This section describes the regulatory setting, regional hydrology and water quality impacts that are likely to result from Project implementation, and includes measures to reduce potential impacts related to stormwater drainage, flooding and water quality. This section is based in part on the following documents, reports and studies:

- *Rancho Cordova General Plan* (City of Rancho Cordova, Adopted June 26, 2006);
- *Rancho Cordova General Plan Draft Environmental Impact Report* (City of Rancho Cordova, March 2006);
- Sacramento County Water Agency 2015 Urban Water Management Plan (Brown Caldwell, 2016);
- Sunrise Douglas Community Plan/Sun Ridge Specific Plan Long-Term Water Supply Plan Revised Draft EIR (AECOM, January 2011);
- Sunrise Douglas Community Plan/Sun Ridge Specific Plan Long-Term Water Supply Plan Final EIR (AECOM, October 2011);
- Sacramento County Water Agency 2015 Urban Water Management Plan (Brown & Caldwell, June 2016);
- The Ranch Master Drainage Study [Third Submittal] (Watermark Engineering, April 30, 2019); and
- Water Supply Assessment for The Ranch at Sunridge (Sacramento County Water Agency, 2011).

A comment was received during the public review period for the Notice of Preparation regarding this topic from the Central Valley Regional Water Quality Control Board (RWQCB, July 2018). This comment is addressed within this section.

3.8.1 ENVIRONMENTAL SETTING

REGIONAL HYDROLOGY

The Project site is located in the City of Rancho Cordova, within Sacramento County near the center of the Sacramento Valley, approximately 16 miles southeast of the confluence of the American and Sacramento Rivers. The Sacramento Valley is bordered by the Coast Ranges and Delta on the west and the foothills of the Sierra Nevada to the east. Water resources in this region include rivers, streams, sloughs, marshes, wetlands, channels, harbors, and underground aquifers. The topography is generally flat, and is drained by the Sacramento River and the Yolo Bypass, which is part of the Sacramento River Flood Control Project.

Climate

Climate in the Sacramento Valley is characterized by warm, dry summers with an almost complete absence of rain, and mild winters with relatively light rains. Periods of dense and persistent low-level fog that are most prevalent between storms are characteristic of Sacramento Valley winter weather. The average winter temperature is a moderate 49 degrees Fahrenheit (°F). Most precipitation in the area results from air masses that move in from the Pacific Ocean from the west

or northwest during the winter rainy season (November to April). During the summer, daily temperatures range from 50°F to more than 100°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes that keep the coastal regions moderate in temperature.

Watersheds

A watershed is a region that is bound by a divide that drains to a common watercourse or body of water. Watersheds serve an important biological function, oftentimes supporting an abundance of aquatic and terrestrial wildlife including special-status species and anadromous and native local fisheries. Watersheds provide conditions necessary for riparian habitat.

The State of California uses a hierarchical naming and numbering convention to define watershed areas for management purposes. This means that boundaries are defined according to size and topography, with multiple sub-watersheds within larger watersheds. Table 3.8-1 shows the primary watershed classification levels used by the State. The second column indicates the approximate size that a watershed area may be within a particular classification level, although variation in size is common.

TABLE 3.8-1: STATE OF CALIFORNIA WATERSHED HIERARCHY NAMING CONVENTION

WATERSHED LEVEL	*APPROXIMATE SQUARE MILES (ACRES)*	*DESCRIPTION*
Hydrologic Region (HR)	12,735 (8,150,000)	Defined by large-scale topographic and geologic considerations. The State of California is divided into ten HRs.
Hydrologic Unit (HU)	672 (430,000)	Defined by surface drainage; may include a major river watershed, groundwater basin, or closed drainage, among others.
Hydrologic Area (HA)	244 (156,000)	Major subdivisions of hydrologic units, such as by major tributaries, groundwater attributes, or stream components.
Hydrologic Sub-Area (HSA)	195 (125,000)	A major segment of an HA with significant geographical characteristics or hydrological homogeneity.

SOURCE: CALIFORNIA DEPARTMENT OF WATER RESOURCES, 2012.

HYDROLOGIC REGION

The Project site is located in the Sacramento River Hydrologic Region, which covers approximately 17.4 million acres (27,200 square miles) and all or large portions of Modoc, Siskiyou, Lassen, Shasta, Tehama, Glenn, Plumas, Butte, Colusa, Sutter, Yuba, Sierra, Nevada, Placer, Sacramento, El Dorado, Yolo, Solano, Lake, and Napa counties. Small areas of Alpine and Amador counties are also within the region. Geographically, the region extends south from the Modoc Plateau and Cascade Range at the Oregon border, to the Sacramento-San Joaquin Delta. The Sacramento Valley, which forms the core of the region, is bounded to the east by the crest of the Sierra Nevada and southern Cascades and to the west by the crest of the Coast Range and Klamath Mountains. Other significant features include Mount Shasta and Lassen Peak in the southern Cascades, Sutter Buttes in the south-central portion of the valley, and the Sacramento River, which is the longest river

system in the State of California with major tributaries the Pit, Feather, Yuba, Bear and American rivers. Area population centers include Sacramento, Redding, Chico, and Davis.

HYDROLOGIC UNIT

The Project site is located within the Valley-American Hydrologic Unit. For purposes of regional planning, hydrologic units are generally considered to be the appropriate watershed planning level. However, the hydrologic unit level is generally too large in terms of a planning scale for individual projects, and a hydrologic area or hydrologic subarea may be considered more appropriate.

HYDROLOGIC AREA/SUB-AREA

The Project site is located within the Morrison Creek Hydrologic Area and the Franklin Hydrologic Sub-Area. The Morrison Creek Hydrologic Area is a tributary to the Sacramento River. Storm water flows in the area captured in the local storm drains are discharged to the American River. The Franklin Hydrologic Sub-Area is naturally drained by Laguna Creek, a seasonal water tributary to the Sacramento River.

LOCAL SETTING

The 530-acre Project site is bound by existing single-family residential uses and Douglas Road to the north, vacant land and Grant Line Road to the east, vacant land and Kiefer Boulevard to the south, and Rancho Cordova Parkway, single family residential, and vacant land on the west.

The Project site is currently vacant and has been previously used for agricultural uses (cattle grazing). The topography of the site exhibits low relief topography with elevations ranging between 170 and 210 feet above mean sea level (MSL). The slopes throughout the site range from approximately zero to eight percent. The site is characterized by irregular topography, with moderate rolling hills, depressions, and areas of extensive flatlands, with wetlands, vernal pools, and seasonal drainage courses scattered throughout the site. A headwater tributary of Morrison Creek traverses the Project site, entering at the northeast corner and flowing generally to the southwest. A total of 21.53 acres of jurisdictional aquatic resources have been mapped with the Project site, including: 2.92 acres of depressional seasonal wetlands, 15.04 acres of vernal pools, 1.66 acres of riverine seasonal wetlands, 0.06 acres of riverine seasonal wet swales, 1.54 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls.

The Project site is located within the Morrison Creek watershed (see Figure 3.8-1, Watersheds). Land use in the Morrison Creek watershed is a mix of rural and urban uses including grazing, agricultural, low- to high-density residential, industrial, and commercial. The portion of the watershed west of Hedge Road and Waterman Road is predominantly urban. Morrison Creek flows southwestward from near the intersection of White Rock Road and Grant Line Road to Stone Lake west of Interstate 5.

Drainage

The Master Drainage Study prepared by Watermark Engineering in 2019 describes existing drainage conditions for the Project site. Lower Morrison Creek South (LMCS) generally flows from

the northeast corner to the west central property boundary of the Project. The total tributary area of LMCS entering the Project site is 1,120 acres and the 100-year, 12-hour natural flow was estimated to be 678 cfs with a mitigated flow of 662 cfs, which was used to determine water surface elevations along the undisturbed LMCS channel.

The Project site was subdivided into six sheds: three sheds that represent the developed areas north of LMCS; two development areas south of LMCS; and the sixth shed representing the LMCS corridor. Table 3.8-2 provides a summary of the shed areas that includes estimates of natural flow from each shed. The flow estimates are used only as guides for the detention basin analyses.

TABLE 3.8-2: SUMMARY OF EXISTING CONDITIONS SUBSHEDS

SHED ID	*SHED AREA (AC)*	*100-YR PEAK FLOW (CFS)A,B*
West Basin	104.2	100
East Basin	46.0	56
PGE Basin	14.7	23
North-South Basin	50.2	58
South-South Basin	95.7	94
Remainder	218.7	N/A
Total	530	N/A

A: ESTIMATED FROM REGRESSION EQUATION DEVELOPED FOR THE SUNCREEK. SEE MODELING SECTION OF MASTER DRAINAGE STUDY IN APPENDIX J.1 FOR DETAILS.

B: CFS: CUBIC FEET PER SECOND

SOURCE: WATERMARK ENGINEERING, 2019

Stormwater Quality

Potential hazards to surface water quality include the following nonpoint pollution sources: high turbidity from sediment resulting from erosion of improperly graded construction projects, concentration of nitrates and dissolved solids from agriculture or surfacing septic tank failures, viruses, bacteria, and nutrients from pet waste and failing septic systems, oil, grease, and toxic chemicals from motor vehicles, heavy metals from roof shingles, motor vehicles, and other sources, contaminated street, lawn and impervious area run-off from urban areas, and warm water drainage discharges into cold water streams.

A critical period for surface water quality is following a rainstorm which produces significant amounts of drainage runoff into streams with low flows, resulting in poor dilution of contaminants and elevated levels in the low flowing streams. Such conditions are most frequent during the fall at the beginning of the rainy season when stream flows are near their lowest annual levels and contaminants have accumulated on impervious surfaces over the drier summer months. Besides greases, oils, pesticides, litter, and organic matter associated with such runoff, heavy metals such as copper, zinc, and cadmium can cause considerable harm to aquatic organisms when introduced to streams in low flow conditions.

Urban stormwater runoff was managed as a non-point discharge (a source not readily identifiable) under the Federal Water Pollution Control Amendments of 1972 (PL 92-500, Section 208) until the mid-1980s. However, since then, the Federal Environmental Protection Agency has continued to

develop policies and permitting which categorize urban runoff as a point source (an identifiable source) subject to National Pollution Discharge Elimination System (NPDES) permits. Rules now affect medium and large urban areas, and further rulemaking is expected as programs are developed to meet requirements of Federal water pollution control laws.

Surface water pollution is also caused by erosion. Excessive and improperly managed grading and vegetation removal associated with urban development, as well as quarrying, logging, and agricultural practices can lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. . In slower moving water bodies these same factors often cause a buildup of sediment, which ultimately reduces the capacity of the water system to percolate and recharge groundwater basins, as well as adversely affects both aquatic resources and flood control efforts.

303(D) IMPAIRED WATER BODIES

Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

The following waterways in or near the City of Rancho Cordova are identified as impaired waterways by the State Water Resources Control Board under Section 303(d) of the Clean Water Act: American River (mercury and unknown toxicity); Elder Creek (chlorpyrifos and diazinon); Morrison Creek (diazinon); and Sacramento River (diazinon, mercury and unknown toxicity).

Chlorpyrifos and diazinon are organophosphorus pesticides used for urban and agricultural pest control, while the source of mercury for the Sacramento and American rivers is associated with legacy mining activities within their watersheds. Morrison Creek has been included in the TMDL Report for Diazinon and Chlorpyrifos Impaired Urban Creeks in Sacramento County (September 2004). The Sacramento River water quality issues with diazinon have been addressed in a TMDL for the Sacramento and Feather Rivers.

WATER RESOURCES

The Sacramento County Water Agency (SCWA) would provide water supplies to the Project through its Zone 40 conjunctive-use water supply system. The Project is identified as a subarea within Zone 40 known as the North Service Area (NSA). In the long term, SCWA anticipates the majority of water demands in the NSA (including the proposed Project) would be met with surface water. However, the year-to-year mix of surface and groundwater varies depending on a large

number of variables and surface water and groundwater supplies would be adjusted as necessary to meet the demands of the NSA as part of its conjunctive use program.[1]

Groundwater Supply

An SCWA water source for the Project area is groundwater from the South American Sub-basin, which is defined by the California Department of Water Resources (DWR) Bulletin 118. According to Bulletin 118, the South American Sub-basin is defined as the area bounded on the west by Interstate 5 and the Sacramento River, on the north by the American River, on the south by the Cosumnes and Mokelumne rivers and on the east by the Sierra Nevada. The Central Basin covers a major portion of this basin.

Groundwater in the Central Basin is generally classified as occurring in a shallow aquifer (Laguna or Modesto Formation) and in a deep aquifer (Mehrten Formation). The Laguna or Modesto Formation consists of older alluvial deposits of loosely to moderately compacted sand, silt, and gravel deposited in alluvial fans. These deposits are moderately permeable and have a thickness of about 100 to 650 feet. The deeper Mehrten Formation is a sequence of fragmented volcanic rocks which crops out in a discontinuous band along the eastern margin of the basin. It is composed of black volcanic sands, stream gravels, silt, and clay inter-bedded with intervals of dense tuff breccia. The sand and gravel intervals are highly permeable and the tuff breccia intervals act as confining layers. The thickness of the Mehrten Formation is between 200 and 1,200 feet. Groundwater is located from 20 to 100 feet below the ground surface depending on when and where the measurement is taken. The base of the potable water portion of the deep aquifer is located approximately 1,400 feet below the ground surface.

Intensive use of groundwater over the past 60 years has resulted in a general lowering of groundwater elevations. Over time, isolated groundwater depressions have grown and coalesced into a single cone of depression that is centered in the southwestern portion of the basin, approximately 15 miles southwest of the Project site. Groundwater level trends through much of the basin have generally declined consistently from the 1950s and 1960s to about 1980 by 20 to 30 feet. From 1980 through 1983, water levels recovered by about 10 feet and remained stable until the beginning of the 1987-1992 drought; however, wells in the vicinity of Rancho Cordova appear to have recovered less than other wells in the basin since 1995 (generally less than 10 feet). From 1995 to 2003 most groundwater levels recovered to levels that were generally higher than levels prior to the 1987 through 1992 drought. Much of this recovery can be attributed to the increased use of surface water in the Central Basin, and the fallowing of previously irrigated agricultural lands transitioning into new urban development areas. In the central portion of the Central Basin, where the Project site is located, groundwater level trends observed in California Department of Water Resources monitoring wells generally vary between 40 feet above to 40 feet below mean sea level over the period of the 1950s through the 2000s.

[1] Revised Draft Environmental Impact Report Sunrise Douglas Community Plan/SunRidge Specific Plan Long-Term Water Supply Plan. January 2011. Page 3-41.

Recharge of the aquifer system occurs along active river and stream channels where extensive sand and gravel deposits exist, particularly along the American, Cosumnes, and Sacramento rivers. Additional recharge occurs along the eastern boundary of Sacramento County at the transition point from the consolidated rocks of the Sierra Nevada to the alluvial-deposited basin sediments. This recharge is classified as subsurface recharge along with underground flow into and out of the basin with adjacent groundwater basins. Other sources of recharge include deep percolation from applied surface water and precipitation.

The estimated long term annual sustainable yield of groundwater from the Central Basin is 273,000 acre-feet per year (AFY). Currently, groundwater extractions are estimated to be 250,000 AFY (excluding remediation).

The determination of the sustainable yield of the Central Basin (273,000 AFY) was negotiated by the Water Forum Groundwater Negotiating Team (GWNT) and involved a complex process that developed the long-term average annual pumping limit of the basin. The long-term average annual pumping limit is described as the hydro-geologic process under which groundwater can be pumped and not exceed average natural recharge over a long-term period of time. Under sustainable conditions, natural recharge is said to be able to make up for variations in the amount of pumping that occurs over the long-term, given wet and dry periods in the hydrologic record.

As a signatory to the Water Form Agreement (WFA), SCWA is committed to adhering to the long-term average sustainable yield of the Central Basin (i.e., 273,000 afy) recommended in the WFA. Geographically, the South American Sub-basin (5-21.65) is similar to the Central Basin boundaries identified in the WFA. While no specific annual groundwater pumping has been defined for SCWA in the Central Basin, SCWA's groundwater pumping from 2011 through 2015 has ranged from a low of 24,652 AFY in 2015 to a high of 34,626 AFY in 2011. In 2018, SCWA produced 21,716 AFY of groundwater for a new low. Since the historic drought, SCWA has been able to take advantage of the Vineyard Surface Water Treatment Plant and the Freeport Regional Water Authority intake facility to produce more surface water for delivery to its customers in accordance with the Water Forum Agreement.

Groundwater Quality

The thickness of the aquifer saturated with freshwater (water with less than 1,000 milligrams per liter dissolved-solids concentration) in the aquifer system varies greatly and depends, for the most part, on the depth to and permeability of the rocks that underlie continental deposits. In the Project vicinity, the base of freshwater generally coincides with the base of continental deposits. The several isolated lenses of saline water that are within the freshwater zone may be evaporation residues or estuarine water that was trapped by subsequent sedimentation. The depth to the base of freshwater is as much as 2,500 feet in some portions of the Sacramento Valley.

Freshwater is available throughout the Central Valley. The concentration of dissolved solids in the groundwater reflects the general character of water in the streams that recharge the aquifer system. Dissolved-solids concentrations in the streams, in turn, are directly related to the type of rocks that form the geologic conditions of the area. Thus, groundwater in the Sacramento Valley has generally lower dissolved-solids concentrations than other sub-regions in the Central Valley. In

general, dissolved-solids concentrations increase as the depth increases in the aquifer system. Therefore, the deeper wells are likely to produce water with larger dissolved solids concentrations than the shallower wells in the aquifer system.

The SCWA 2015 Urban Water Management Plan indicates that the groundwater quality in the South American Sub-basin (5-21.65) is generally good, although iron and manganese is common and there are some occurrences of arsenic and nitrate. Most of SCWA's Zone 40 wells have iron and manganese treatment facilities.

Surface Water

The surface water supplies associated with SCWA's conjunctive use program fall into four categories:

1) Water supplies available through multiple CVP contracts.
2) Water supplies available through State Water Resources Control Board (SWRCB) Permit 21209.
3) Water available through the City of Sacramento for use within the American River Place of Use (POU). It is noted that this supply is not currently available, but is anticipated in the future as part of SCWA's conjunctive use program.
4) Surface water transfers identified in the WSMP.

Water Distribution System

The SCWA water system consists of water treatment plants, pipelines, storage tanks, and wells. The Project would connect to SCWA existing water supply infrastructure located at the intersection of Rancho Cordova Parkway and Chrysanthy Boulevard. New water distribution pipelines and valves would be provided within the Project site, primarily within the roadway rights-of-way, to serve the proposed development.

Water Use

Constraints on SCWA's surface water supplies includes the significant variation of supplies that are available depending on the climate year type. Even though the surface water supplies are not available at a consistent level of use, SCWA has available groundwater supplies to be able to replace the reduction in surface water supplies in dry years. SCWA refers to this potential to use groundwater in addition to its surface water supplies as its conjunctive use program. While groundwater is more consistently available over different climate year types, it has been constrained by groundwater contamination plumes, some naturally occurring contaminants, and the long term need to not exceed the safe yield. Groundwater is considered to be the last priority in meeting water demands, after surface water entitlements and surface water treatment plant capacity area used. The capacity of supply and conveyance facilities is also a constraint on both surface water and groundwater supplies. SCWA has plans to construct additional water supply facilities. In general, water quality does not have a significant impact on SCWA's current and projected water supplies. The SWTP and groundwater treatment plants provide treatment to meet drinking water standards.

The water supply allocation from the CVP supply in 2015 was a historical low. The CVP allocation for the three-year 2013 to 2015 period was also the lowest historical three-year sequence. The CVP allocation for 2013 to 2015, was 100 percent, 75 percent, and 25 percent of the prior three-year average constrained use for each of the years, respectively. The CVP supply represents SCWA's most significant surface water supply source. Even with the low CVP allocation in 2015, the overall water supply was still 90 percent of normal because of the availability of other water supply sources. It is assumed that wholesale water supplies would be fully available as required to meet wholesale water demands.

It is noted that the SCWA's 2015 UWMP accounts for the demand from the proposed Project.

3.8.2 REGULATORY SETTING

There are a number of regulatory agencies whose responsibility includes the oversight of the water resources of the state and nation including the Federal Emergency Management Agency, the US Environmental Protection Agency, the State Water Resources Control Board, and the Regional Water Quality Control Board. The following is an overview of the federal, state and local regulations that may be applicable to projects within the City of Rancho Cordova.

FEDERAL AND STATE

Clean Water Act (CWA)

The Clean Water Act (CWA), initially passed in 1972, regulates the discharge of pollutants into watersheds throughout the nation. The State Water Resources Control Board (SWRCB) is responsible for implementing the Clean Water Act and does so through issuing NPDES permits to cities and counties through regional water quality control boards. Federal regulations allow two permitting options for stormwater discharges (individual permits and general permits). The Central Valley Regional Water Quality Control Board has developed a single region-wide General Permit for Discharges from Municipal Separate Stormwater Systems (MS4s) (Order No. R5-2016-0040) issued pursuant to CWA Section 402 in order to promote greater watershed/drainage shed coordination, water quality measure protections, and program implementation efficiencies throughout the Central Valley Region. The City of Rancho Cordova is regulated under the region-wide general permit through General Order No. R5-2016-0040-008 and NPDES Permit No. CAS0085324.

303(D) IMPAIRED WATER BODIES

Section 303(d) of the federal Clean Water Act requires States to identify waters that do not meet water quality standards or objectives and thus, are considered "impaired." Once listed, Section 303(d) mandates prioritization and development of a Total Maximum Daily Load (TMDL). The TMDL is a tool that establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby the basis for the States to establish water quality-based controls. The purpose of TMDLs is to ensure that beneficial uses are restored and that water quality objectives are achieved.

As noted previously, the following waterways in or near the City of Rancho Cordova are identified as impaired waterways by the State Water Resources Control Board under Section 303(d) of the Clean Water Act: American River (mercury and unknown toxicity); Elder Creek (chlorpyrifos and diazinon); Morrison Creek (diazinon); and Sacramento River (diazinon, mercury and unknown toxicity).

General Order No. R5-2016-0040 includes Attachment G, Specific Provisions for Total Maximum Daily Loads Applicable to Order R5-2016-040, which includes specific permit requirements that have been devised to meet the applicable Water Quality Based Effluent Limitation and attain compliance with the applicable waste load allocation. For each TMDL, Attachment G identifies where the TMDL is applicable, the Permittees that are responsible for implementing specific provisions, any interim compliance requirements, final TMDL compliance requirements, and specific monitoring provisions and assessment requirements.

California Water Code – Porter-Cologne Act

The Federal Clean Water Act places the primary responsibility for the control of surface water pollution and for planning the development and use of water resources with the states, although this does establish certain guidelines for the States to follow in developing their programs and allows the Environmental Protection Agency to withdraw control from states with inadequate implementation mechanisms.

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Division 7 of the California Water Code) (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and each of the RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the Federal Clean Water Act. The Porter-Cologne Act grants the SWRCB and the RWQCBs authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, or oil or petroleum product.

Each RWQCB must formulate and adopt a water quality control plan (Basin Plan) for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include within its regional plan water discharge prohibitions applicable to particular conditions, areas, or types of waste.

National Pollutant Discharge Elimination System (NPDES)

NPDES permits are required for discharges of pollutants to navigable waters of the United States, which includes any discharge to surface waters, including lakes, rivers, streams, bays, the ocean, dry stream beds, wetlands, and storm sewers that are tributary to any surface water body. NPDES

permits are issued under the Federal Clean Water Act, Title IV, Permits and Licenses, Section 402 (33 USC 466 et seq.)

The RWQCB issues these permits in lieu of direct issuance by the Environmental Protection Agency, subject to review and approval by the Environmental Protection Agency Regional Administrator. The terms of these NPDES permits implement pertinent provisions of the Federal Clean Water Act and the Act's implementing regulations, including pre-treatment, sludge management, effluent limitations for specific industries, and anti- degradation. In general, the discharge of pollutants is to be eliminated or reduced as much as practicable so as to achieve the Clean Water Act's goal of "fishable and swimmable" navigable (surface) waters. Technically, all NPDES permits issued by the RWQCB are also Waste Discharge Requirements issued under the authority of the California Water Code.

These NPDES permits regulate discharges from publicly owned treatment works, industrial discharges, stormwater runoff, dewatering operations, and groundwater cleanup discharges. NPDES permits are issued for periods of five years or less, and are therefore to be updated regularly. The rapid and dramatic population and urban growth in the Central Valley Region has caused a significant increase in NPDES permit applications for new waste discharges. To expedite the permit issuance process, the RWQCB has adopted several general NPDES permits, each of which regulates numerous discharges of similar types of wastes. Stormwater discharges from industrial and construction activities in the Central Valley Region can be covered under these general permits, which are administered jointly by the SWRCB and RWQCB.

Water Quality Control Plan for the Central Valley Region

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The term "water quality standards," as used in the Federal Clean Water Act, includes both the beneficial uses of specific water bodies and the levels of quality that must be met and maintained to protect those uses. The Basin Plan includes an implementation plan describing the actions by the RWQCB and others that are necessary to achieve and maintain the water quality standards.

The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where known. For water bodies with quality below the levels necessary to allow all the beneficial uses of the water to be met, plans for improving water quality are included. The Basin Plan reflects, incorporates, and implements applicable portions of a number of national and statewide water quality plans and policies, including the California Water Code and the Clean Water Act.

LOCAL

Central Sacramento County Groundwater Management Plan (CSCGMP)

The Central Sacramento County Groundwater Management Plan (CSCGMP) was completed in 2006 by Central Sacramento County Groundwater Basin stakeholders, in coordination with the SCWA, to establish a framework for maintaining a sustainable groundwater resource for the various users overlying the basin in Sacramento County between the American and Cosumnes Rivers. The CSCGMP assists overlying water users in maintaining a safe, sustainable, and high quality groundwater resource within a given groundwater basin. The five basin management objectives that have been proposed for the Central Basin are listed below. Each objective focuses on managing and monitoring the basin to benefit all groundwater users in the basin and are intended to be specific enough to result in numerical criteria for the basin, but also able to be modified or adapted to new information on groundwater basin behavior over time:

- Maintain the long-term average groundwater extraction rate at or below 273,000 AFY.
- Maintain specific groundwater elevations within all areas of the basin consistent with the Water Forum.
- Protect against any potential inelastic land surface subsidence by limiting subsidence to no more than 0.007 feet per 1 foot of drawdown in the groundwater basin.
- Protect against any adverse impacts to surface water flows in the American, Cosumnes, and Sacramento rivers.
- Water quality objectives for several constituents of concern:
    - Maintain total dissolved solids (TDS) concentration of less than 1,000 milligrams per liter (mg/L);
    - Maintain nitrate (NO_3) concentration of less than 45 mg/L; and
    - Monitor volatile organic compounds (VOC) migration and consider any measurable trace of VOC in private or public wells as significant.

Sacramento Stormwater Quality Partnership (SSQP)

The permittees of the NPDES Municipal Stormwater Permit, i.e. Sacramento County and the cities of Rancho Cordova, Sacramento, Citrus Heights, Elk Grove, Galt, and Folsom, have joined together to form the SSQP. The SSQP is a collaborative partnership that protects and improves water quality in local waterways for the benefit of the community and the environment. The purpose of the SSQP is to:

- Educate and inform the public about urban runoff pollution;
- Encourage public participation in community and clean-up events;
- Work with industries and businesses to encourage pollution prevention;
- Require construction activities to reduce erosion and pollution; and
- Require developing projects to include pollution controls that will continue to operate after construction is complete.

The permittees cooperatively participate in decision-making and goal-setting for the monitoring program, are involved in consultant selection and review, and comment on compliance reports and other work products. Annual Reports are produced that describe the activities conducted to comply with the NPDES permit.

The stormwater pollution prevention efforts needed to satisfy the NPDES permit (Order R5-Order R5-2016-0040) requirements are implemented by the SSQP through its Stormwater Quality Improvement Plan (SQIP), either jointly or by the individual permittees. The major categories of SQIP activities, conducted jointly by the SSQP, are:

- program management – including legal authority and funding, inter- and intra-agency coordination, effectiveness assessment;
- target pollutant program (including implementation of plans to target mercury and pesticides);
- monitoring program to satisfy monitoring requirements specified in the monitoring and reporting program (MRP) portion of the NPDES permit;
- planning and new development standards such as Hydromodification and LID standards;
- special studies; and
- regional public outreach.

Stormwater Quality Design Manual for Sacramento Region

The Stormwater Quality Design Manual for the Sacramento Region provides locally-adapted information for design and selection of multiple categories of stormwater quality control measures: source control, hydromodification control, treatment control, and low impact development measures. The 2018 edition of the Design Manual is based on the *2007 Stormwater Quality Design Manual for the Sacramento and South Placer Regions*, but has been revised to incorporate hydromodification management and low impact development design standards.

This Stormwater Quality Design Manual for the Sacramento Region (manual) outlines planning tools and requirements to reduce urban runoff pollution to the maximum extent practicable (MEP) from new development and redevelopment projects. The manual is primarily intended for people involved in the design or review/approval of development projects. Chapter 3 of the Manual outlines steps to select and design stormwater quality features in order to effectively incorporate stormwater management into site design and satisfy the requirements of the permitting agencies in Sacramento County

City of Rancho Cordova Municipal Code

Chapter 16.44 of the City's Municipal Code outlines the Land and Grading Erosion Control Ordinance. The purpose of this chapter is to minimize damage to surrounding properties and public rights-of-way, the degradation of the water quality of watercourses, and the disruption of natural or city-authorized drainage flows caused by the activities of clearing and grubbing, grading, filling and excavating of land, and sediment and pollutant runoff from other construction-related activities, and to comply with the provisions of the City's NPDES permit No. CAS0085324, issued by the RWQCB.

These goals will be achieved by establishing administrative procedures, minimum standards of review, and implementation and enforcement procedures for controlling erosion, sedimentation and other pollutant runoff, including construction debris and hazardous substances used on construction sites, and the disruption of existing drainage and related environmental damage caused by the aforementioned activities.

Rancho Cordova General Plan

The Rancho Cordova General Plan contains the following goals and policies that are relevant to hydrology and water quality:

NATURAL RESOURCES ELEMENT

Goal NR.3: Preserve and maintain creek corridors and wetland preserve with useable buffer zones throughout the new development areas as feasible.

Policy NR.3.1: Coordinate with property owners and local interest groups, such as the Sacramento Urban Creeks Council, to restore, enhance, and preserve creeks in Rancho Cordova.

Policy NR.3.2: In general, the City will encourage the preservation of existing location, topography, and meandering alignment of natural creeks. The modification, re-creation and realignment of creek corridors shall recreate the character of the natural creek corridor to the extent feasible, appropriate and consistent with other City policies. Channelization and the use of concrete within creek corridors shall be discouraged, but is not prohibited.

Policy NR.3.3: Encourage the creation of secondary flood control channels where the existing channel supports extensive riparian vegetation.

Policy NR.3.4: Encourage projects that contain wetland preserves or creeks, or are located adjacent to wetland preserves or creeks, to be designed for visibility and, as appropriate, access.

Goal NR.5: Protect the quantity and quality of the City's water resources.

Policy NR.5.1: Promote water conservation within existing and future urban uses.

Policy NR.5.2: Encourage the use of treated wastewater to irrigate parks, golf courses, and landscaping.

Policy NR.5.3: Protect surface and ground water from major sources of pollution, including hazardous materials contamination and urban runoff.

Policy NR.5.4: Prevent contamination of the groundwater table and surface water, and remedy existing contamination to the extent practicable.

Policy NR.5.5: Minimize erosion to stream channels resulting from new development in urban areas consistent with State law.

Policy NR.5.6: Incorporate Storm Water, Urban Runoff, and Wetland Mosquito Management Guidelines and Best Management Practices into the design of water retention structures, drainage ditches, swales, and the construction of mitigated wetlands in order to reduce the potential for mosquito-borne disease transmission.

Policy NR.5.7: Continue to cooperate and participate with the County, other cities, and the Regional Water Quality Control Board regarding compliance with the joint National Pollutant Discharge Elimination System Permit (NPDES No. CAS0085324) or any subsequent permit and support water quality improvement projects in order to maintain compliance with regional, state and federal water quality requirements.

Policy NR.5.8: The City shall require groundwater impact evaluations be conducted for the Grant Line West, Westborough, Aerojet, Glenborough, Mather and Jackson Planning Areas to determine whether urbanization of these areas would adversely impact groundwater remediation activities associated with Mather and Aerojet prior to the approval of large-scale development. Should an adverse impact be determined, a mitigation program shall be developed in consultation with applicable local, state, and federal agencies to ensure remediation activities are not impacted. This may include the provision of land areas for groundwater remediation facilities, installation/extension of necessary infrastructure, or other appropriate measures.

SAFETY ELEMENT

Goal S.2: Reduce the possibility of a flooding or drainage issue causing loss of life or damage to property.

Policy S.2.1: Support and encourage efforts to limit and reduce the potential for community flooding from the Cosumnes or American Rivers.

Policy S.2.2: Manage the risk of flooding by discouraging new development located in an area that is likely to flood.

Policy S.2.3: Discourage the creation of new parcels when the presence of easements, floodplain, marsh, or riparian habitat, and/or other features would leave insufficient land to build and operate structures. This policy shall not apply to open space lots specifically created for dedication to the City or another appropriate party for habitat protection, flood control, drainage, or wetland maintenance.

Policy S.2.4: Ensure that adequate drainage exists for both existing and new development.

INFRASTRUCTURE, SERVICES, AND FINANCE ELEMENT

Goal ISF.2: Ensure the development of quality infrastructure to meet community needs at the time they are needed.

Policy ISF.2.1: Ensure the development of public infrastructure that meets the long-term needs of residents and ensure infrastructure is available at the time such facilities are needed.

3.8.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Consistent with Appendix G of the CEQA Guidelines, the proposed Project will have a significant impact on the environment associated with hydrology and water quality if it will:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - Result in substantial erosion or siltation on- or off-site;
    - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;
    - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    - Impede or redirect flood flows;
- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation; and/or
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

As described in the Initial Study (see Appendix A), impacts associated with flooding, dam inundation, and inundation by seiche, tsunami, or mudflow would be ***less than significant***. These issues will not be addressed further.

IMPACTS AND MITIGATION MEASURES

Impact 3.8-1: The Project may violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during construction (Less than Significant with Mitigation)

Grading, excavation, removal of vegetative cover, and loading activities associated with construction activities could temporarily increase runoff, erosion, and sedimentation. Construction activities also could result in soil compaction and wind erosion effects that could adversely affect soils and reduce the revegetation potential at construction sites and staging areas. Implementation of the Project could result in water quality impacts associated with erosion or

pollution, including the potential to violate water quality standards or waste discharge requirements during construction and, as such, result in a potentially significant impact.

The proposed Project will be required to comply with the City's Land and Grading Erosion Control Ordinance, outlined in Chapter 16.44 of the City's Municipal Code. As required by the Ordinance, projects disturbing 350 cubic yards or more of soil or one or more acres of land shall prepare an erosion and sediment control plan specifying BMPs for erosion and sediment control. This erosion and sediment control plan shall be checked in the field by the City inspector during construction.

Petroleum, when improperly managed and stored, can present health hazards and threaten the environment, particularly navigable waters and adjoining shorelines. To prevent harm to the public and the environment, the federal Oil Pollution Prevention regulation, promulgated under the authority of §311 of the Clean Water Act, sets forth requirements for prevention of, preparedness for, and response to oil discharges at specific non-transportation-related facilities. To contain potential discharges of oil, the regulation requires these facilities to develop and implement Spill Prevention Countermeasure and Control (SPCC) Plans and establishes procedures, methods, and equipment requirements.

As required by the Clean Water Act, each phase of construction will require an approved SWPPP that includes best management practices to mitigate impacts from grading, construction activities, and ensure the preservation of topsoil. The Project proponent or contractor is required to submit the SWPPP with a Notice of Intent (NOI) to the RWQCB to obtain coverage under the State Construction General Permit. The State Water Resources Control Board (SWRCB) is an agency responsible for reviewing the SWPPP with the NOI, prior to issuance coverage under the State Construction General Permit for the discharge of stormwater during construction activities. Mitigation Measure 3.5-1, introduced in Chapter 3.5, Geology and Soils, requires an approved SWPPP that includes best management practices for grading and preservation of topsoil. Mitigation Measure 3.8-1 requires the project to prepare and implement a SPCC to address any releases of hazardous, toxic, or petroleum substances during construction. Implementation of the following mitigation measures would ensure consistency with the regulatory requirements and ensure that the proposed Project would have a ***less than significant*** impact on construction related water quality.

MITIGATION MEASURE(S)

Mitigation Measure 3.5-1*: Prior to any site disturbance, the Project proponent shall submit a Notice of Intent (NOI) and Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB in accordance with the NPDES General Construction Permit requirements. The SWPPP shall be designed to control pollutant discharges utilizing Best Management Practices (BMPs) and technology to reduce erosion and sediments. BMPs may consist of a wide variety of measures taken to reduce pollutants in stormwater runoff from the Project site. Measures shall include temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary revegetation or other ground cover) that will be employed to control erosion from disturbed areas. Final selection of BMPs will be subject to approval by the City of Rancho Cordova and the RWQCB. The SWPPP will be*

kept on site during construction activity and will be made available upon request to representatives of the RWQCB. (Note: This measure is also included in Chapter 3.5.)

Mitigation Measure 3.8-1: *Prior to the commencement of construction or grading activities, the Project proponent shall submit, and obtain approval of, a Spill Prevention Countermeasure and Control Plan (SPCC) to the Sacramento County Environmental Management Department. The SPCC shall specify measures and procedures to minimize the potential for, and effects from, spills of hazardous, toxic, or petroleum substances during all construction activities, and shall meet the requirements specified in the Code of Federal Regulations, title 40, part 112.*

Impact 3.8-2: The Project may violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality during post-construction (Less than Significant with Mitigation)

Operation of the Project, including occupancy of the residential uses and activities associated with the residential, commercial, and parks and recreation uses, would occur once construction has finished and the residents, employees, and guests of the proposed uses are operating on-site. The long-term operations of the proposed residential and commercial uses could result in impacts to surface water quality from urban stormwater runoff. For example, the proposed Project would result in new impervious areas associated with streets, driveways, parking lots, buildings, and landscape areas in the residential and commercial portions and trails, parking lots, and activity areas in the parks and recreation components. Normal activities in these developed areas include the use of various automotive and equipment-related petroleum products (i.e. oil, grease, fuel), building products, household hazardous materials, heavy metals, pesticides, herbicides, and fertilizers and waste associated with the various allowed uses in the residential, commercial, and parks and recreation components. Within urban areas, these pollutants are generally called nonpoint source pollutants. The pollutant levels vary based on factors such as time between storm events, volume of storm event, type of land uses, and density of people.

The Master Drainage Study prepared for the Project describes the proposed drainage and water quality features (Appendix J.1). The northwestern portion of the Project would drain to LMCS and the southeast portion of the Project would drain to both LMCS and Kite Creek. The open space areas would also include detention basins that will provide stormwater management, as described in Chapter 2.0. A basin is the complete facility that will provide the stormwater management, including the permanent pool for water quality, storage for hydromodification and peak flow attenuation, and the outflow facilities. Stormwater management would include capture and treatment of summer irrigation flows, hydromodification of storm runoff, and attenuation of very large storms so that post-project flow rates are equal to or less than existing conditions. The Project includes three basins to manage runoff from the northwest portion of the Project and two basins to manage runoff from the southeast portion of the Project.

- West Basin: This basin is located in Lot H, just south of the tributary shed area and just east of Rancho Cordova Parkway. The outfall from this basin will enter LMCS where it turns south and parallels the parkway in a man-made channel.

- East Basin: This detention basin is located in Lot G, adjacent to LMCS near the middle of the development site. Outfall from this basin will be directly to LMCS or conveyed south and discharged into the creek at the proposed Crysanthy Boulevard crossing.

- PG&E Basin: This basin is located in Lot I and serves a shed area that has been minimized to comply with PG&E constraints for drainage facilities under their high-voltage power lines. The basin would be designed to create and maintain as much infiltration as can be reasonably achieved. An outflow will discharge south or west directly into LMCS.

- North South Basin: The basin, located in Lot J, will be a dry-extended basin with an outflow to LMCS upstream of the Crysanthy crossing.

- South-South Basin: All of the developed area south of LMCS will drain to this linear basin that located in Lot P along the southern boundary of Project site. The permanent pool is at the southeast corner and will drain to Kite Creek. Its outfall will be part of a larger outfall that will also serve SunCreek and will become the new headwaters of Kite Creek.

The storm drains discharging into the wet basins are planned to be below the water level of the permanent pool, which eliminates the need for access control at the outfalls. Manholes just upstream of the basin will include a slide gate so that the deep pipe can be isolated and cleaned as necessary.

With the exception of a major road crossing (Crysanthy Boulevard) and four outflows from the proposed detention basins, LMCS would remain as a meandering channel within an open space corridor. The water quality treatment would be achieved utilizing a variety of low-impact development measures outlined in the City's adopted Stormwater Quality Design Manual for the Sacramento and South Placer Regions, July 2018. Those measures include the incorporation of water quality basins.

While the Drainage Study prepared for the Project identifies several components of the approach to addressing potential pollutants, it does not identify the full range of measures that will be implemented by the Project to ensure that water quality requirements are met. Therefore, the Project has the potential to degrade water quality, including impacts associated with erosion, siltation, or pollution. Therefore, this impact is potentially significant.

The Project would be subject to the Stormwater Quality Design Manual for Sacramento and South Placer Regions, as required by Mitigation Measure 3.8-2. The Project would be subject to the required stormwater quality control measures, including source control, low impact development control, treatment control, trash capture, and hydromodification control. Table 3-3 of the Manual summarizes the various stormwater control measures that are required depending on the project type. With regard to stormwater quality, the Project would be designed to conform with current City and other local standard requirements, as discussed above.

Implementation of the following mitigation measure would reduce potential water quality impacts post-construction to a ***less than significant*** level.

MITIGATION MEASURE(S)

Mitigation Measure 3.8-2*: Before approval of the final subdivision map for all Project phases, a detailed Best Management Practice (BMP) and water quality maintenance plan shall be prepared by a qualified engineer retained by the Project applicant that meets the standards of the City's NPDES Permit (No. CAS00853254) and shall document that stormwater runoff from the Project site is treated per the standards in the Stormwater Quality Design Manual for Sacramento and South Placer Regions. Drafts of the plan shall be submitted to the City of Rancho Cordova for review and approval concurrently with development of tentative subdivision maps for all Project phases. The plan shall finalize the water quality improvements and further detail the structural and nonstructural BMPs proposed for the Project. The plan shall include the elements described below.*

- *A quantitative hydrologic and water quality analysis of proposed conditions incorporating the proposed drainage design features.*
- *Pre-development and post-development calculations demonstrating that the proposed water quality BMPs meet or exceed requirements established by the City of Rancho Cordova and including details regarding the size, geometry, and functional timing of storage and release pursuant to the "Stormwater Quality Design Manual for Sacramento and South Placer Regions."*
- *Source control programs to control water quality pollutants on the Project site, which may include but are limited to recycling, street sweeping, storm drain cleaning, household hazardous waste collection, waste minimization, prevention of spills and illegal dumping, and effective management of public trash collection areas.*
- *A pond management component for the proposed basins that shall include management and maintenance requirements for the design features and BMPs, and responsible parties for maintenance and funding.*
- *Low Impact Development (LID) and Hydromodification control measures shall be integrated into the BMP and water quality maintenance plan. These may include, but are not limited to:*
    - *Bioretention planters;*
    - *surface swales;*
    - *replacement of conventional impervious surfaces with pervious surfaces (e.g., porous pavement, green roofs);*
    - *impervious surfaces disconnection; and*
    - *trees planted to intercept stormwater.*

Impact 3.8-3: The Project would not decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin (Less than Significant with Mitigation)

(*Note: The following discussion is associated with potential impacts of the proposed Project on groundwater as it relates to stormwater infiltration and groundwater recharge. Depletion of groundwater supplies as it relates to water usage is addressed in Chapter 3.14, Utilities.*)

The proposed Project would result in new impervious surfaces and could reduce rainwater infiltration and groundwater recharge. Infiltration rates vary depending on the overlying soil types. In general, sandy soils have higher infiltration rates and can contribute to significant amounts of ground water recharge; clay soils tend to have lower percolation potentials; and impervious surfaces such as pavement significantly reduce infiltration capacity and increase surface water runoff.

According to the U.S. Department of Agriculture NRCS Web Soil Survey (NRCS, 2019), the soils on the Project site are classified as Fiddyment fine sandy loam, Hicksville gravelly loam, Red Bluff-Redding complex, Redding loam, and Redding gravelly loam. The permeability of the on-site soils is moderate.

Table 3.8-3 below identifies the soils in the Project site and the soils infiltration rate. The majority of the Project site has soils all have a hydrologic rating of "D", which is indicative of soils having a very low infiltration rate (very high runoff potential) when thoroughly wet. The remaining soils have a hydrologic rating of "C", which is indicative of soils having a low infiltration rate (high runoff potential).

TABLE 3.8-3: SOILS HYDROLOGIC RATING

DESCRIPTION	*SOURCE MATERIAL*	*RATING*
Fiddyment fine sandy loam, 1-8% slopes	Consolidated sediments of mixed rock sources	D
Hicksville gravelly loam, 0-2% slopes	Alluvium derived from mixed rock sources	C/D
Red Bluff-Redding complex, 0-5% slopes	Old mixed alluvium	C
Redding loam, 2-8% slopes	Alluvium derived from mixed sources	C
Redding gravelly loam, 0-8% slopes, MLRA 17	Alluvium derived from mixed sources	D

SOURCE: NCRS 2018.

The infiltration rate of the soils on the Project site is considered low.

The new impervious surfaces, such as pavement, concrete, and structures that would be built on the Project site, could reduce infiltration capacity, compared to the existing conditions. However, the proposed Project is designed to promote infiltration of groundwater in areas with pervious surface. The proposed drainage infrastructure would include detention basins, greenway swales, and water quality swales, which would provide opportunities for on-site groundwater infiltration. Further, the Project includes approximately 45 acres of open space, park areas, and landscape

areas, and a 199.5-acre wetland preserve. These areas would also provide opportunities for groundwater infiltration.

In addition to the low permeability and infiltration rate associated with soils on the Project site, as required by Mitigation Measure 3.8-2, the Project would be required to comply with the City's NPDES Permit, which includes LID. Further, Mitigation Measure 3.8-2 in this section requires submittal of a detailed BMP and water quality maintenance plan, which would include programs to control water quality pollutants and LID measures. These drainage design requirements aim to in promote stormwater infiltration and improve stormwater quality, among other goals. Therefore, implementation of the Project would have a ***less than significant*** impact to groundwater recharge.

Impact 3.8-4: The Project would not alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion, siltation, surface runoff, flooding, or polluted runoff (Less than Significant)

The Project site would alter the existing drainage pattern of the Project site through grading and development of the areas proposed for residential, commercial, recreation, parks, and other uses associated with the Project, as described in Chapter 2. Development of the proposed Project, when complete, would result in new impervious surfaces and thus could result in an incremental reduction in the amount of natural soil surfaces available for the infiltration of rainfall and runoff, thereby generating additional runoff during storm events. Additional runoff could contribute to increased erosion, siltation, and pollution, an increase in flood potential of natural stream channels, or runoff that could exceed the capacity of the City's drainage system.

However, the increased rate of runoff would be attenuated using on-site and off-site facilities (including detention basins) as discussed in the Master Drainage Plan to ensure that the Project would not result in a significant change in drainage patterns or an increase in flooding potential. As discussed under Impact 3.8-3, the Project would include six basins to address stormwater. The basins have been designed and sized to accommodate stormwater and to ensure that post-Project runoff conditions do not exceed pre-Project conditions.

The West Basin, East Basin, and South-South Basin are designed as wet basins with three components. The first component is a permanent pool, which will address water quality requirements, below the lowest outfall. There will be a storage component, which will include a single orifice and single weir outfall facilities, to meet the NPDES Permit hydromodification standards. The top component of each basin is the storage area needed to store and attenuate events up to the 100-year flood. This component includes an orifice and weir designed to release flows at a rate less than pre-project flows.

The PG&E Basin and the North-South Basin are designed as dry basins that will drain within 48 hours. The basin bottoms will be designed to improve and maintain infiltration, including

enhancements to reduce ponding time and reduce the potential for outflow from summer irrigation runoff.

The Master Drainage Plan modeled each basin for 2-, 5-, 10-, and 25-year storm events and a separate analysis was completed to address 100-year flows using a regression equation to estimate 100-year flows. The Master Drainage Plan identifies potential impacts to upstream, adjacent, and downstream properties associated with the post-Project drainage pattern and runoff conditions. The results are summarized below:

Adjacent to LMCS within Project Site: Within the Project site, the Master Drainage Plan identified impacts along LMCS where there will be encroachment from development. Within the Project site, the maximum changes were +15 cfs and -18 cfs, with maximum water elevation changes of +0.03 and -0.48 feet. In addition to the information modeled in the Master Drainage Plan, Watermark Engineering provided supplemental information which identified that the impacts to the LMCS corridor within the Project site, which is in the Remainder Drainage Shed, would be minor, noting that some encroachment along the existing floodplain, such as the Chrysanthy Boulevard crossing, would result in a slight increase in the water surface elevation. The increase within the Project site would be less than 0.1 feet in all cases and would not have a significant impact.

Off-Site Changes: The Project would not result in significant changes to off-site flooding or drainage conditions. The increase in water levels within the Project site would result in insignificant backwater increases (an upstream increase of 0.02 feet at Section 96+00 which is near the upstream property line) and the increase would be less at the Project's property line. At the downstream end, downstream of Rancho Cordova Parkway, the model results indicate a slight decrease in flow (15 cfs) and a slight decrease of the water level (0.06 ft) for post-Project conditions compared to existing conditions. The Project has two discharge locations, one point located south of Lot H where LMCS exits the Project site and another located along the Project boundary where drainage flows to Kite Creek. Watermark Engineering provided data supplemental to the Master Drainage Plan which describes pre-Project and post-Project flows under 2-, 10-, and 100-Year storm events. As shown in Table 3.8-4, the Project would attenuate storm water flows exiting the Project site under all analyzed conditions from the discharge location where the Project storm waters would flow south to Kite Creek. Flows to LMCS exiting the western boundary of the Project site would increase slightly (1.8%) under 2-Year storm event conditions but would be reduced to less than pre-Project conditions under the more intense 10- and 100-Year storm event conditions.

TABLE 3.8-4: PRE-PROJECT AND POST-PROJECT PEAK FLOW CONDITIONS (2-, 10-, AND 100-YEAR STORM EVENTS)

CONDITION	*2-YEAR*	*10-YEAR*	*100-YEAR*
FLOWS SOUTH TO KITE CREEK (CFS)			
Pre-Project	47	82	118
Post-Project	5	18	50
FLOWS WEST TO LOWER MORRISON CREEK SOUTH AT RANCHO CORDOVA PARKWAY (CFS)			
Pre-Project	274	431	680
Post-Project	279	423	665

SOURCE: WATERMARK ENGINEERING, EMAIL CORRESPONDENCE, 2019.

While the Master Drainage Plan prepared for the Project demonstrates that the basins are adequately sized to address potential flooding and drainage concerns and that off-site flows would not be significantly affected by the Project, it does not identify the full range of measures that will be implemented by the Project to address changes in the drainage pattern and associated erosion, siltation, or polluted runoff. Therefore, this impact is potentially significant.

As discussed in Impact 3.8-1, Mitigation Measure 3.5-1 would require an approved SWPPP that includes best management practices for grading, and preservation of topsoil. Further, the Project would be subject to the City's Land and Grading Erosion Control Ordinance, outlined in Chapter 16.44 of the City's Municipal Code, which requires submittal and implementation of an erosion and sediment control plan. The Project would also be subject to the Stormwater Quality Design Manual for Sacramento and South Placer Regions, as required by Mitigation Measure 3.8-2. The Project would be subject to the required stormwater quality control measures, including source control, low impact development control, treatment control, trash capture, and hydromodification control. Compliance with these standards and regulations would ensure that erosion, siltation, and polluted runoff is minimized such that the Project would not result in substantial erosion, siltation, surface runoff, flooding, or polluted runoff and that the impact would be ***less than significant***.

Impact 3.8-5: The Project may conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan (Less than Significant with Mitigation)

The Water Quality Control Plan for the Central Valley Region and the CSCGMP are the two guiding documents for water quality and sustainable groundwater management in the Project area. Consistency with the two plans are discussed below.

WATER QUALITY CONTROL PLAN FOR THE CENTRAL VALLEY REGION

The Water Quality Control Plan for the Central Valley Region (Basin Plan) includes a summary of beneficial water uses, water quality objectives needed to protect the identified beneficial uses, and implementation measures. The Basin Plan establishes water quality standards for all the ground and surface waters of the region. The RWQCB regulates waste discharges to minimize and control their effects on the quality of the region's ground and surface water. Permits are issued

under a number of programs and authorities. The terms and conditions of these discharge permits are enforced through a variety of technical, administrative, and legal means. Water quality problems in the region are listed in the Basin Plan, along with the causes, where known.

As discussed in Impacts 3.8-1 and 3.8-2, impacts related to water quality during construction and operation would be less-than-significant with implementation of the mitigation measures discussed in this section. The Project would include development of on-site drainage and water quality basins to accommodate post-construction peak stormwater flows and provide for water quality treatment. Additionally, the Project would preserve approximately 199.5 acres as a wetland preserve that would be deeded to a third-party conservation entity. The Project includes approximately 14.8 acres of existing aquatic resources, including 1.85 acres of depressional seasonal wetlands, 9.97 acres of vernal pools, 1.15 acres of riverine seasonal wetlands, 1.53 acres of intermittent drainages, and 0.30 acres of drainage basin outfalls. The Project applicant would incorporate protections for the preservation of wetland resources within the preserve, including preserve fencing, long-term funding and management of the preserve in perpetuity, and protection of the preserve from drainage and runoff generated from development areas through the construction of several detention basins throughout the site; these protections would be required to be consistent with the provisions of the South Sacramento Habitat Conservation Plan requirements for preserve areas. Further, Mitigation Measure 3.8-2 would ensure that the proposed drainage and stormwater control measures reduce pollutant concentrations that will eventually flow to the receiving waters and would ensure that the Project does not conflict with implementation of the Basin Plan.

CENTRAL SACRAMENTO COUNTY GROUNDWATER MANAGEMENT PLAN (CSCGMP)

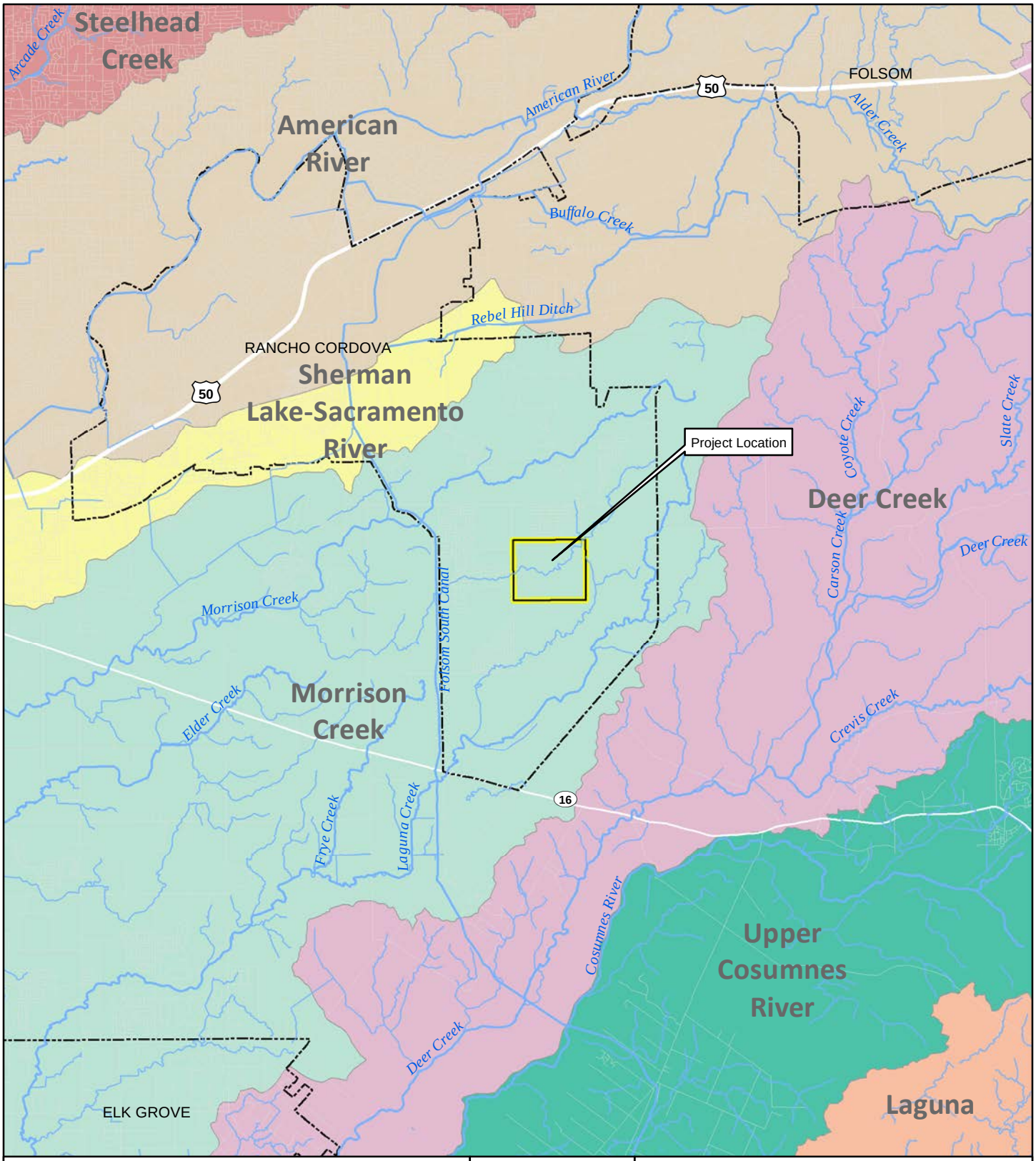
The CSCGMP establishes a framework for maintaining a sustainable groundwater resource for the various users overlying the basin in Sacramento County between the American and Cosumnes Rivers. The CSCGMP assists overlying water users in maintaining a safe, sustainable, and high quality groundwater resource within a given groundwater basin. The five basin management objectives that have been proposed for the Central Basin are listed above in the Regulatory Setting. Each objective focuses on managing and monitoring the basin to benefit all groundwater users in the basin and are intended to be specific enough to result in numerical criteria for the basin, but also able to be modified or adapted to new information on groundwater basin behavior over time.

As discussed in Impact 3.8-3, the Project would not decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. The Project includes preserve areas, open space areas, and park areas which would allow for infiltration of groundwater on-site. Mitigation Measure 3.8-2 requires the Project to address water quality and changes to the drainage pattern through BMPs and LID measures designed to ensure that the Project is consistent with the water quality objectives and hydromodification standards of NPDES No. CAS0085324. The Project would also be subject to the applicable water quality regulations, including but not limited to the City's Land and Grading Erosion Control Ordinance and the Stormwater Quality Design Manual for Sacramento and South Placer Regions. These guiding documents and requirements would ensure that

stormwater quality treatment measures are implemented and maintained throughout the life of the Project.

CONCLUSION

Overall, implementation of the proposed Project and adherence to the requirements of Mitigation Measures 3.5-1, 3.8-1, and 3.8-2 would have a ***less than significant*** impact related to conflicts with the Basin Plan and CSCGMP.



Watershed (HUC 10)

- American River
- Deer Creek
- Laguna
- Morrison Creek
- Sherman Lake-Sacramento River
- Steelhead Creek
- Upper Cosumnes River

Sources: Sacramento County; USGS National Hydrography Dataset; USGS Watershed Boundary Dataset. Map date: July 16, 2018.

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THE RANCH
SACRAMENTO COUNTY, CALIFORNIA

Figure 3.8-1: Watersheds

De Novo Planning Group
A Land Use Planning, Design, and Environmental Firm

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