lists example BMPs to be implemented on sites; examples of these include using minimum pavement widths and permeable pavement, directing of rooftop runoff to pervious areas, and including vegetated swales and strips and infiltration basins throughout the development (SUSWMP, 2000).

LOCAL PLANS, POLICIES, AND REGULATIONS

City of Inglewood General Plan

The City of Inglewood General Plan does not contain any specific hydrology or water quality related policies that are relevant to the proposed TOD Plans.

City of Inglewood Municipal Code

Section 10-202 of the Inglewood Municipal Code addresses water quality and stormwater runoff. The purpose of this Section is to protect and improve water quality of receiving waters by prohibiting illicit discharges to the municipal separate storm sewer system (MS4); detecting and eliminating illicit connections to the municipal storm water system; reducing pollutants in storm water discharges to the MS4 from sources, including but not limited to, construction sites, development and redevelopment projects, commercial establishments, industries, and any other source of storm water and non-storm water runoff pollution over which the City has control.

Municipal Code Section 10-208, Low Impact Development Requirements for New Development and Redevelopment, establishes requirements for construction activities and operations of site-specific development projects to comply with the current MS4 Permit (Order No. R4-2012-0175); lessen the water quality impacts of development by using smart growth practices; and to integrate LID practices and standards for stormwater pollution mitigation through means of infiltration, evapotranspiration, biofiltration, and rainfall harvest and use.

Although the City of Inglewood does not lie in any mapped floodplain areas as defined by the Federal Emergency Management Agency (FEMA), the City has adopted floodplain management regulations in Chapter 10, Article 15 of the Municipal Code. The purpose of the article is to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas.

4.K.3 ENVIRONMENTAL SETTING

WATERSHEDS

The City of Inglewood is located within the boundaries of three watersheds: Los Angeles, Ballona, and Dominguez. The TOD Plan areas are located within the Ballona Watershed, which encompasses a total of 1,936 acres, which is (33 percent of the total City area (City, 2006).

The Ballona Watershed is highly developed: residential (64 percent), vacant/open space (17 percent), commercial (8 percent), and industrial (4 percent) are the predominant land uses (County 2016). Overall, more than 49 percent of the watershed is covered by roads, rooftops and other impervious surfaces (City of Los Angeles, 2016). The watershed is fed by a network of underground storm drains, and major tributaries of the watershed include Centinela Creek, Sepulveda Channel, and Benedict Canyon Channel.

GROUNDWATER BASIN

The City of Inglewood and the TOD Plan areas are located above the West Coast Groundwater Basin (Basin). The Basin underlies 160 square miles in the southwestern part of the Los Angeles Coastal Plain in Los Angeles County. It is bounded on the north by the Ballona Escarpment, an abandoned erosional channel from the Los Angeles River. On the east it is bounded by the Inglewood fault zone (which is a partial barrier to groundwater movement in the area), and on the south and west by the Pacific Ocean and consolidated rocks of the Palos Verdes Hills (DWR, 2004). The storage capacity of the primary aquifer in the Basin is estimated to be 6,500,000 Acre-feet (AF), and because the area is generally impervious, recharge of the basin is largely from injection wells and infiltration of surface flows (DWR, 2004).

The Basin provides groundwater to eleven cities and unincorporated areas of Los Angeles County with an average annual production of roughly 52,000 acre feet (AF) (West Basin, 2016). In 1961, the Basin was adjudicated, which limits the allowable annual extraction of groundwater per water rights holder in order to prevent seawater intrusion and a substantial lowering of the groundwater level. As part of the adjudication, the Court appointed the California Department of Water Resources (DWR) to serve as Watermaster to account for all water rights and groundwater extraction amounts per year. Each year DWR determines the amount of supplemental recharge that is needed for the Basin based upon annual groundwater extractions and groundwater levels (West Basin, 2016).

The City of Inglewood's adjudicated share of groundwater is 4,449.89 acre feet per year (AFY) (UWMP, 2011). The City has entitlement to pump up to its maximum allowable extraction right along with any carryover or unused water rights from the previous year. In 2010, the City obtained 36 percent of its water supply (3,623 AF) from the West Coast Groundwater Basin (UWMP, 2011).

WATER QUALITY

The Los Angeles Regional Water Quality Control Board (LARWQCB) assigns various existing, intermittent and potential beneficial uses to the water bodies within its jurisdiction; water quality

objectives are then implemented to ensure the protection of the water quality. Ballona Creek Watershed and its tributaries are impaired by pollutants (i.e., trash, metals, bacteria, nutrients) generally because of the watershed's large, dense population, urban development, and the amount of impervious ground surface that prevents large quantities of runoff from infiltrating into the soils. Thus, beneficial uses of the watershed are impaired.

Within the TOD Plan areas, the Ballona Creek Watershed is included on the Section 303(d) list of impaired waterbodies for dissolved copper, dissolved lead, total selenium, dissolved zinc, and toxicity (LARWQCB, 2015). The metals subject to this TMDL are toxic pollutants, and the water quality objectives for the metals reflect national policy that the discharge of toxic pollutants in toxic amounts be prohibited. The following designated beneficial uses in Ballona Creek are impaired by these metals: water contact recreation; non-contact water recreation; warm freshwater habitat; and wildlife habitat (LARWQCB, 2015).

DRAINAGE

There are no waterbodies located in the City or the TOD Plan areas, and the City is generally flat. Approximately 93 percent of the City, including the TOD Plan areas, have a limited slope with a gradient between approximately zero and five degrees. Additionally, due to the urban and developed nature of the City, the TOD Plan areas is largely covered with impermeable surfaces, and sheet flow stormwater runoff is managed by the existing system of storm drains.

The main storm drain lines within the TOD Plan area are owned and maintained by the Los Angeles County Flood Control District (LACFCD) and the City of Inglewood. The City owns and maintains approximately 12 miles of drainage pipelines and 464 catch basins; the LACFCD has approximately 42 miles of storm drain pipelines and 889 catch basins within the City of Inglewood.

The storm drain main lines within the TOD Plan areas consist of reinforced concrete pipe (RCP) that varies from 24 to 96-inches in diameter and reinforced concrete box (RCB). The general topography of the project area slopes from north to south and east to west; therefore, the storm drain pipes gravity flow generally from the northeast to southwest, and storm drain pipeline sizes generally increase from north to south.

The City of Inglewood drainage system drains into the various tributaries of each watershed discussed above. Typically, these areas are predominately channelized and highly developed with both commercial and residential properties. Most of the drainage networks are controlled by structural flood control measures, including debris basins, storm drains, underground culverts, and open concrete channels (City, 2010).

FLOOD ZONES AND INNUNDATION AREAS

The City of Inglewood does not include any areas designated as a Special Flood Hazard Area, which are subject to a one percent chance or greater chance of flooding in any one year (100-year flood zone). The City of Inglewood is designated a Non-Special Flood Hazard Area, and is considered by the NFIP to have a low to medium probability of flooding. Historically, Inglewood has experienced no flood

events (City, 2010). In addition, the City of Inglewood is not located within a dam inundation area (City 2010, Appendix D Map 2), and is not at risk of flooding due to failure of a dam or levee.

SEICHE, TSUNAMI, AND MUDFLOWS

Seiches are of concern relative to water storage facilities because inundation from a seiche can occur if the wave overflows a containment wall, such as the wall of a reservoir, water storage tank, dam, or other artificial body of water. The City of Inglewood does not contain any large water bodies that could be at risk related to seiche. Thus hazard risks related to seiche do not exist within the City.

A tsunami is a series of ocean waves caused by a sudden displacement of the ocean floor, most often due to earthquakes. The City of Inglewood is not located adjacent to the Pacific Ocean, is not within a tsunami zone (City 2010, Appendix D Map 6) (Cal EMA, 2016) and is not at risk of flooding due to a tsunami.

A mudflow is a landslide composed of saturated rock debris and soil with a consistency of wet cement. As described in Section 4.L, Geology and Soils, the TOD Plan area has a relatively flat topography. According to the City's Multi-Hazard Mitigation Plan (March 23, 2010) there are no hillsides within the City that could experience mudflow (City 2010, Appendix D Map 4).

4.K.4 SIGNIFICANCE CRITERIA

Criteria outlined in the CEQA Guidelines were used to determine the level of significance of identified impacts on hydrology and water quality. Appendix G of the CEQA Guidelines indicates that a project would have a significant effect on the environment if it were to:

- 4.K-1 Violate any water quality standards or waste discharge requirements;
- 4.K-2 Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of 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);
- 4.K-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site; or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- 4.K-4 Otherwise substantially degrade water quality;
- 4.K-5 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;
- 4.K-6 Place within a 100-year flood hazard area structures which would impede or redirect flood flows;

- 4.K-7 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; or
- 4.K-8 Cause inundation by seiche, tsunami, or mudflow.

Discussion related to the potential of the TOD Plan to result in runoff water which would exceed the capacity of existing or planned stormwater drainage systems is provided in Section 4.N, *Utilities, Service Systems, and Water Supply*.

4.K.5 PROJECT IMPACTS AND MITIGATION MEASURES

Threshold 4.K-1: Violate any water quality standards or waste discharge requirements.

Impact 4.K-1: Implementation of the proposed TOD Plan for Downtown Inglewood and Fairview Heights would not violate any water quality standards or waste discharge requirements. The resulting impact would be *less than significant*.

Methodology

The analysis of impacts to water quality is based on a review of published information and reports regarding regional hydrology, groundwater conditions, and surface water quality. Data sources include the LACRWQCB Water Quality Control Plan (LACRWQCB, 2015), California Department of Water Resources watershed and groundwater basin information (DWR, 2004), County of Los Angeles Ballona Creek Watershed Management (County, 2016), and other databases and reports as referenced. Components of the proposed TOD Plan that would have the benefit of reducing urban runoff are considered, and the analysis also takes into consideration mandatory compliance with applicable federal, state, and local regulations addressing water quality and urban runoff.

The potential impacts on water quality standards and waste discharge requirements were evaluated by considering the general type of pollutants that future site-specific development projects under the TOD Plan would generate during construction and operation. In determining the level of significance, the analysis recognizes that development under the proposed TOD Plan would be required to comply with relevant federal, state, and regional laws and regulations that are designed to ensure compliance with applicable water quality standards and waste discharge requirements. Because the regional and local regulations related to water quality standards have been developed to reduce the potential of pollutants in the water resources (as described in the Regulations Section above), and are implemented to specific waterbodies, such as 303D TMDL requirements, or specific development projects, such as grading and construction permit regulations that meet the MS4 requirements, potential violation of water quality standards or waste discharge requirements would occur if the TOD Plan would not implement the existing requirements. Conversely, implementation of all relevant water quality requirements would ensure that an exceedance of water quality standards would not occur and that impacts would be less than significant.

Impact Assessment

Construction

Implementation of the TOD Plan includes infill development involving demolition of some existing structures, site preparation, construction of new buildings, and infrastructure improvements. Demolition of existing structures, removal of existing pavement and concrete replacement, grading, stockpiling of materials, excavation and the import/export of soil and building materials, construction of new structures, and landscaping activities would expose and loosen sediment and building materials, which have the potential to mix with stormwater and urban runoff and degrade surface and receiving water quality.

Additionally, construction generally requires the use of heavy equipment and construction-related materials and chemicals, such as concrete, cement, asphalt, fuels, oils, antifreeze, transmission fluid, grease, solvents, and paints. In the absence of proper controls, these potentially harmful materials could be accidentally spilled or improperly disposed of during construction activities and could wash into and pollute surface waters or groundwater, resulting in a significant impact to water quality.

Pollutants of concern during construction activities generally include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. In addition, chemicals, liquid products, petroleum products (such as paints, solvents, and fuels), and concrete-related waste may be spilled or leaked during construction, which would have the potential to be transported via storm runoff into nearby receiving waters and eventually may affect surface or groundwater quality. During construction activities, excavated soil would be exposed thereby increasing the potential for soil erosion and sedimentation to occur compared to existing conditions. In addition, during construction, vehicles and equipment are prone to tracking soil and/or spoil from work areas to paved roadways, which is another form of erosion that could affect water quality.

Each future site-specific development project occurring under the proposed TOD Plan would require compliance with applicable regulations to obtain demolition, excavation, grading, or construction permits from the City. The permitting process would ensure each development project would be implemented in compliance with applicable NPDES requirements. In order to control the impact of erosion, sedimentation, and other pollutants on receiving waters, the SWRCB Construction General Permit (that would be implemented through the City's permitting process), requires the implementation of BMPs to eliminate or reduce the discharge of pollutants in stormwater discharges, and prohibits the discharge of non-storm water from construction sites as these non-storm water discharges are likely to carry pollutants to receiving waters.

Under the Construction General Permit, site-specific development projects within the TOD Plan area would be required to prepare a SWPPP and implement construction BMPs detailed in the SWPPP during construction activities, including the minimum BMPs listed in **Table 4.K-1** and the BMPs listed in **Table 4.K-2** if more than one-acre of land would be disturbed as part of project construction. Construction BMPs would be applied as needed per project (and enforced by permitting from the City) to minimize erosion and sedimentation and prevent spills. Various BMPs may be needed at different times during construction, since activities are constantly changing site conditions. Selection of erosion

control BMPs is based on minimizing disturbed areas, stabilizing disturbed areas, and protecting water quality. Selection of sediment control BMPs is based on retaining sediment onsite and controlling the site perimeter. In addition, the SWPPP identifies the following: equipment storage, cleaning and maintenance areas/activities; points of ingress and egress to the construction site; material loading, unloading, and storage practices and areas, including construction materials, building materials and waste materials; and materials, equipment, or vehicles that may come in contact with stormwater.

Compliance with the Construction General Permit, which would include implementation of BMPs that are designed, implemented, and maintained to address pollutants of concern, as required by the provisions of the Construction General Permit, would be required through the City's demolition, construction, grading, and excavation permitting process and would provide that no adverse water quality impacts would occur during construction of projects pursuant to the proposed TOD Plan. In addition, a Notice of Construction would be required to be submitted to the LARWQCB at least 30 days prior to the start of each development project's construction activities, which includes preparation and implementation of a SWPPP. A Notice of Construction Completion would be required to be submitted to LARWQCB upon completion of construction and stabilization of the development sites. As a result of compliance with the Construction General Permit and specific BMPs that are required for each construction project, construction impacts related to water quality standards or waste discharge requirements from implementation of the proposed TOD Plan would be less than significant.

Operation

Intensification of land uses that will occur due to implementation of the proposed TOD Plan could introduce new or additional pollutants to an existing area. Pollutants associated with the operation of the infill and/or redeveloped commercial, public facility, mixed-use, institutional, and residential uses generally include sediments, trash, petroleum products, metals, and chemicals that could potentially discharge into surface waters by storm drains either directly or during storm water runoff events. However, implementation of the TOD plan includes daylighting a stream that runs through the TechTown portion of the Downtown Inglewood TOD Plan area, where the City's storm drain main is located. As described in the TOD Plan, this daylighted stream would treat and provide for infiltration of runoff from the surrounding area, providing a feature that has the ability to reduce pollutants in water.

Development projects proposed pursuant to the TOD Plan would be required to implement Source Control and Treatment Control BMPs to reduce the discharge of pollutants to the maximum extent practicable. Treatment Control BMPs would also be required to be incorporated into the design of onsite storm drain systems to treat runoff in accordance with the SUSMP standards and as required by the City. The County's MS4 permit lists various types of Site Design, Source Control and Treatment Control BMPs to be implemented by new development and redevelopment projects. Typical Source Control BMPs that would be applicable to development projects within the TOD Plan are provided above in Tables 4.K-1 and 4.K-2. BMPs would be implemented on a per site basis depending upon the size of the site and the types of potential pollutants that are related to operation of the new land uses.

Implementation of site specific source control and treatment control BMPs in accordance with the County's SUSMP standards would remove potential pollutants from runoff and would not contribute additional pollutant loads into receiving waters. Applicable BMPs would be implemented on a project-by-project basis in accordance with County of Los Angeles NPDES MS4 Permit and associated SUSMP requirements, as required per Order R4-2012-0175. SUSMP requirements provide that projects conduct a drainage hydrologic/hydraulic analysis that details the site's anticipated runoff calculations. From these calculations a WQMP is prepared to design the project so that a net increase in stormwater runoff would not occur from implementation of the development. Development projects are required through implementation of a project specific WQMP to retain and treat the storm water quality volume generated by the project to reduce pollutant loading in runoff. In addition, Inglewood Municipal Code Section 10-208 requires LID standards to reduce potential water quality impacts of development by using smart growth practices, and through stormwater infiltration, evapotranspiration, biofiltration, and rainfall harvest and use. With implementation of these RWQCB, County, and City requirements, the development projects that would be implemented pursuant to the proposed TOD Plan would not result in adverse impacts to water quality through violation of water quality standards or waste discharge requirements, and impacts would be less than significant.

Significance Conclusion for Impact 4.K-1

Because site-specific development pursuant to the proposed TOD Plan would not violate any water quality or waste discharge requirements, impacts would be less than significant.

Threshold 4.K-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of 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).

Impact 4.K-2: Implementation of the proposed TOD Plan for Downtown Inglewood and Fairview Heights would not 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. This impact would be *less than significant*.

Methodology

The following groundwater supply analysis is based on a review of published information and reports regarding regional hydrology, geology, and groundwater conditions. Data sources include the 2010 Urban Water Management Plan (City, 2011), California Department of Water Resources watershed and groundwater basin information (DWR, 2004), Watermaster Service Report for the West Coast Basin (DWR, 2014), and other databases and reports as referenced. Components of the proposed TOD Plan that would have the benefit of increasing infiltration are considered, along with implementation of

applicable federal, state, and local regulations related to groundwater and the West Coast Groundwater Basin.

The analysis of impacts to groundwater considers changes in groundwater recharge due to increases in impervious surfaces, increase in water demand, and the condition of the groundwater basin.

Impacts are considered significant if the TOD Plan would result in a depletion of groundwater supplies or interfere with groundwater recharge such that there would be a lowering of the groundwater levels. In determining the level of significance, the analysis recognizes that all development under the proposed TOD Plan would be required to comply with the requirements of the West Coast Groundwater Basin adjudication, which is designed to prevent depletion of the Basin.

Impact Assessment

As described above, the West Coast Groundwater Basin is adjudicated, which limits the allowable annual extraction of groundwater per water rights holder, including the City of Inglewood. Groundwater levels are managed by the California Department of Water Resources to maintain a safe operating yield of groundwater, which is a sustainable pumping rate that does not exceed the total recharge into the basin.

During the 2013-2014 water year (which runs from June to July), the West Coast Basin had 41,060 acre-feet of water extracted, of an allowable 77,394.54 acre-feet (DWR 2014); and therefore had additional allowable pumping supply. The City of Inglewood has an adjudicated share of the groundwater supply and is entitled to pump 4,449.89 AFY of groundwater (UWMP, 2011), in addition to any carryover or unused water rights from the previous year. In 2014, the City pumped 1,910.97 AF of water from the West Coast Groundwater Basin, which left 2,538.92 AF (57 percent) of the City's water pumping rights unused (DWR 2014). The remainder of the City's water supply was imported from the Metropolitan Water District (MWD) (8,200.70 AF) and recycled water (827.20 AF) (DWR, 2014), as described in Section 4.N, Utilities, Service Systems and Water Supply.

As a result of the existing groundwater basin adjudication, which maintains a safe operating yield for the Basin by limiting the allowable extraction of groundwater, the City would not be permitted to pump a sufficient amount of water that could result in a lowering of the groundwater level or depletion of groundwater supplies. In addition, the City would have the water supplies to serve build out of the proposed TOD plan in addition to existing and planned development, which is detailed in Section 4.N, *Utilities, Service Systems and Water Supply*.

In addition, the TOD Plan involves infill development and redevelopment within an existing urban area with mainly impervious surfaces, including buildings, roadways, sidewalks, and parking lots. Since the existing TOD Plan area is currently made up of primarily impervious surfaces, implementation of the proposed TOD Plan would generate little or no increase in the amount of impervious surfaces (as described further below in Impact 4.K.3). In fact, implementation of the TOD Plan would result in a decrease in impervious surfaces because the TOD Plan provides for increased infiltration of stormwater into the Basin by introducing trees and landscaped areas as part of streetscape improvements and Green Boulevard program, which could increase infiltration to the Basin. In addition, the TOD plan includes a daylighted stream running through the TechTown portion

of the Downtown Inglewood planning area, where the City's storm drain main is located. As described in the proposed TOD Plan, this daylighted stream would be designed to treat and provide for infiltration and drainage of runoff from the surrounding area.

Therefore, implementation of the proposed TOD Plan would not result in an increase in impervious surface area such that the infiltration of surface water to groundwater would be reduced. Conversely, new pervious surfaces could increase the volume of groundwater infiltration, which would be an improvement in groundwater conditions. As a result, impacts related to depletion of groundwater supplies or interference with groundwater recharge would be less than significant.

Significance Conclusion for Impact 4.K-2

Because site-specific development permitted pursuant to the proposed TOD Plan would not deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level, impacts would be *less than significant*.

Threshold 4.K-3: Substantially alter drainage patterns, resulting in substantial erosion or siltation on- or off-site; or substantially increasing the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

Impact 4.K-3: Implementation of the proposed TOD Plan for Downtown Inglewood and Fairview Heights would not substantially alter drainage patterns in a manner that would result in substantial erosion or flooding on or off-site. This impact would be *less than significant*.

Methodology

The following hydrology analysis is based on consideration of components of the proposed TOD Plan that would have the benefit of reducing urban runoff, and mandatory compliance with applicable federal, state, and local regulations addressing runoff and erosion prevention. Specifically, impacts on erosion, siltation, and flooding from altering drainage patterns and increasing the rate and amount of stormwater runoff were evaluated by considering the existing urban environment, the extent of existing impervious surfaces, the general types of development that would be implemented by the TOD plan, and whether implementing the requirements of applicable regulations would avoid or reduce potential impacts related to substantial erosion, siltation, or stormwater runoff to a less-than-significant level.

Impact Assessment

Construction

The TOD Plan areas are a fully developed urban setting that no surface streams or rivers currently pass through. Stormwater run-off currently sheet flows across impervious surfaces and is collected in

street curbs and gutters, and then conveyed to storm drains. Construction of future site-specific development projects under the proposed TOD Plan would require demolition of some existing structures and removal of existing parking areas and landscaping, along with development of new uses. These activities would expose and loosen soils, which has the potential to result in erosion and the loss of topsoil. Because the TOD Plan areas are flat and do not contain substantial slopes, the large majority of soil disturbance for future site-specific development within the TOD areas would be related to excavation and backfill for installation of building foundations and underground utilities, as well as site grading to provide proper drainage.

The existing NPDES Construction General Permit requires preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) by a Qualified SWPPP Developer for construction sites that would disturb over one-acre of ground surface. The Qualified SWPPP Developer-prepared SWPPP is required to address site-specific conditions related to construction, and would identify potential sources of sedimentation during construction, and would describe the required BMPs that are necessary to reduce or eliminate the potential of erosion or alternation of a drainage pattern. Common types of construction BMPs are listed in Tables 4.K-1 and 4.K-2. In addition, a Qualified SWPPP Practitioner is required to ensure compliance with the SWPPP through regular monitoring and visual inspections during construction activities. The SWPPPs would be amended and BMPs revised, as determined necessary through field inspections, to protect against substantial soil erosion, the loss of topsoil, or alteration of the drainage pattern. Compliance with the Construction General Permit and a SWPPP prepared by a Qualified SWPPP Developer and implemented by a Qualified SWPPP Practitioner would prevent construction-related impacts related to potential alteration of a drainage pattern or erosion from site-specific development projects within the proposed TOD Plan areas that could result in flooding. Overall, with implementation of the existing construction regulations, impacts related to alteration of an existing drainage pattern that could result in substantial erosion, siltation, increases in stormwater runoff, and flooding on- or off-site from future development projects occurring under the proposed TOD Plan would be less than significant.

Operation

As described above, the TOD Plan areas are developed urban areas that are primarily covered with impervious surfaces. No surface streams or rivers pass through the areas. Stormwater run-off sheet flows across impervious surfaces, and is collected by curbs and gutters and conveyed to storm drains.

Although the proposed TOD Plan would implement infill and redevelopment of existing developed sites within the TOD Plan areas, including improvements to streetscapes, landscaping, pedestrian walkways, plazas, courtyards, etc., the proposed TOD Plan would not alter drainage patterns. The surface drainage would continue to be collected either within each development site and conveyed to the same existing storm drains that currently convey runoff to the Ballona Creek Watershed and West Coast Ground Water Basin.

Future site-specific development projects that would occur pursuant to the TOD Plan consist of commercial, residential, industrial, institutional, and mixed-use development that would not generate a substantial increase in the amount of runoff, such that an alteration of a drainage pattern, substantial erosion or siltation could occur. A majority of the existing TOD Plan area is covered with impervious

surfaces. Implementation of the TOD Plan would develop pervious areas to retain and infiltrate stormwater on development sites pursuant to the County's SUSMP requirements to ensure that no net increase in runoff would occur. Implementation of these permit requirements would ensure that drainage patterns are not substantially altered and that substantial erosion and siltation would not occur.

Additionally, implementation of the proposed TOD plan includes installation of landscaping along five miles of streets as part of the proposed Green Boulevards Network within the TOD Plan areas. These landscaped areas would help to capture, retain and utilize surface water runoff for irrigation, which would reduce the overall amount of surface runoff. The TOD Plan also includes daylighting a portion of Centinela Creek, which is currently contained within underground stormwater drainage pipelines. This would not involve the alteration of the course of a stream or river. Centinela Creek in the TOD Plan area was historically an open creek/drainage that was contained within drainage pipelines and paved over during previous development of the area. Daylighting a portion of Centinela Creek in the Techtown portion of the TOD Plan area (as described in Section 3.0, Project Description) would provide an open stream along the existing and natural drainage in the TechTown area, where the City's existing storm drain main is located. This daylighted stream would capture runoff from the surrounding area, provide additional drainage areas and reduce the potential for flooding. Overall, the daylighted stream would benefit and enhance the drainage in the Techtown area. Potential erosion from the daylighted creek would be limited by appropriate design of the creek bed to ensure that velocity of water during storm flows does not result in increased erosion, and that impacts would remain less than significant.

Overall, with implementation of the new pervious areas and compliance with applicable regulatory requirements, impacts related to alteration of an existing drainage pattern that could result in substantial erosion, siltation, increases in stormwater volume or velocity, or flooding on- or off-site would be less than significant.

Significance Conclusion for Impact 4.K-3

Impacts related to the potential for erosion, siltation, or runoff that could result in flooding would be less than significant.

Threshold 4.K-4: Substantially degrade water quality.

Impact 4.K-4: Implementation of the proposed TOD Plan for Downtown Inglewood and Fairview Heights would not substantially degrade water quality. Impacts would be *less than significant*.

Methodology

As described above, the water quality analysis is based on a review of published information and reports regarding groundwater and surface water quality from the LACRWQCB Water Quality Control Plan (LACRWQCB, 2015), California Department of Water Resources watershed and groundwater basin information (DWR, 2004), County of Los Angeles Ballona Creek Watershed

Management (County 2016), and other federal and state databases and reports, as referenced. Components of the proposed TOD Plan that would have the benefit of reducing urban runoff are considered.

Impacts on water quality were evaluated by considering the general type of pollutants future site-specific development projects pursuant to the TOD Plan would generate during construction and operation and whether meeting the requirements of applicable regulations would reduce potential impacts to a less-than-significant level.

The analysis also takes into consideration mandatory compliance with applicable federal, state, and local regulations addressing water quality and urban runoff. In determining the level of significance, the analysis recognizes that all development under the proposed TOD Plan would be required to comply with relevant federal and state laws and regulations that are designed to ensure that water quality is not substantially degraded. Thus, implementation of all relevant water quality requirements would ensure that an exceedance of water quality standards would not occur.

Impact Assessment

Construction

Implementation of the TOD Plan includes infill development involving demolition of some existing structures and removal of existing pavement, site preparation and grading, construction of new buildings, stockpiling of materials, landscaping activities, and infrastructure improvements that could result in degradation of water quality.

However, as described in Impact discussion 4.K-1, each future site-specific development project pursuant to the TOD Plan would be required to comply with applicable NPDES requirements to control pollutants and protect water quality during construction. The SWRCB Construction General Permit (that would be implemented through the City's permitting process), requires the implementation of BMPs to eliminate or reduce the discharge of pollutants in stormwater discharges, and prohibits the discharge of non-storm water from construction sites as these non-storm water discharges are likely to carry pollutants to receiving waters. Future site-specific development projects under the proposed TOD Plan would be required to prepare a SWPPP and implement construction BMPs detailed in the SWPPP during construction, which are designed to protect water quality and thereby avoid significant impacts. Therefore, compliance with the required permit actions would result, in construction impacts related to a substantial degradation in from construction activities related to the proposed TOD Plan would be less than significant.

Operation

Intensification of land uses that would result from the proposed TOD Plan could introduce new or additional pollutants to an existing area, such as sediments, trash, petroleum products, metals, and chemicals that could potentially discharge into surface waters by storm drains either directly or during storm water runoff events. Therefore, development projects proposed pursuant to the TOD Plan would be required to implement Source Control and Treatment Control BMPs to reduce the discharge

of pollutants to the maximum extent practicable, in accordance with the SUSMP standards. Implementation of site specific source control and treatment control BMPs in accordance with the SUSMP standards (such as those listed in Tables 4.K-1 and 4.K-2) would remove potential pollutants from runoff and would not contribute additional pollutant loads into receiving waters. In addition, Inglewood Municipal Code Section 10-208 requires LID standards to be implemented in each site-specific development project to reduce potential water quality impacts by using smart growth practices, and through stormwater infiltration, evapotranspiration, biofiltration, and rainfall harvest and use. With implementation of Source Control and Treatment Control BMPs in accordance with the SUSMP standards and LID development standards, the development projects that would be implemented by the proposed TOD Plan would not result in a substantial degradation of water quality, and impacts would be less than significant.

Significance Conclusion for Impact 4.K-4

Site-specific development projects pursuant to the proposed TOD Plan would not substantially degrade water quality. Therefore, impacts would be less than significant.

Threshold 4.K-5: Place housing within a 100-year flood hazard area.

Impact 4.K-5: Implementation of the proposed TOD Plan for Downtown Inglewood and Fairview Heights project would not place housing within a 100-year flood hazard area. No impacts would occur.

Methodology

Because the City of Inglewood does not include any land areas within a 100-year flood area, all housing development pursuant to the proposed TOD Plan would not be located within a 100-year flood area. Thus, further analysis related to the potential hazards related to placement of housing within a 100-year flood area is unnecessary.

Impact Assessment

There are no land areas designated as Special Flood Hazard Areas by FEMA under the National Flood Insurance Program (areas subject to a one percent chance or greater chance of flooding in any one year, 100-year flood zone) within the City of Inglewood, which is designated a Non-Special Flood Hazard Area. It is considered by the NFIP to have a low to medium probability of flooding and historically has experienced no flood events (City 2010). As a result, implementation of the proposed TOD Plan would not result in placement of housing within a 100-year flood hazard, and impacts would not occur.

Significance Conclusion for Impact 4.K-5

No impacts related to the placement of housing within a 100-year flood area would occur from implementation of the proposed TOD Plan.

Threshold 4.K-6: Place structures within a 100-year flood area that would impede or redirect flood flows.

Impact 4.K-6: Implementation of the proposed TOD Plan for Downtown Inglewood and Fairview Heights would not place structures within a 100-year flood area that could impede or redirect flood flows. *No impacts would occur.*

Methodology

Because the City of Inglewood does not include any land areas within a 100-year flood area, all site-specific development pursuant to the proposed TOD Plan would be located outside of 100-year flood areas where development could impede or redirect flood flows. Thus, further analysis of potential hazards related to impeding or redirecting 100-year flood flows are unnecessary.

Impact Assessment

The City has no land area designated as Special Flood Hazard Areas which are subject to a one percent or greater chance of flooding in any one year (also identified as a 100-year flood area). The City of Inglewood is designated a Non-Special Flood Hazard Area. It is considered by the NFIP to have a low to medium probability of flooding and historically has experienced no flood events (City, 2010). Therefore, implementation of the proposed TOD Plan would not place structures within a 100-year flood area that would impede or redirect flood flows, and impacts would not occur

Significance Conclusion for Impact 4.K-6

Impacts related to the placement of structures within a 100-year flood area that could impede or redirect flood flows would not occur from implementation of the proposed TOD Plan.

Threshold 4.K-7: Expose people or structures to significant risk involving flooding, including flooding due to the failure of a levee or dam.

Impact 4.K-7: Implementation of the proposed TOD Plan for Downtown Inglewood and Fairview Heights project would not expose people or structures to risks related to flooding due to the failure of a levee or dam. *No impacts would not occur.*

Methodology

The City of Inglewood does not include any land areas within a dam inundation area, nor are any portions of the City at risk of flooding due to failure of a levee (City 2010, Appendix D Map 2). Thus, no development pursuant to the proposed TOD Plan would be at risk of flooding due to failure of a dam or levee, and further analysis related to potential dam or levee inundation hazards is unnecessary.

Impact Assessment

The City of Inglewood is not located within a dam inundation area, nor are any portions of the City at risk of flooding due to failure of a levee (City 2010, Appendix D Map 2). No impacts related to flooding from dam or levee failure would occur from implementation of the proposed TOD Plan.

Significance Conclusion for Impact 4.K-7

No impacts related to the exposure of people or structures to significant risk involving flooding due to the failure of a levee or dam would occur.

Threshold 4.K-8: Cause inundation due to seiche, tsunami, or mudflow.

Impact 4.K-8: Implementation of the proposed TOD Plan for Downtown Inglewood and Fairview Heights would not cause inundation due to seiche, tsunami, or mudflow. No impact would result.

Methodology

Because the City of Inglewood does not include any land areas that are at risk of a seiche, tsunami, or mudflow, all development pursuant to the proposed TOD Plan would not be located within areas that have risks related to these hazards. Thus, analysis related to seiche or tsunami impacts is not necessary.

Impact Assessment

Seiches are of concern relative to water storage facilities because inundation from a seiche can occur if the wave overflows a containment wall, such as the wall of a reservoir, water storage tank, dam, or other artificial body of water. The City of Inglewood, including the TOD Plan areas, does not contain any large water bodies that could be at risk related to seiche and, as a result, risks related to seiche would not occur due to implementation of the proposed TOD Plan.

The City of Inglewood, including the TOD Plan areas, is not located adjacent to the Pacific Ocean and is not within a tsunami zone (City 2010, Appendix D Map 6) (Cal EMA, 2016) and is not at risk of flooding due to a tsunami. Therefore, impacts related to tsunamis would not occur.

As described in Section 4.L, Geology and Soils, the TOD Plan areas have a relatively flat topography. According to the City's Multi-Hazard Mitigation Plan (March 23, 2010) there are no hillsides within the City that could experience mudflow (City 2010, Appendix D Map 4). Thus, risks related to mudflow would not occur from implementation of the proposed TOD Plan.

Significance Conclusion for Impact 4.K-8

No impacts related to inundation from tsunami, mudflow, or seiche would not occur from implementation of the proposed TOD Plan.

4.K.6 REFERENCES – HYDROLOGY AND WATER QUALITY

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