5.8 HYDROLOGY AND WATER QUALITY

This Section of the Draft EIS evaluates the potential for the Project to impact hydrology and water quality conditions on a local and regional context. More specifically, this Section evaluates impacts associated with the Project that may potentially affect the regional and local water quality, surface water hydrology, and groundwater hydrology. Various federal, State, regional, Tribal, and local programs and regulations related to anticipated hydrology and water quality impacts are also discussed in this Section. Please see Section 9.0 for a glossary of terms, definitions, and acronyms used in this Draft EIS.

A. ENVIRONMENTAL SETTING

1. Existing Conditions

Hydrologic Conditions

Watershed

The Project Site is located within the boundaries of the Coachella Valley Planning Area of the Colorado River Basin (Region 7). Region 7 covers approximately 13,000,000 acres (20,000 square miles) in the southeastern portion of California, and includes all of Imperial County and portions of San Bernardino, Riverside, and San Diego Counties. It is bounded on the east by the Colorado River; to the south by Mexico; to the west by the Laguna, San Jacinto, and San Bernardino Mountains; and to the north by the New York, Providence, Granite, Old Dad, Bristol, Rodman, and Ord Mountain Ranges.1

The Coachella Valley Planning Area consists of the Whitewater River Watershed and East Salton Sea Watershed, with the Project Site located within the Whitewater River Watershed. The Whitewater River Watershed covers 1,920 square miles in the west central portion of Region 7 and includes the majority of Riverside County and a small portion of southern San Bernardino County.2 The watershed consists mainly of sparsely populated mountains, desert, and agricultural lands. The watershed is bounded on the south by the San Jacinto and Santa Rosa Mountains, on the west by the Santa Ana Watershed, on the east by the Salton Sea, the Hexie and Cottonwood Mountains, and Southern Mojave Watershed, and on the north east by the little San Bernardino Mountains and Southern Mojave Watershed. The highest elevation (upper reaches) of the watershed occur in the San Jacinto Mountains at 10,000 feet above

mean sea level, while the Salton Sea at 230 feet below mean sea level forms the lowest elevation of the watershed.³

**Regional Drainage**

The Whitewater River, a channelized river, is the major surface drainage watercourse in the Coachella Valley. The Whitewater River also has a constructed downstream extension known as the Coachella Valley Stormwater Channel, which serves as a drainage way for irrigation return flows, treated community wastewater, and storm runoff.⁴ The stormwater facilities operated and maintained by Coachella Valley Water District (CVWD) include the Whitewater River Stormwater Channel, Coachella Valley Stormwater Channel, West and East side dike systems, fifteen Cove Community channels from Rancho Mirage to La Quinta, Cove Community basins, Lower Valley stormwater channels in the agricultural areas, and detention channels that drain water impounded behind the dikes.⁵ The Whitewater River is typically a desert dry wash, flowing only in periods of intense rain.

The CVWD is the local jurisdiction, which operates and maintains multiple stormwater protection facilities in the region with a combined length of 135 miles.⁶ CVWD delivers irrigation and domestic (drinking) water, collects and recycles wastewater, provides regional stormwater protection, replenishes the groundwater basin and promotes water conservation. Additionally, CVWD is involved with regional stormwater and flood protection, including planning, maintenance and construction of drainage improvements for regional flood control facilities, as well as watershed and watercourse protection related to these facilities.

The CVWD has conducted master studies to determine potential flooding hazards within their service boundaries. The master plan studies for the North Cathedral City and Thousand Palms areas indicate existing flood hazards from the sources in the Morongo Was Watershed, which consists of Morongo Wash, Long Canyon, East and West Wide Canyon and Willow Hole.⁷ Floodwaters from these watersheds coalesce along the valley bottom and flow southeast along the Interstate 10 (I-10) corridor.

The regional stormwater facilities that have been built in the area, and further southeast, consist of the flood channels or “greenbelts” built in the Classic Club Golf Course, Sun City Palm Desert, and Sun City

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⁴ CRWQCB, 2006.
Shadow Hills. CVWD is currently undertaking several projects to connect the existing regional facilities. One project will design flood conveyance channels in North Indio that would connect the Sun City Palm Desert facilities to the Sun City Shadow Hills ones and then to the Coachella Valley Stormwater Channel. Another project would complete of the design of the Thousand Palms Flood Control Project that was originally developed by the US Army Corps of Engineers (USACE). The Thousand Palms Flood Control Project would collect stormwater from the Thousand Palms Watershed by intercepting flood flows with a series of levees on the fans uphill from community of Thousand Palms and conveying them through the Classic Club Golf Course and a new channel to Sun City Palm Desert.

CVWD is planning facilities to manage floodwaters from the Morongo Wash Watershed and the riverine flows under the assumption that the other regional projects are in place or complete. These facilities would likely either convey the riverine flows to the Whitewater River Stormwater Channel near Palms Springs or to the Coachella Valley Stormwater Channel through the regional facilities that are in the process of being designed, as described in the preceding paragraph. 8

Local Drainage

The Whitewater River is located approximately 2.9 miles southwest of the Project Site. Water flows northwest to southeast through the City of Rancho Mirage (“City”) and eventually empties into the Salton Sea. The Whitewater River has an intricate drainage network of several intermittent, north-flowing streams that drain the Santa Rosa Mountains and empty into the Whitewater River. The two largest tributaries of the Whitewater River are Bradley and Magnesia Spring Canyon streams. Several unnamed smaller streams and drainages also feed these two streams. In the urbanized parts of the area, streams have been modified and are now mostly confined to open channels, culverts, and storm drains; however, for most of their length, they remain natural and unmodified.

According to the Master Drainage Plan for the City, there are three local watershed zones (1, 2, and 3) within a 5.4 square mile area of the City. The Project Site is located within Zone 2 (1,645 acres) of the City’s Master Drainage Plan. This Zone has the greatest amount of undeveloped land and is divided by the Palm Springs Ridge Line. In general, the area north of the ridgeline drains toward I-10 and the area south of the Palm Springs Ridge Line drains towards the Whitewater River. System deficiencies include the need to implement several regional drainage improvements to collect runoff in this zone (e.g., the proposed Mid-Valley Channel and a new culvert through the new Monterey Drive Interchange embankment at the Union Pacific Railroad (UPRR/I-10 crossing).

Project Site

Topographically, the Project Site generally slopes downward to the northeast and southwest. Surface elevations range from approximately 350 feet to 250 feet above mean sea level, with the highest points located in the south- and west-central portions of the Project Site. Based on surface topography, drainage across the Project Site is generally from the center of the Project Site to the north towards Ramon Road and to the south towards Dinah Shore Drive via sheet flow flowing natural drainage courses. The runoff drains into the local storm drain system along Bob Hope Drive and Dinah Shore Drive.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Map Number’s 06065C1585G and 06065C1595G, effective since August 28, 2008, the Project Site is not in a designated 100-year flood hazard area. The nearest 100-year flood zone is located approximately 0.5 miles north of the I-10, and is designated as AO (100-year risk of flooding one to two feet deep).

A small portion of the northeast portion of the Project Site is within the floodplain limits of the Morongo Wash Watershed, as shown in Figure 5.8-1, Existing 100-Year Flood Hazard Areas.

Water Resources

The principal water sources of the Coachella Valley are local groundwater, recycled water, and imported water either through the State Water Project (SWP) or from the Colorado River via the Coachella Canal, a branch of the All-American Canal. Although Colorado River water and SWP water are percolated into the groundwater supply, and are ultimately used through groundwater pumping, they are considered separate sources of water for CVWD. Local surface water is also present in the Coachella Valley in the form of streams; however, CVWD does not derive any of its direct supply from surface water. Additionally, average precipitation in this arid region is only 3 to 6 inches per year and does not directly provide significant additional water supplies because most of the precipitation evaporates or is consumed by the native vegetation. However, the aquifers are recharged by precipitation and runoff from the local mountains.

CVWD currently has approximately 106,000 domestic water connections and has a groundwater production capacity of 240 million gallons per day. Areas served with domestic water by CVWD include a portion of lands near Desert Hot Springs, the Indio Hills area, and a portion of Cathedral City. CVWD serves all of Rancho Mirage, Thousand Palms, Palm Desert, Indian Wells, La Quinta, and a portion

Existing 100-Year Flood Hazard Areas

Legend:
- Project Site

Not to Scale

Source: CVWD, North Coachella Valley Stormwater Master Plan - 2013; Google Earth - 2014

FIGURE 5.8-1

LOT -142
Ivey Ranch

26,800 cfs
12,500 cfs

Depth (in feet)
- 0 - 1
- 1 - 2
- 2 - 3
- 3 - 5
- 5 - 10
- 10 - 15
- 15 - 20
- 20 +
of Indio and Coachella. CVWD also serves other rural communities, including Thermal, Mecca, Oasis, Desert Shores, Salton Sea Beach, Salton City, North Shore, Bombay Beach, and Hot Mineral Springs, and other portions of unincorporated Riverside County.

**Groundwater**

**Groundwater Supplies**

Development throughout the Coachella Valley has been dependent on groundwater as a source of supply. The demand for groundwater has annually exceeded the limited natural recharge of the groundwater basin. Therefore, imported water is used to recharge the aquifer and reduce groundwater overdraft. Department of Water Resources (DWR) Bulletin 108 is the most current bulletin published by DWR that characterizes the condition of the aquifer as a whole.\(^\text{11}\) In Bulletin 108, DWR notes that the amount of usable supply in the over-drafted aquifer is decreasing. The annual overdraft for the Coachella Valley is estimated to be approximately 62,500 acre-feet per year, with a cumulative overdraft of 5.1 million acre-feet from 1964 through 2006.\(^\text{12}\) The average rise in water levels observed in monitored wells in the West Whitewater River Subbasin Area of Benefit from 2012 to 2013 was 1.1 feet.\(^\text{13}\)

Please refer to the discussion under Public Water Supply, in Section 5.15.1, Utilities and Service Systems: Water Service, of this EIS for additional information on groundwater supply and overdraft mitigation efforts.

**Groundwater Quality**

Groundwater is the main source of domestic water supply for residents and businesses within CVWD’s service area. Water quality and the character of groundwater are determined by a number of factors including: mineral content of sediments, recharge and drainage patterns, stormwater infiltration, historic land use practices, and casing screening intervals and depths of wells sampled.

As required by the California Safe Drinking Water Act, public water suppliers are required to provide annual Water Quality Reports to its customers (also known as Consumer Confidence Reports). This mandate is governed by the US Environmental Protection Agency (USEPA) and the California Department of Health Services to inform customers of their drinking water quality. In accordance with

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the Safe Drinking Water Act, the public water supplier monitors regulated and unregulated compounds in its water supply. CVWD analyzes more than 22,000 water samples annually to ensure that domestic water meets State and federal standards. Every year, CVWD is required to analyze a select number of these samples for more than 100 regulated and unregulated substances.14

**Surface Water Quality**

As previously stated, the Project Site is within Region 7. Regional drainage of this area is via the Whitewater River, which flows northwest to southeast and passes approximately three miles south of the Project Site. The Project would indirectly discharge into these receiving waters. The beneficial uses of the downstream receiving waters (Whitewater River, Coachella Valley Storm Water Channel, and Salton Sea) of the Project include but are not limited to agriculture supply, water-contact recreation, and warm fresh water habitat.

The Colorado River Basin Regional Water Quality Control Board (Colorado River Basin RWQCB) is charged by the Porter-Cologne Water Quality Control Act with the protection of water quality for waters within the region. Colorado River Basin RWQCB is also responsible for implementing provisions and pollution control requirements that the federal Clean Water Act specifies for surface waters of the United States. The Colorado River Basin RWQCB Water Quality Control Plan identifies all waters in the region and establishes water quality standards (WQSs) for those waters. WQSs consist of limits or levels of water quality constituents or characteristics that are established for the reasonable protection of the beneficial uses of a water body.15

The Coachella Valley Storm Water Channel is listed as an impaired water body for pathogens (bacteria and viruses). The sources of the pollutants/stressors for the Coachella Valley Storm Water Channel are unknown. The Salton Sea is also listed as an impaired water body for nutrients, salinity, and selenium. The sources of pollutants/stressors for the Salton Sea include major industrial point source, agricultural return flows, out-of-state source, and point source.16

In 2010, the Colorado River Basin RWQCB prepared and amended the Basin Plan for bacteria indicators of the Coachella Valley Stormwater Channel. The plan was subsequently sent to the State Water Resources Control Board (SWRCB) for review and approval in 2011.17

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2. Regulatory Setting

Federal

Clean Water Act

The federal Clean Water Act (CWA)\(^{18}\) is intended to restore and maintain the cleanliness of the nation’s bodies of water in order to achieve a level of water quality that provides for recreation in and on the water and for the propagation of fish and wildlife. Section 208 of the CWA and the requirements of the Code of Federal Regulations require local water management plans. Preparation of these water management plans is delegated to individual states by the USEPA, which is charged with implementing the CWA.

Pursuant to Section 404 of the CWA, the United States Army Corps of Engineers (USACE) regulates discharges of dredged and/or fill material into waters of the United States.\(^{19}\) “Waters of the United States” are defined in USACE regulations such that navigable waters of the United States are those that are navigable in the traditional sense.\(^{20}\) “Waters of the United States” is a broader term than “navigable waters of the United States” and includes adjacent wetlands and tributaries to navigable waters of the United States and other waters, the degradation or destruction of which could affect interstate or foreign commerce.

The CWA requires all states to conduct water quality assessments of their water resources to identify water bodies that do not meet water quality standards. The water bodies that do not meet water quality standards are placed on a list of impaired waters pursuant to the requirements of Section 303(d) of the CWA.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) is a program created to implement the Clean Water Act. In November 1990, the USEPA published final regulations that establish requirements for specific categories of industries, including construction projects that encompass greater than or equal to 5 acres of land. The Phase II Rule became final in December 1999, expanding regulated construction sites to those greater than or equal to 1 acre. The regulations require that stormwater and non-stormwater runoff associated with construction activity that discharges either directly to surface waters or indirectly through municipal separate storm sewer systems (MS4), must be regulated by an NPDES permit.

\(^{18}\) U.S. Code, Title 33, sec. 1251–1387.
\(^{19}\) U.S. Code, Title 33, sec. 1344.
\(^{20}\) U.S. Code, Title 33, Part 328.3, “Definitions.”
The USEPA has delegated management of California’s NPDES program to the SWRCB and the nine regional board offices that grant permits to regulate point source discharges of industrial and municipal wastewater into the waters of the United States. The NPDES program was established in 1972 to regulate the quality of effluent discharged from easily detected point sources of pollution such as wastewater treatment plants and industrial discharges. The 1987 amendments to the CWA\(^21\) recognized the need to address non-point-source stormwater runoff pollution and expanded the NPDES program to operators of MS4s, construction projects, and industrial facilities.

The State of California is required by Section 303(d) of the CWA\(^22\) to provide the USEPA with a list of water bodies considered by the State to be impaired (i.e., not meeting water quality standards and not supporting their beneficial uses). The list also identifies the pollutant or stressor causing impairment, and establishes a schedule for developing a control plan to address the impairment, typically a total maximum daily load (TMDL). The TMDL specifies the amount of the target pollutant that the water body can sustain on a daily or annual basis and is established by amending the water quality control plan. TMDLs are prepared by the RWQCBs and result in amendments to the Water Quality Control Plan (WQCP), which must be approved by the USEPA. The 303(d) list is used by the USEPA to prepare the biennial federal CWA Section 305(b) Report on Water Quality.

The Project Site is located within the 13-million-acre Colorado River Basin, which is governed by the Colorado River Basin RWQCB, also known as Region 7. The SWRCB administers the NPDES permit program regulating stormwater from construction activities for projects greater than 1 acre in size. This is known as the General Permit for Storm Water Discharges Associated with Construction Activities, Order No. 2009-0009-DWQ, as amended by Order No. 2012-0006-DWQ, NPDES No. CAS000002. The main compliance requirement of NPDES permits is the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The purpose of a SWPPP is to identify potential on-site pollutants and identify and implement appropriate stormwater pollution prevention measures to reduce or eliminate discharge of pollutants to surface water from stormwater and non-stormwater discharges. Stormwater Best Management Practices (BMPs) to be implemented during construction and grading, as well as post-construction BMPs will be outlined in the SWPPP prepared for the proposed Project consistent with the Agua Caliente Band of Cahuilla Indians (“Tribe”) Ordinance controlling pollutant discharges into the waters of the Agua Caliente Indian Reservation (“Reservation”).


In 2011, the Tribe received an exemption from NPDES Permit requirements from the USEPA because those portions of the Reservation under Tribal jurisdiction (i.e. areas outside of the Land Use Agreements) do not qualify for maintaining permit coverage.

**USEPA Toxics Rule**

The USEPA has developed water quality criteria for priority toxic pollutants and other provisions for water quality standards to be applied to inland surface waters, enclosed bays, and estuaries in the State of California. The rule includes ambient aquatic life criteria for 23 priority toxic pollutants, ambient human health criteria for 57 priority toxics, and a compliance schedule.

**State**

**California Porter-Cologne Act**

The California Porter-Cologne Act of 1970 is largely responsible for creating the State’s extensive regulatory program for water pollution control. As discussed previously, preparation of water quality control plans has been delegated to the individual states by the USEPA. Pursuant to the Porter-Cologne Act, the responsibility for protection of water quality in California rests with the SWRCB. In turn, the SWRCB has delegated the regulation of the hydrologic basin to nine RWQCBs to regulate the nine hydrologic basins in the State. The Porter-Cologne Act gives the SWRCB and RWQCB broad powers to protect water quality by regulating waste discharges to water and land and by requiring cleanup of hazardous conditions.

**California Water Quality Control Board**

The SWRCB administers the NPDES General Permit for Discharges of Stormwater Runoff Associated with Construction Activity (General Construction Permit Order 2009-0009-DWQ). 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. The General Construction Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map which shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and

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25 California Environmental Protection Agency, State Water Resources Control Board, General Construction Permit Order 2009-0009-DWQ.
drainage patterns across the project. The SWPPP must list Best Management Practices (BMPs) the discharger will use to protect stormwater runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program; a chemical monitoring program for “non-visible” pollutants to be implemented if there is a failure of BMPs; and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

**Colorado River Regional Water Quality Control Board**

The Project Site is located within the 13-million-acre Colorado River Basin, which is governed by the Colorado River Basin Regional Water Quality Control Board (RWQCB), also known as Region 7. The Colorado River Basin RWQCB has adopted a Water Quality Control Plan\(^ 26 \) (Basin Plan) in accordance with criteria contained in the CWA, California Porter-Cologne Water Quality Control Act, and other pertinent State and federal rules and regulations. The intent of the Basin Plan is to provide definitive guidelines and give direction to the scope of Colorado River Basin RWQCB activities that will optimize the beneficial uses of the State waters within the Colorado River Basin by preserving and protecting the quality of these waters. The intended beneficial use of water determines the water quality objectives. For example, drinking water must be of higher quality than the water used to irrigate pastures. Both of these are beneficial water uses, but the quality requirements for irrigation water are different from those for drinking water.

The SWRCB administers the NPDES permit program regulating stormwater from construction activities for projects greater than 1 acre in size. This is known as the General Permit for Storm Water Discharges Associated with Construction Activities, Order No. 99-08-DWQ, NPDES No. CAS000002. The main compliance requirement of NPDES permits is the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The purpose of a SWPPP is to identify potential on-site pollutants and identify and implement appropriate stormwater pollution prevention measures to reduce or eliminate discharge of pollutants to surface water from stormwater and non-stormwater discharges. Stormwater Best Management Practices (BMPs) to be implemented during construction and grading, as well as post-construction BMPs, will be outlined in the SWPPP prepared for the proposed Project.

The Colorado River Basin RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements for appropriate persons and groups; these can include individuals, communities, or businesses whose waste discharges may affect water quality. These requirements can be either State Waste Discharge Requirements for discharge to land, or federally delegated NPDES permits for

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discharges to surface water. Dischargers are required to meet water quality objectives and, thus, protect beneficial uses.

**Senate Bill 1557**

Senate Bill (SB) 1557 was signed into law on September 29, 2006, and became effective January 1, 2007. The bill prohibits the use of potable water for non-potable purposes when non-potable water is available within the jurisdictional boundaries of the CVWD. The intent of the legislation is to preserve potable water within the Coachella Valley because potable water is supplied primarily by groundwater from the Coachella Valley groundwater basin, which is currently in a state of overdraft.

**Cobey-Alquist Flood Control Act**

The Cobey-Alquist Flood Control Act states that a large portion of land resources of the State of California is subject to recurrent flooding. The public interest necessitates sound development of land use, as land is a limited, valuable, and irreplaceable resource, and the floodplains of the State are a land resource to be developed in a manner that, in conjunction with economically justified structural measures for flood control, will prevent loss of life and economic loss caused by excessive flooding. The primary responsibility for planning, adoption, and enforcement of land use regulations to accomplish floodplain management rests with local levels of government. It is State of California policy to encourage local levels of government to plan land use regulations to accomplish floodplain management and to provide State assistance and guidance.

**California Drainage Law**

California Drainage Law is essentially case law. As such, it is complex, but the courts have established the following general principles, which apply in general to development projects:

- The downstream property owner is obligated to accept and make provision for those waters that are the natural flow from the land above.
- The upstream property owner shall not concentrate water where it was not concentrated before without making proper provision for its disposal without damage to the downstream property owner.
- The upstream property owner may reasonably increase drainage runoff by paving or construction of other impervious surfaces, including buildings without liability. The upstream property owner may not further increase drainage runoff by diversion of water that previously drained to another area. Reasonableness is often based on prevailing standards of practice in the community or region.

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27 Government Code Section 65041.1, Senate Bill No. 1557
28 California Water Code, Cobey-Alquist Flood Plain Management Act, (1965 as amended), Sec. 8400-8401.
- No property owner shall block, or permit to be blocked, any drainage channel, ditch, or pipe. No property owner shall divert drainage water without properly providing for its disposal.

**Urban Water Management Planning Act**

The Urban Water Management Planning Act\(^{29}\) (UWMPA) requires urban water suppliers that provide water for municipal purposes to more than 3,000 customers, or more than 3,000 acre-feet per year of water, to prepare an Urban Water Management Plan (UWMP). The intent of the UWMP is to assist water supply agencies in water resource planning given their existing and anticipated future demands. The UWMP must include a water supply and demand assessment comparing total water supply available to the water supplier with the total projected water use over a 20-year period. It is also mandatory that the management plans be updated every five years.

**Government Code 65302**

Government Code Section 65302(a) requires cities and counties located within the State to review the Land Use, Conservation, And Safety elements of the general plan “for the consideration of flood hazards, flooding, and floodplains” to address flood risks.\(^{30}\) Any amendment to the Land Use, Conservation, Or Safety elements requires a review of other general plan elements for internal consistency, including the Housing Element.

The code also requires cities and counties in the State to annually review the land use element within “those areas covered by the plan that are subject to flooding identified by floodplain mapping prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources.” FEMA’s floodplain mapping includes:

- Flood Insurance Rate Maps (FIRM)
- Digital Flood Insurance Rate Maps (DFIRM)

DWR’s floodplain mapping includes:

- Awareness Floodplain Maps
- Best Available Mapping (BAM)
- Levee Flood Protection Zones (LFPZ) Maps
- Central Valley Floodplain Evaluation and Delineation (CVFED) Maps


\(^{30}\) California Government Code, Sec. 65300-65303.4, Authority and Scope of General Plans.
Additionally, the location and designation of land uses in a general plan Conservation Element now “need to consider the identification of land and natural resources” that are used “for purposes of groundwater recharge and stormwater management.”

**Regional and Local**

**Riverside County Municipal Code**

Stormwater Drainage System Protection Regulations includes a series of regulations intended to protect and enhance the water quality of county water courses, water bodies, groundwater, and wetlands in a manner pursuant to and consistent with applicable requirements contained in the CWA, California Porter-Cologne Act, and any associated State or federal regulations, administrative orders or permits.  

Tentative Tract Maps require that the proposed method of control of stormwater, including data on the amount of runoff and the approximate grade and dimension of the proposed facilities, be included on a proposed tentative tract map.

Tract Drainage includes several regulations pertaining to flood control facilities within new development projects. These regulations require that proposed drainage facilities be designed to convey flows associated with a 100-year storm event.

**Riverside County NPDES Permit**

Riverside County has been issued NPDES Permit No. CAS 618033 for stormwater runoff by the Colorado River Basin RWQCB. Riverside County and the Riverside County Flood Control and Water Conservation District are principal permittees and the CVWD along with 10 nearby cities are listed as co-permittees. On June 7, 2013, the renewal of Board Order No. R8-2013-0024 and NPDES No. CAS 618033 was certified by the Executive Officer of the Colorado River Basin RWQCB to supersede Order No. R8-2010-0033.

**Whitewater River Region Stormwater Management Plan**

The County of Riverside; the CVWD; the Cities of Banning, Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs, and Rancho Mirage; and the Riverside County Flood Control and Water Conservation District (permittees) developed the White Water River Region...
Stormwater Management Plan (SWMP) to address stormwater pollution from new development and redevelopment by the private sector with the region. The SWMP describes those activities and programs implemented by the permittees to manage urban runoff to comply with the requirements of the NPDES MS4 permit (Order No. R7-2013-0011) for the Whitewater River Region. One of the major elements of the SWMP is a Storm Water/Urban Runoff Management and Discharge Control Ordinance. Some of the permittees with land use authority, including the City, have adopted such an ordinance as well as ordinances addressing grading and erosion control (collectively, the “Stormwater Ordinance”). The purpose of each Stormwater Ordinance is to prohibit pollutant discharges in the MS4 and to regulate Illicit Connections and Illegal Discharges and non-stormwater discharges to the MS4. The SWMP also contains a list of the minimum required BMPs that must be used for a designated project. Private developers and public agencies must then include these SWMP requirements in their project plans, which are reviewed and approved as part of the development approval process prior to issuing building and grading permits.

Coachella Valley Water District

Water Management Plan

CVWD updated its Coachella Valley Water Management Plan (2010 CVWMP Update) in January 2012 to continue to address the overdraft conditions in the Coachella Valley groundwater basin, and to ensure that CVWD and other water agencies in the Coachella Valley can reliably meet current and future water demands. The CVWD recognizes the need to update the Plan periodically to respond to changing external and internal conditions.

The 2010 Water Management Plan Update is a 35-year blueprint for wise water management and the basis for all of the water district’s efforts to preserve the valley’s groundwater source, and calls for a multifaceted approach including:

- increased water conservation by all types of water users;
- increasing the imported water supply from the Coachella Canal and State Water Project;
- increasing the use of the imported supply and recycled water, instead of groundwater, for irrigation; and
- expanding groundwater replenishment efforts, especially in the east valley.

The 2010 CVWMP Update identifies several water conservation measures with the overall goal to reduce urban water consumption by 20 percent by 2020, and the overall goal to maintain this level of reduction through 2045. These measures include water efficient landscaping and irrigation controls, water efficient plumbing, tiered or seasonal water pricing, public information and education programs,
alternative water supplies, water restrictive municipal development policies, appointing a CVWD conservation coordinator and refining the maximum water allowance budget for landscaped and recreational areas. The 2010 CVWMP Update reduces reliance on groundwater sources by fully utilizing Colorado River water, SWP water and recycled water supplies and implementing more conservation over the long term.

**Urban Water Management Plan**

CVWD completed an update of the Urban Water Management Plan (2010 UWMP) in July 2011, as required under California Water Code, Division 6, Part 2.6. Much of the data used in the 2010 UWMP was based on information in the 2005 CVWMP. However, domestic water demand projections and SWP purchases and reliability were updated in the 2010 UWMP to reflect changes since 2005. It is important to note that projected water demand and supply data, and water conservation programs in the 2010 UWMP, apply only to the CVWD service area, as opposed to the entire Whitewater River Subbasin (WWRSB).

**Coachella Valley Water District Ordinance No. 1302.1**

CVWD mandates efficiency in newly installed landscape irrigation systems via Ordinance 1302, Valley-wide Water Efficient Landscaping Model Ordinance. The purpose of this ordinance is to establish effective water-efficient landscape requirements for newly installed and rehabilitated landscapes. It is also the intent of this ordinance to implement the requirements of the State of California Water Conservation in Landscaping Act. The requirements can be found in the *General Landscape Guidelines and Irrigation System Design Criteria* book.

**Tribal Ordinance Controlling Pollutant Discharges into the Waters of the Reservation**

The purpose of this Tribal Ordinance is to regulate and control all pollutant discharges into the waters of the Reservation. Per this Ordinance, no pollutant discharges are allowed into the waters of the Reservation unless there is prior consultation with the Federal, Tribal, or State agency with jurisdiction under the Clean Water Act and/or the Safe Drinking Water Act, and if required, appropriate permit(s) are obtained.

5.8 Hydrology and Water Quality

**Tribal Land Use Ordinance**

The purpose of the Agua Caliente Band of Cahuilla Indians Land Use Ordinance ("Tribal Land Use Ordinance") is to provide standards and regulations to control land uses on Indian Reservation Lands, maintain and protect the Reservation’s unique natural and cultural resources, and to preserve the natural environment. Article VII, Landscaping Standards, of the Tribe’s Land Use Ordinance promotes the use of native, desert, and other drought tolerant plants to reduce water demand on the Reservation. The landscape management practices identified in this article of the Tribal Land Use Ordinance ensure maximum water efficiency, comprehensive landscaping plans, irrigation plans, plant materials, decorative water features, and limitations on turf material.

**Tribal Ordinance for Floodplain Management**

The purpose of the Floodplain Management Ordinance is to promote the public health, safety, general welfare, and to minimize the public and private losses due to flood conditions in specific areas. The Floodplain Management Ordinance was modeled after the ordinance prepared by the California Department of Water Resources, Division of Flood Management. In order to accomplish the primarily purpose of the Ordinance, the following methods and provisions are included to reduce flood losses:

- Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, and streets and bridges located in areas of special flood hazard;

- Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities.

- Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.

- Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel flood waters.

- Control filling, grading, dredging, and other development which may increase flood damage.

- Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards in other areas.

**City of Rancho Mirage Safety Element**

The City of Rancho Mirage Safety Element addresses natural and manmade environmental hazards that might occur in the City and surrounding areas. It provides information, as well as goals, policies, and
programs to protect the general health, safety, and welfare of the community from seismic, geological, flooding and hydrology, and hazardous and toxic materials hazards. The assessment of and planning for these hazards or constraints is the primary purpose of the Safety Element.

City of Rancho Mirage Municipal Code

The City of Rancho Mirage Municipal Code identifies land use categories, development standards, and other general provisions that ensure consistency between the City’s General Plan and proposed development projects. The following provisions from the City’s Municipal Code related to drainage facilities are relevant to the Project: Title 3, Chapter 3.29 (License Tax on New Construction), Title 7, Chapter 7.03 (Stormwater Management and Discharge Control), and Title 13, Chapter 13.05 (Required on-site Retention).

B. ENVIRONMENTAL IMPACTS

1. Thresholds of Significance

In order to assist in determining whether a project would have a significant effect on the environment, the Tribe finds a project may be deemed to have a significant hydrology and water quality impact if it would:

Threshold 5.8-1: Violate any water quality or waste discharge requirements.

Threshold 5.8-2: Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would 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.

Threshold 5.8-3: 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 a substantial erosion or siltation on- or off-site.

Threshold 5.8-4: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
Threshold 5.8-5: Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Threshold 5.8-6: Otherwise substantially degrade water quality.

Threshold 5.8-7: Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

Threshold 5.8-8: Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

Threshold 5.8-9: Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

Threshold 5.8-10: Be subject to inundation by seiche, tsunami, or mudflow

2. Methodology

Regional off-site analyses of pre- and post-project drainage conditions was included in the evaluation of potential flood hazards associated with flows originating in the Santa Rosa Mountains that flow along the Morongo Wash and along the I-10 to the southeast. Additionally, pre- and post-Project drainage analyses were prepared to address local on-site and off-site drainage flood conditions. The following impact analysis related to flooding is based on information from Tribal, Riverside County, and CVWD flood control requirements. Water quality impacts are evaluated based on proposed stormwater filtration techniques and requirements under the Tribal Ordinance Controlling Pollutant Discharges into the Waters of the Reservation. Impacts to groundwater recharge were evaluated using information contained in the 2010 CVWMP Update and retention basins proposed as part of the Project.

3. Project Design Features

The following Project Design Features (PDFs) incorporated into the Project would reduce the potential hydrology and water quality impacts of the Project. These features were taken into account in the analysis of potential impacts.


**Water Conservation**

**PDF 5.15.1-1**  Application of Low Impact Design (LID) standards to all interior and exterior plumbing features, including low flow toilets, low gallons per minute plumbing fixtures, and tankless water heaters.

**PDF 5.15.1-2**  Utilization of xeriscape planting principles and use of native, drought-tolerant plant materials that require little or no irrigation. Plants with similar water requirements should be grouped together, a technique known as hydro zoning. Decorative water features are to be designed to minimize water consumption and evaporation.

**PDF 5.15.1-3**  Automated, high-efficiency irrigation systems (such as bubbler irrigation and low-angle, low-flow spray heads) shall be installed to reduce water demand and use. Moisture sensors and other similar irrigation technology shall be utilized to ensure that landscaping is watered only as needed.

**PDF 5.15.1-4**  Minimize use of turf except within active outdoor recreation uses.

**PDF 5.15.1-5**  Grey and recycled water infrastructure should be integrated in the landscape design so that grey water, recycled water and/or collected rainwater can be used wherever feasible for landscape irrigation.

**PDF 5.15.1-6**  Reduced width streets (32 feet) that reduce impervious surfaces that generate run-off.

**PDF 5.15.1-7**  Retain and treat all stormwater on-site from up to a 100-year storm event.

**Stormwater Management**

**PDF 5.15.2-4**  Development within the Project Site shall use linear bioswales, landscaped with native or drought-tolerant grasses, and smaller scale bio-retention cells in surface or subsurface storage areas where feasible.

**PDF 5.15.2-5**  Development within the Project Site shall use tree box filters as “mini-retention areas,” where feasible.

**PDF 5.15.2-6**  Development within the Project Site shall use permeable interlocking concrete pavers in parking courts, where feasible.

**PDF 5.15.2-7**  Development within the Project Site shall use pervious concrete and asphalt for other paved areas, where proper maintenance can be achieved.
4. **Project Impacts**

**Violate any water quality or waste discharge requirements**

Water quality standards are attained when designated beneficial uses are achieved and water quality objectives are being met. Beneficial uses include drinking, swimming, industrial, and agricultural water supply, and the support of fresh and saline aquatic habitats. The regulatory program of the Colorado River Basin RWQCB is designed to minimize and control discharges to surface and groundwater within the region, largely through permitting, such that water quality standards are effectively attained.

Pollutants of concern (POC) that are anticipated from the Project implementation include sediment/turbidity, nutrients, organic compounds, oxygen-demanding substances, and bacteria and viruses. Best Management Practices (BMPs) have been designed to address the POCs and will reduce the impacts on water quality to less than significant levels.

Potential negative impacts from Project Site development include an increase of impervious surfaces which will increase the amount of surface runoff generated from the Project Site. Paved areas and streets will collect dust, soil, and other impurities that will then be assimilated into surface runoff during rainfall events. Pollutants such as trash and debris, oil and grease, metals, sediment, pathogens, organic compounds, nutrients, pesticides and oxygen-demanding substances can be expected to be present in surface water runoff once Project development occurs. Without appropriate Project Design Features or Mitigation Measures incorporated into the Project, significant adverse impacts to water quality objectives may be expected to occur.

The Colorado River Basin RWQCB sets water quality standards for all ground and surface waters within its jurisdiction. Water quality standards are defined under the Clean Water Act to include both the beneficial uses of specific water bodies and the levels of water quality that must be met and maintained to protect those uses (water quality objectives). Per the Tribe Ordinance Controlling Pollutant Discharges into the Waters of the Reservation, no pollutant discharges are allowed into the waters of the Reservation unless there is prior consultation with the Federal, Tribal, or State agency with jurisdiction under the Clean Water Act and/or the Safe Drinking Water Act, and if required, appropriate permit(s) are obtained.

**Construction—Active Adult Community and Tribal Planning Areas**

The development of the Project would involve construction activities on the Project Site over the duration of Project development (approximately 20 years). Proposed grading and construction activities would involve earth movement and the use of heavy equipment. Surface elevations range from approximately 350 feet to 250 feet above mean sea level, with the highest points located in the south-
and west-central portions of the Project Site. Peak stormwater runoff could result in short-term sheet erosion within areas of exposed or stockpiled soils. Additionally, the compaction of soils by heavy equipment may reduce the infiltration capacity of soils and increase runoff and erosion potential. Given the above, pollutants such as soil, sediments, and other substances associated with construction activities (e.g., oil, gasoline, grease, and surface litter) could enter the Coachella Valley Stormwater Channel during Project construction.

In 2011, the Tribe received an exemption from NPDES Permit requirements from the USEPA because those portions of the Reservation under Tribal jurisdiction (i.e. areas outside of the Land Use Agreements) do not qualify for maintaining permit coverage. Since the Tribe received an exemption from NPDES Permit requirements, implementation of Mitigation Measure MM 5.8-1 requires each individual project proponent to prepare a project-specific water quality management plan.

In order to reduce the discharge of POCs into receiving waters during construction of the proposed development, the Project proponent will be required to prepare a site-specific SWPPP in accordance with the NPDES Program Individual or General permits authorized under the Clean Water Act for Construction Activities, as identified in PDF 5.5-1 in Section 5.5, Geology and Soils. The General Permit requires a development and implementation of a site-specific SWPPP to identify an effective combination of erosion control and sediment control BMPs to minimize or eliminate the discharge of pollutants into receiving waters. In addition, BMPs for managing sources of non-stormwater discharges and waste are required to be identified in the SWPPP. Examples of construction BMPs include silt fencing, gravel bag berms, fiber rolls, and street sweeping. In addition, the SWPPP is required to identify post-construction BMPs, which are permanent features maintained in perpetuity by the owner, developer, or the building occupant. Furthermore, the City also requires stormwater management and discharge control as identified in Title 7, Chapter 7.03 (Stormwater Management and Discharge Control) and Title 13, Chapter 13.05 (Required on-site Retention).

Through compliance with the SWRCB and USEPA permits, and SWPPP requirements along with adherence to the Project grading concept plan, as shown on Figure 3.0-17, Conceptual Mass Grading Plan, potential impacts to water quality within the Coachella Valley Stormwater Channel during Project construction would be less than significant.

**Operation—Active Adult Community and Tribal Planning Areas**

The development of the Project would increase the amount of impervious surfaces on the Project Site, which would potentially increase runoff within the Project Site. As shown in Figure 3.0-12, Conceptual Drainage Plan, up to 15 retention basins would be needed in the Active Adult Community and up to 11 retention basins would be developed in the Tribal Planning Areas. The design capacity of the retention
basins would retain the 100-year controlling storm event. Based on preliminary calculations, the proposed on-site retention basins would be designed for the 6-hour storm prior to percolation and the 1-hour storm with percolation. Precipitation, nuisance water, or storm-drain flows that fall onto streets south of the center of the Active Adult Community would flow to the low points on the southern end, while flows north of the center of Active Adult Community would flow to the low points in the northern end of the Planning Area. Flows within the Tribal Planning Areas would flow to the northern and eastern ends of each Planning Area. Stormwater runoff from the half-streets abutting the Project Site would be conveyed and retained on-site within the retention basins.

The on-site storm drain improvements would convey runoff to the proposed on-site retention basins. In addition to the retention basins and measures, the Project would implement other Project Design Features that would help remove anticipated pollutants of concern from on-site runoff. Project Design Features PDF 5.15.1-6 and PDF 5.15.1-8 require reduced street widths to minimize surface water runoff and on-site stormwater facilities which retain and treat 100-year storm events. In order to ensure that the on-site flood control facilities are clear of debris, Mitigation Measure MM 5.8-3 and MM 5.8-4 require that each individual project proponent provide a detailed operation and maintenance plan, and that each homeowner’s associations conduct periodic inspections of the flood control facilities.

Overall, the PDFs and BMPs would address the anticipated and expected pollutants of concern from operation of the Project. Degradation of water quality from the Project would be managed in accordance with all applicable federal, State, Tribal, and local water quality rules and regulations in order to effectively minimize the Project’s impact on water quality. Accordingly, impacts would be less than significant.

Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would 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)

Active Adult Community and Tribal Planning Areas

The historical depletion of groundwater in the Coachella Valley has led to a condition known as overdraft, in which the demand for groundwater exceeds the amount of recharge into the groundwater basin over a period of time. Overdraft conditions can result in significant adverse social, environmental and economic impacts, including an increased potential for land subsidence which can result in ground fissuring and damage to buildings and their foundations, sidewalks, and subsurface pipelines.
The 2010 UWMP projects that water demand by all uses in the CVWD service area, except agriculture, will increase to 596,000 acre-feet per year by 2015, and 689,400 acre-feet per year by 2035.\(^{38}\) The total water demand from all users by the 2010 CVWMP Update, including agriculture, was estimated to be 668,000 acre-feet per year in 1999, is projected to increase to 719,100 acre-feet per year by 2020, and may reach 885,400 acre-feet per year by 2045.\(^{39}\)

The historic declining water table in the Palm Springs and Thousand Palms Subareas and the west portion of the Thermal Subarea led to a determination by CVWD and DWA that a management program is required to stabilize water levels and prevent other adverse effects such as water quality degradation and land subsidence within the west portion of the Whitewater River Subbasin. CVWD’s West Whitewater River Subbasin Groundwater Replenishment Program is reducing declining water levels in this subbasin.

Groundwater and surface water are not found to be present on the Project Site recently or historically. According to the Geotechnical Study prepared for the Project Site, investigation of a well located on the west of the Project Site indicated that groundwater depth may be between 160 and 175 below ground surface (bgs). Groundwater at this depth does not pose a constraint to development. Water conditions may vary depending on rainfall and irrigation conditions and surface runoff from elevated portion of the Project Site should be expected.

From 1973 through 2013, CVWD and DWA have replenished the Whitewater River and Mission Creek Subbasins with approximately 2,630,572 acre-feet (2,493,239 acre-feet to Whitewater River Subbasin and 137,333 acre-feet to Mission Creek Subbasin) of exchange deliveries (Colorado River water exchanged for State Water Project water).\(^{40}\) A recharge program is currently operating in the West Whitewater River Subbasin Area of Benefit. The West Valley Whitewater Recharge Facility has a recharge capacity in excess of 300,000 acre-feet per year. Currently, the SWP Exchange supply is expected to provide about 78,000 acre-feet per year for the Whitewater facility on average. Under future conditions, it is possible that average recharge at Whitewater could be limited to the available future supply of about 61,400 acre-feet per year of SWP Exchange, unless it is augmented with other supplies. To reach the 100,000 acre-feet per year recharge goal for the Whitewater facility, CVWD and DWA would need to acquire additional SWP Table A Amounts or other imported water sources. DWA has requested its maximum 2014 Table A State Water Project water allocation (formerly known as

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"entitlement") of 55,750 acre-feet pursuant to its State Water Project Contract for the purpose of groundwater replenishment. CVWD plans to do the same with its maximum 2014 Table A water allocation, which was increased in quantity to 138,350 acre-feet in 2010. Total basic Table A amount for CVWD and DWA is currently 71,000 acre-feet per year.

The Project provides over 234 acres of open space and recreational amenities. These areas represent approximately 40 percent of the Project Site and will provide for groundwater recharge. Retention Basins proposed within the Active Adult Community and the Tribal Planning Areas would serve as multi-functional facilities and may include groundwater recharge.

The Project would begin construction in 2016. Total water demand of the Project is estimated to be 1,780 acre-feet per year, which represents approximately 0.06 percent of the UWMP total demand in 2015 and 0.7 percent of the total anticipated 2010 CVWMP Update’s urban demand in the Coachella Valley through 2035, as discussed in Section 5.15.1. As the remaining development of the higher-density mix of retail, entertainment, office, hotel and residential land uses will begin construction at a later date following the completion of the Active Adult Community component and occur over a longer period of time, the 20-year demand forecasts are considered conservative. Therefore, the Project water demand is within the 2010 CVWMP Update groundwater supply projections.

The 2010 CVWMP Update assumes continued growth in demand and sets forth how that growth will be served. The Project includes Project Design Features which are consistent with the goals of the 2010 CVWMP Update by incorporating the water conservation measures identified in PDF 5.15.1-1 through 5.15.1-5.

Based on the above, the Project would not substantially deplete groundwater supplies and would have a minimal impact on groundwater supplies. The Project would not 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 as it would contribute to local recharge through use of the retention basins and the amount of dedicated open space within the Project Site. Accordingly, impacts would be less than significant.

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 a substantial erosion or siltation on- or off-site

Construction—Active Adult Community and Tribal Planning Areas

One of the hydrological concerns during construction of the Project Site would be potential erosion and sedimentation impacts during site clearing and grading. Erosion and sedimentation caused by construction activities are dependent on climatic and site conditions, as well as the degree of soil disturbance during construction. Site clearing and grading operations, in particular, would have the greatest potential for discharging sediment downstream during storm events.

Grading of the Project Site will be conducted during construction to create residential and commercial pads, roads, basins, etc. Implementation of the Project will result in alteration of the Project Site’s surface and contours as well as introducing additional asphalt, concrete, and other impervious surfaces that do not currently exist on the Project Site. This will result in an alteration of the existing drainage patterns on site.

In its undeveloped condition, no drainage features are present on the Project Site. An on-site drainage system is required to accommodate stormwater flows generated on site and those generated off site that flow onto the Project Site, such as those from tributary areas of the Morongo Watershed. Development of the Project will result in an increase of impervious surfaces within the Project Site, which could generate increased stormwater flows from the Project Site. For this reason, drainage facilities will be constructed as part of the Project.

As illustrated in Figure 3.0-12 (see Section 3.0, Project Description), the conceptual plan utilizes streets, underground storm drains, open channels, and retention basins to collect the on-site and off-site stormwater from the streets adjacent to the Project Site, and convey it through the Project Site and into the retention basins. Project Design Feature PDF 5.15.1-8 will require retention facilities to accommodate the governing 100-year storm event (1 hour event with percolation) and runoff through the Project Site. The retention basins would be a maximum of 5-feet deep with maximum slopes of 5 to 1 unless erosion control methods are implemented. The top of the basin’s elevation would have one foot of freeboard and would be one floor below the lowest building pad. The backbone drainage plan facilities are designed to protect habitable dwelling units from flooding.

As described above, the SWRCB administers the NPDES General Construction Permit, which applies to all projects disturbing areas of 1 acre or more during construction. For those areas of the Project under Tribal Jurisdiction that are exempt from the USEPA Construction General Permit the Project Design

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Features will ensure that appropriate BMPs are implemented during construction. As the Project is constructed over approximately 20 years, each construction contractor would be required to file a notice of intent under these permits.

Through compliance with the Project Design Features which are consistent with SWRCB, USEPA permits, and SWPPP requirements along with adherence to the Project grading concept plan, potential erosion and siltation impacts would be less than significant.

**Operation—Active Adult Community and Tribal Planning Areas**

The operation phase of the Project would contain a number of features to reduce the amount of runoff that would occur within the Project Site, and to limit the amount and rate of surface water flow downstream of the Project Site. The Project would include open space and landscaped areas, pervious concrete and asphalt paving, and the Project-related water quality design features (e.g. retention basins).

The Project would implement other site design features that would help reduce erosion and siltation impacts. PDFs 5.15.2.4 through PDF 5.12.2.7, PDF 5.5.3, and PDF 5.5.4 include the use of bioswales, particularly with native or drought-tolerant grasses, to collect and filter water runoff; the use of stormwater retention/infiltration basins; the use of wind-resistant non vegetative groundcover to allow for sand filtration; and the requirements to stabilize the sand and soil to minimize blowsand prior to and during site construction. Therefore, impacts are considered to be less than significant.

**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**

**Active Adult Community and Tribal Planning Areas**

As discussed previously, drainage across the Project Site is generally from the northeast and southwest following natural drainage courses. The runoff continues to drain into the local storm drain system along Bob Hope Drive and Dinah Shore Drive. No storm drain exists within the undeveloped portion of the Project Site and no natural water bodies or mapped drainage courses are present.

A preliminary Synthetic Unit Hydrograph was used to determine the retention volume needed to accept 100 percent of the stormwater runoff of the 100-year flood level event. The 1-hour event would produce 1.35 inches of rain and is considered the governing 100-year flood level event. The Active Adult Community would produce 40.98 acre-feet of stormwater run-off and the Tribal Planning Areas would
produce 51.18 acre-feet of stormwater run-off that would need to be retained. The overall Project Site would generate 92.16 acre-feet of stormwater runoff during the 100-year flood level event that would need to be retained.

As discussed in Section 3.0, Project Description, the Active Adult Community will be designed with 15 retention basins and the Tribal Planning Areas will be designed with 11 retention basins within the Planning Areas. The retention basins would be a maximum of 5-feet deep with maximum slopes of 5 to 1 unless erosion control methods are implemented. The top of the basin’s elevation would have one foot of freeboard and would be one floor below the lowest building pad. The retention basin system will be designed to accommodate the 100-year stormwater runoff event during the 100-year flood event. Since the preliminary analyses indicate that the stormwater drainage plan would not result in on-site or off-site flooding, impacts would be less than significant.

**Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff**

Initial analyses indicate that the proposed on-site stormwater conveyance system would not result in on-site flooding because the system incorporates existing drainage characteristics and would comply with Tribal, City, CVWD, and/or Riverside and County requirements for management of 100-year storm flows. As the preliminary analyses indicate that the stormwater drainage plan would not result in on-site flooding and more detailed studies will be required as the proposed Project is built out, impacts would be less than significant. As described under impact discussion above, the Project would not provide substantial sources of polluted runoff. Consequently, impacts related to water quality would be less than significant.

**Otherwise substantially degrade water quality**

Please refer to the impact analysis under “violate water discharge requirements” above, for a discussion of water quality impacts.

In order to reduce the discharge of expected pollutants, such as sediment into receiving waters during construction of the proposed development, the project proponent will be required to prepare a site-specific SWPPP consistent with Tribal requirements and the SWRCB General Permit for Construction Activities as identified in PDF 5.5-3. The PDF requires development and implementation of a site-specific SWPPP to identify an effective combination of erosion control and sediment control BMPs to minimize or eliminate the discharge of pollutants into receiving waters. In addition, BMPs for managing sources of non-stormwater discharges and waste are required to be identified in the SWPPP.
In order to reduce the discharge of expected pollutants related to post-construction development of this type (such as oil, grease, and trash) into receiving waters following development, individual project proponents located within the Project Site will be required to be in compliance with the Tribe’s Ordinance for discharges into receiving waters of the Reservation. Project design would comply with all NPDES permit requirements. Consequently, impacts to water quality are considered less than significant.

**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**

**Active Adult Community and Tribal Planning Areas**

According to the FEMA FIRM maps No. 06065C1585G and No. 06065C1595G, effective since August 28, 2008, the Project Site is not in a designated 100-year flood hazard area. The nearest 100-year flood zone is located approximately 0.5 miles north of the I-10, and is designated as AO (100-year risk of flooding one to two feet deep). However, a small portion of the northeast portion of the Project Site is within the floodplain limits of the Morongo Wash, as shown in Figure 5.8-1. Further discussion related to the placement of structures within this floodplain is discussed below. As shown in Figure 3.0-3 Conceptual Land Use Plan, proposed residential dwelling units would be located in the central, western, and southern portions of the Project Site. The locations of these units would be located outside of the 100-year floodplain identified by the CVWD. Therefore, the Project would not place housing within a 100-year flood hazard area and, as such, impacts would be considered less than significant.

**Place within a 100-year flood hazard area structures, which would impede or redirect flood flows**

**Active Adult Community**

According the FEMA FIRM maps and Figure 5.8-1, which was developed by CVWD, the Active Adult Community is located outside of an identified existing 100-year flood hazard area. Therefore, structures within the Active Adult Community would not impede or redirect 100-year flood flows. Accordingly, impacts would be less than significant.

**Tribal Planning Areas**

Planning Area 3 is located within the northeast portion of the Project Site and will be developed with community retail uses. According to the FEMA FIRM maps, which include the Project Site, the Tribal.

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Planning Areas would be located outside of a 100-year flood hazard area. However, CVWD has developed more localized flood models which indicate that the northeast portion of the Project Site is located within a 100-year flood hazard area, as shown in Figure 5.8-1. The existing flood flows are projected to travel southeasterly along the I-10 with a floodplain width ranging from 100 to 1,500 feet. The projected depth of flow is approximately 0 to 10 feet at the northeasterly portion of the Project Site.

However, the Project includes a drainage master plan designed to convey flows without substantial modification to existing off- and on-site drainage conditions. Off-site flows from the half streets adjacent to the Project Site would be collected at natural concentration points along the northeastern boundary of the Project Site and within the southern portion of the site and conveyed via engineered channels that follow existing drainage patterns and CVWD facilities, as required by Mitigation Measure MM 5.8-2. The proposed drainage system is also designed to adequately detain and convey 100-year storm flows in accordance with Tribal, City, CVWD, and/or Riverside County requirements. As stormwater would be conveyed within the proposed drainage system to the Coachella Valley Storm Water Canal and would prevent on- and off-site flooding, proposed structures would not impede or redirect flood flows. Accordingly, impacts would be less than significant.

**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**

**Active Adult Community and Tribal Planning Areas**

According to the FEMA FIRM maps No. 06065C1585G and No. 06065C1595G, effective since August 28, 2008, the Project Site is not in a designated 100-year flood hazard area.

According to the Riverside County General Plan, the Project Site is not located within a levee or dam inundation zone. Therefore, the Project would not expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of the failure of a levee or dam. Accordingly, impacts would be less than significant.

**Be subject to inundation by seiche, tsunami, or mudflow**

**Active Adult Community and Tribal Planning Areas**

The San Andreas Fault system is located approximately 5 miles north of the Project Site. Due to the proximity to the San Andreas Fault, the area is seismically active. The nearest large body of water that

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44 Riverside County Integrated Project, Figure S-10, “Dam Failure Inundation Zones” (2003).
would generate a seiche is Lake Cahuilla approximately 15 miles southeast of the Project Site. While it is possible that a large earthquake could result in a seiche at Lake Cahuilla, the likelihood of such an event is very low. Therefore, the risk that the Project Site would be inundated by a seiche, is deemed less than significant.

The Project Site is not in a coastal area, and as such, the Project Site would not be inundated by a tsunami. The Project Site is located within the central portion of the Coachella Valley floor. The topographically surrounding the Project Site is generally level with elevation changes less than one percent. Therefore, the likelihood that a mudflow would inundate the Project Site is very low. Accordingly, no significant impacts to the Project from inundation by seiche, tsunami, or mudflow would occur.

5. Cumulative Impacts

The cumulative impact analysis in this Draft EIS considers related development projects in the area. In summary, the related projects include, but are not limited to, the construction of the Pelagic Residential project, the Rancho Mirage Rehab Hospital, development of Section 13 to the north, and Section 19 to the east.

The Colorado River Basin RWQCB has issued a MS4 permit for stormwater discharges. The County, CVWD and other co-permittees have prepared a stormwater management program addressing requirements for meeting this MS4 permit. The County reviews all plans and developments for compliance with existing ordinances (e.g., grading ordinance) and stormwater management program requirements. The Tribal Ordinance Controlling Pollutant Discharges into the Waters of the Reservation regulates and controls all pollutant discharges into waters of the Reservation. Per this Ordinance, no pollutant discharges are allowed into the waters of the Reservation unless there is prior consultation with the Federal, Tribal, or State agency with jurisdiction under the Clean Water Act and/or the Safe Drinking Water Act, and if required, appropriate permit(s) are obtained.

With regard to water quality, the related projects would be required to comply with the NPDES General Construction Permit, including the implementation of a site-specific SWPPP, to prevent polluted runoff from entering local stormwater drainage systems during construction activities. Additionally, each related project would be subject to NPDES requirements after buildout and applicable municipal code requirements such as Stormwater Drainage System Protection Regulations, of the Riverside County Municipal Code. Related projects located on Reservation land, for areas outside of Land Use

45 Riverside County, Municipal Code, Section 13.12, Stormwater Drainage System Protection Regulations.
Agreements, would not be subject to NPDES permit requirements as the Tribe received an exemption from the USEPA in 2011. However, these related projects would be subject to the Tribes Ordinance Controlling Pollutant Discharges into Waters of the Reservation which does not permit pollutant discharges from construction activities to enter into receiving waters. As each related project would be required to comply with NPDES requirements and local regulations designed to prevent polluted runoff from entering local storm drain systems and receiving water bodies during construction and after buildout, the cumulative impact to water quality would be less than significant. Further, as compliance with NPDES, local municipal code requirements, and Tribe requirements would prevent substantial erosion and siltation, the cumulative impact related to erosion and siltation would also be less than significant.

With regard to flooding and storm drain capacity, the related projects would be required to adequately convey stormwater runoff such that flooding does not occur. Projects within Riverside County are subject to the Riverside County Municipal Code, which includes several regulations pertaining to flood control facilities within new development projects. These regulations require that proposed drainage facilities be designed to convey flows associated with a 100-year storm event. Similarly, the Project is designed to convey flows associated with a 100-year event. Compliance by the related projects with applicable municipal code requirements, Tribe Building and Safety Code, CVWD regulations, and California Drainage Law would result in less than significant cumulative impacts.

Section 5.15.1 includes a detailed analysis of the water demand associated with the related projects and the effect on groundwater supply and recharge. As discussed, the project 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.

Groundwater supply and aquifer overdraft are currently being assessed and management plans implemented by CVWD to minimize impacts with increased development on groundwater supplies. Over the next 20 years, groundwater extraction is expected to decrease slightly as groundwater basin management activities are executed and sustainable levels of pumping are achieved. Increased future demands are expected to be met with imported water from the Colorado River and State Water Project, and groundwater management activities are expected to maintain groundwater levels and safe yields. These groundwater management activities will ensure that groundwater supplies are not depleted or degraded. Therefore, the cumulative impacts would be less than significant.

46 Riverside County, Municipal Code, Section 16.36.100, Tract Drainage.
Development projects, including commercial, industrial, and residential, individually and cumulatively will create more impervious surfaces thus reducing the total groundwater recharge area. However, projects located within the local watershed also have the possibility of adding to the Indio groundwater subbasin through the addition of imported and/or recycled water. The water used for irrigation could offset the difference in the reduction of groundwater recharge area to rainfall-related recharge that occurs today.

As discussed above, while it is possible that a large earthquake could result in a seiche at Lake Cahuilla, the likelihood of such an event is very low. Cumulative impacts related to tsunamis, seiches, and mudflows would be less than significant.

With regard to the failure of a levee or a dam, none of the related projects is proposed within an inundation zone. According to the Riverside County General Plan, none of the related project sites within Riverside County is located within a levee or dam inundation zone. Accordingly, the cumulative impact would be less than significant.

C. MITIGATION MEASURES

In addition to the PDFs identified in Section B.3 above, the following Mitigation Measures would reduce hydrology and water quality impacts:

**Construction**

**MM 5.8-1** Prior to issuance of a final grading permit for each individual project proponent, a project-specific water quality management plan (WQMP) shall be submitted to the appropriate jurisdiction for review and approval.

**MM 5.8-2** Prior to the issuance of grading permits for development within Tribal Planning Area 3; a detailed hydrology study shall be prepared and submitted to the Tribal Engineer and/or CVWD for review and approval. This study shall evaluate the potential flows from the Morongo Watershed and will identify facilities to be constructed to collect, route and discharge flows in a manner compatible with pre-project/existing conditions across the Project Site. At the completion of construction of the flood control facilities, submit “as-built” topography, construction drawings and engineering analysis for CVWD review to verify that the design capacity is adequate to meet a performance standard requiring the maintenance of pre-project condition flows exiting the Project Site.

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47 Riverside County Integrated Project, Figure S-10, “Dam Failure Inundation Zones,” (2003).
Operation

**MM 5.8-3** Prior to final grading, individual project proponents shall submit a detailed operation and maintenance plan to the appropriate jurisdiction and CVWD for review and approval of the as-built project conditions that satisfies the required performance standard set forth in **MM 5.8-2**.

**MM 5.8-4** Periodic inspection of the conditions of the open channels, retention basins, and storm drains will need to be performed year round, and after significant precipitation events will be required to be performed by each homeowner association (HOA). Annual inspection reports shall be prepared by each HOA, and submitted to and filed with the Tribe, City and/or CVWD by June 30th each year calendar year.

**D. LEVEL OF SIGNIFICANCE AFTER MITIGATION**

Project Design Features PDF 5.5-3 through PDF 5.5-5 in Section 5.5, Geology and Soils; PDF 5.15.1 through PDF 5.15.1-7 in Section 5.15.1, Utilities and Service Systems: Water Service; PDF 5.15.2-4 through PDF 5.15.2-7 in Section 5.15.2 Utilities and Service Systems: Sewer; and Mitigation Measures MM 5.8-1 through MM 5.8-4 would ensure that Project-level impacts on surface water, hydrology, and water quality would be less than significant. Also, compliance with existing regulations and standard conditions of approval identified above would reduce potential impacts associated with hydrology and water quality to a less than significant level. Therefore, no significant unavoidable adverse impacts relating to hydrology and water quality would result on a Project-specific or cumulative basis.