

## 12. Hydrology and Water Quality

This chapter describes existing hydrology and water quality in the proposed project study area and evaluates the potential impacts on hydrology and water quality from implementing Plan Concept 1 and Plan Concept 2 of the Renewable Placer: Waste Action Plan.

### 12.1 Environmental Setting

The project site is located on gently rolling terrain at the base of the Sierra Nevada foothills. Pre-Western Regional Sanitary Landfill (WRSL) development elevations ranged from approximately 106 feet above mean sea level (AMSL) in the southwestern corner of the site to about 134 feet above AMSL at the center of the site. Currently, the primary topographic feature on the site is the existing WRSL (Figure 9-1). Elevations within the WRSL footprint range from approximately 57 feet AMSL at the lowest point (excavated areas) to approximately 196 feet AMSL at filled areas (Golder 2017). The area surrounding the project site is characterized by open space and agricultural uses (irrigated land and grazing).

The climate at the project site is characterized by dry summers and mild winters (MBI 2015). The mean annual temperature for a climate station near the project site is approximately 60 degrees Fahrenheit (°F) annually, with a record high of 115°F in June 1961 and a record low of 18°F in December 1990. Temperature and precipitation data have been recorded since 1941 at the Sacramento International Airport weather station located approximately 12 miles west of the project site. Precipitation is highly variable in the area. Summers are often completely dry, and there are frequently periods of 4 to 5 months with little or no rain. In the winter, storms from the Pacific Ocean sweep across the coast bringing rain to the valley and mountains. The mean annual rainfall for the site is 17.24 inches measured at the Sacramento International Airport. Most of the rainfall occurs between November and April (MBI 2015).

#### 12.1.1 Methodology

This evaluation of hydrology and water quality is based on the following documents prepared by MBI and SCS Engineers (SCS), plans for the proposed project, compliance with applicable regulations, and other applicable information:

- Final Environmental Impact Report (EIR), Sunset Area Plan/Placer Ranch Specific Plan (Placer County 2019)
- Stormwater Pollution Prevention Plan (SWPPP), Western Placer Waste Management Authority (WPWMA) (MBI 2015)
- Engineering Feasibility Study, Western Regional Sanitary Landfill, Placer County, California (SCS 2019)
- Fourth Quarter and Annual 2019 Monitoring Report, Western Regional Sanitary Landfill, Placer County, California (SCS 2020a)
- Second Quarter 2020 Monitoring Report, Western Regional Sanitary Landfill, Placer County, California (SCS 2020b)
- WPWMA Waste Discharge Requirements (WDRs) Order Number (No.) R5-2007-0047 (WDR Order)(CVRWQCB 2007)

### 12.1.2 Regional Setting

From a regional hydrologic perspective, the project site is located within the Upper Coon-Upper Auburn Watershed Hydrologic Unit Code (HUC) No. 1802017 defined by the U.S. Geological Survey (2020). The project site overlies California HUC No. 12, including the eastern part of the Dutch Ravine-Auburn Ravine Subwatershed No. 180201610102, the western part of the Orchard Creek Subwatershed No. 180201610101, and the northern part of the Pleasant Grove Creek Subwatershed No. 180201610302 as defined by the National Resources Conservation Service (U.S. Department of Agriculture 2020).

An unnamed tributary to Auburn Ravine drains the western part of the project site area to the northwest. Auburn Ravine is northwest of the project site and flows west as part of the Dutch Ravine-Auburn Ravine Subwatershed, joining North Canal in Sutter County, which flows into Natomas Cross Canal and ultimately into the Sacramento River. Under natural conditions, Auburn Ravine functions as an intermittent stream with high winter and spring flows that slow to a trickle or disappear entirely during the summer and fall. Over the past 150 years, the hydrology of Auburn Ravine has been modified to include flows from the City of Auburn's wastewater treatment plant, Pacific Gas & Electric Company's (PG&E's) Wise Powerhouse, and summer input from the Bear, Yuba, and American rivers by the Nevada Irrigation District, Placer County Water Agency (PCWA), and PG&E. These discharges create abnormally high spring and summer flow conditions. Flows range from less than 3 cubic feet per second (cfs) during fall to an estimated 14,000 cfs during 100-year winter storm events. At the end of the irrigation season (October 15), the Wise Powerhouse is shut down for maintenance for 2 to 6 weeks. During this time, flow in Auburn Ravine above Orchard Creek depends almost entirely on discharge from the Auburn wastewater treatment plant (Placer County 2019).

An unnamed tributary to Orchard Creek drains the northern part of the project site area to the northwest. The Orchard Creek Subwatershed is a large tributary watershed that begins 3 miles southeast of Lincoln, California, and joins the Auburn Ravine watershed northwest of the project site area. Roughly 40 percent of the Orchard Creek watershed is covered by urban development. Although the creek would be intermittent under natural conditions, it now flows perennially because of discharges from urban runoff and contributions from the Thunder Valley Casino Resort wastewater treatment plant (Placer County 2019).

An unnamed tributary to University Creek drains the western part of the project site area to the south. University Creek flows west as a tributary to Pleasant Grove Creek. The Pleasant Grove Creek Subwatershed begins southeast of the project site area, near the Whitney Oaks Golf Club, roughly halfway between Rocklin and Lincoln. The creek flows into the Pleasant Grove Creek Canal, which empties into Cross Canal and ultimately into the Sacramento River. The upper (southern and eastern) reaches of the watershed are heavily developed and include parts of the cities of Roseville and Rocklin. Pleasant Grove Creek and its tributary channels were historically intermittent streams that dried in summer; however, many of the channels now have perennial flows from urban runoff, agricultural irrigation return flows, and contributions from the Pleasant Grove Wastewater Treatment Plant. University Creek is a tributary of Pleasant Grove Creek that drains the project site area (Placer County 2019).

The project site is also located in the Region 5 Sacramento Hydrologic Basin, Valley-American Hydrologic Unit No. 519.00, Coon-American Hydrologic Area No. 519.20, and Pleasant Grove Hydrologic Subarea No. 519.22 as designated by the Central Valley Regional Water Quality Control Board (CVRWQCB) (2018). Water bodies within the basins of CVRWQCB Region 5, including those within the Sacramento Hydrologic Basin, that do not have beneficial uses specifically designated in Table 2-1 of the Basin Plan (CVRWQCB 2018) are assigned municipal and domestic water supply designations.

The project site is also located in Sacramento Valley Groundwater Basin No. 5-021 and North American Subbasin No. 5-021.64 as designated by the California Department of Water Resources (DWR 2016). The North American Subbasin encompasses 548 square miles bounded on the west by the Feather and Sacramento rivers, on the north by the Bear River, on the south by the American River, and on the east by the Sierra Nevada (DWR 2006; 2016). The western part of the American Subbasin where the project site is located is a nearly flat flood basin for the Bear, Feather, Sacramento, and American rivers, and several small eastern side tributaries, with a general direction of drainage to the west-southwest at an average grade of approximately 5 percent (DWR 2006). Groundwater flows primarily toward the southwest, generally following surface topography trends (Placer County 2019). Abundant groundwater is pumped from the basin, both regionally and locally (MBI 2015). The average aquifer-specific yield of the North American Subbasin calculated for an assumed aquifer thickness of 200 feet is 7 percent, with water well yields ranging up to 2,500 gallons per minute for municipal and irrigation supply wells (DWR 2006). The Sacramento Groundwater Authority is a joint powers authority (JPA) responsible for the protection of the regional groundwater basin within Sacramento County north of the American River and adopted a groundwater management plan on December 11, 2003 (DWR 2006).

As described by CVRWQCB (2018), all groundwater in CVRWQCB Region 5, including Sacramento Valley Groundwater Basin No. 5-021, is considered as suitable or potentially suitable, at a minimum, for municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply. As described by Placer County, groundwater quality in the part of the aquifer within approximately 600 feet of ground surface is generally considered suitable for drinking. However, a comparison of groundwater quality data with applicable water quality standards and guidelines for drinking water and irrigation water found high levels of total dissolved solids, salts, chloride, bicarbonate, boron, fluoride, nitrate, iron, manganese, and arsenic in some locations of the North American Subbasin (Placer County 2019).

National Wetland Inventory Mapping at the project site is shown on Figure 12-1. The project site includes drainages in the northwestern, eastern, and southern portions of the site classified as Freshwater Emergent Wetland and Riverine. The U.S. Fish and Wildlife Service (USFWS) (2020) indicates the Northern Prairie Wildlife Research Center definition of the Emergent Wetland Class is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years, and the wetlands are usually dominated by perennial plants. USFWS (2020) also indicates the Northern Prairie Wildlife Research Center definition of the Riverine System includes all wetlands contained within a channel except wetlands dominated by trees, shrubs, persistent emergent, emergent mosses, or lichens. Aquatic resources at the project site are discussed in detail in Section 7.1.5.3.

As shown on Figure 12-2, none of the project site is within a designated flood hazard zone, as classified by the Federal Emergency Management Agency (FEMA). The project site is not located within the estimated flood boundaries for the 100-year flood event, based on the Flood Insurance Rate Map prepared by FEMA (1998, as referenced in MBI 2015).

### 12.1.3 Local Setting

Solid waste management activities occur on the WPWMA's 314-acre center property, as described in Chapter 1. The center property includes the existing Material Recovery Facility (MRF) building, organics management operation, construction and demolition materials processing area, public waste drop-off area, household hazardous waste facilities, Western Regional Sanitary Landfill (WRSL), stormwater ponds, scale house facilities, landfill gas-to-energy plant, site entrance infrastructure, and a PG&E transmission line easement. The project also includes the approximately 155-acre eastern property, which is currently leased by the WPWMA to a private entity for cattle grazing and is not currently permitted for solid waste

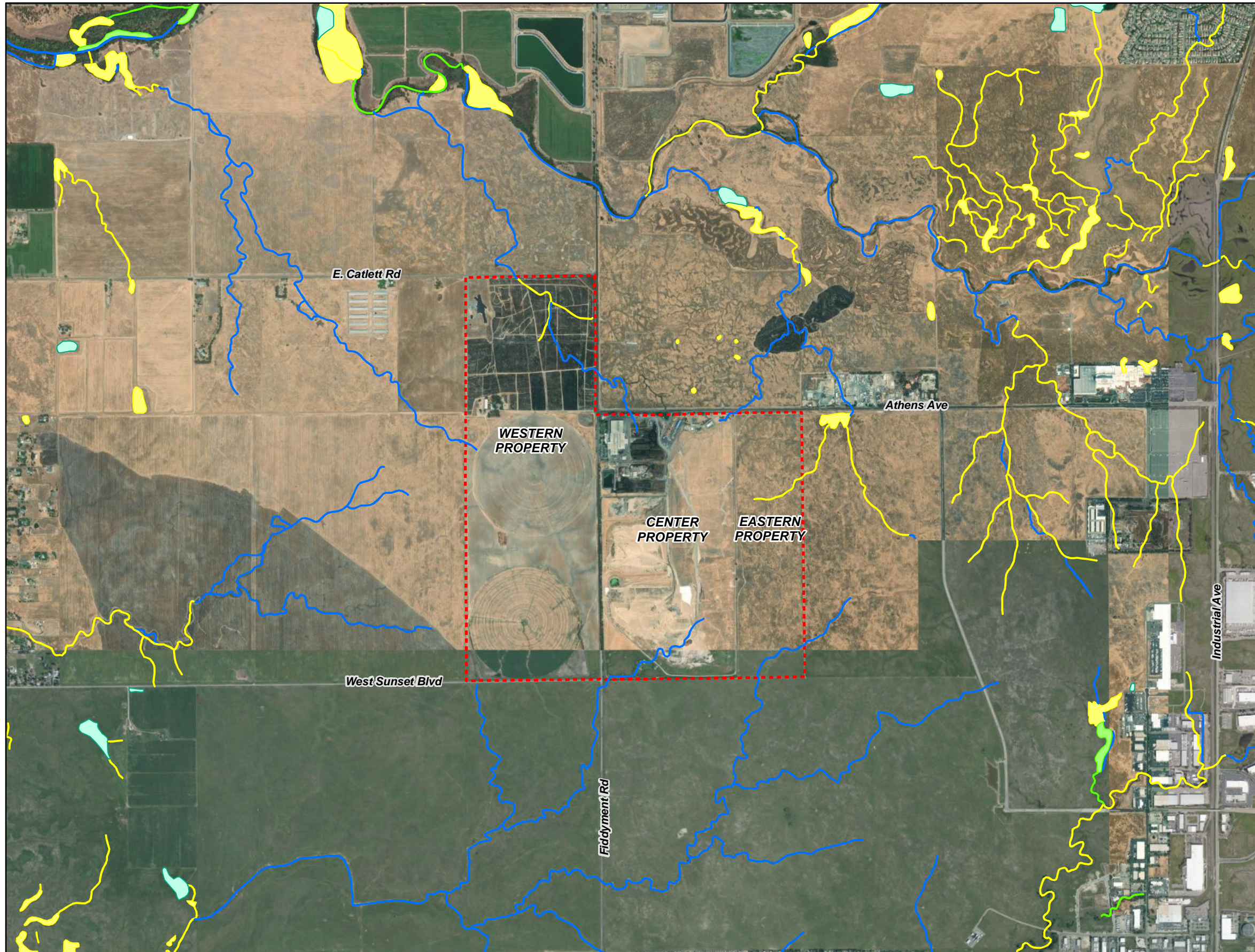
operations; and the approximately 459-acre western property, part of which is currently leased to the City of Lincoln for discharge of reclaimed water and a part of which is leased for model airplane operations. The WRSL is operated under a permit from the California Regional Water Quality Control Board (RWQCB), Central Valley Region. It is currently operating under WDR Order No. R5- 2007-00047 (issued May 4, 2007), in conformance with *California Code of Regulations* Title 27, and Order 93-200, which implements State Water Resources Control Board Resolution No. 93-62 and federal municipal solid waste regulations.

### **Stormwater Management at WPWMA**

Stormwater at the WRSL and MRF is managed in accordance with WDR Order No. R5-2007-0047 and Industrial General Permit (IGP) 2014-0057-DWQ issued by the CVRWQCB, respectively. The WPWMA SWPPP, prepared for the WRSL and MRF, in accordance with the WDRs and IGP (but attached to the IGP), implements measures designed to manage rainfall at the WPWMA's facilities. Class III landfill units are required to be designed to manage a 100-year, 24-hour storm event, and Class II landfill units must be designed to manage a 1,000-year, 24-hour event. The WDRs list the 1,000-year, 24-hour event as 6.0 inches of rain (CVRWQCB 2002; 2007).

The WPWMA SWPPP (MBI 2015) describes stormwater drainage for the WRSL, including both active landfill areas and covered areas (including areas covered with vegetation, soil cover, and temporary erosion protection). Stormwater from covered areas of the WRSL sheet flows into vegetated drainage swales and is discharged from points at the northeastern and southwestern corners of the WRSL as shown on Figure 12-3 (MBI 2015). The receiving water for stormwater discharges from the north of the WRSL is Orchard Creek, located 1.28 miles north of the WRSL northern boundary. The receiving water for stormwater discharges from the south of the WRSL is Pleasant Grove Creek, located 1.87 miles south of the WRSL southern boundary. Surface water in the area of the project site drains to the north to Orchard Creek and to the south to Pleasant Grove Creek, as shown on Figure 12-4 (MBI 2015). Both of these creeks eventually flow into the Sacramento River. Orchard and Pleasant Grove Creeks consist of intermittent streams that are primarily used for agricultural purposes.

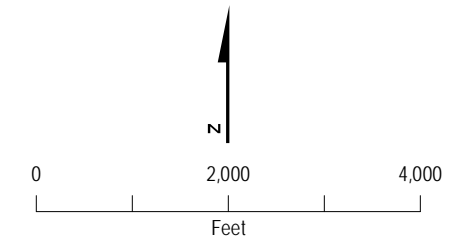
The WPWMA SWPPP (MBI 2015) describes the MRF stormwater drainage system, which is designed for a 10-year, 24-hour storm. The MRF stormwater drainage map, as depicted in the WPWMA SWPPP, is shown on Figure 12-5. Stormwater runoff at the MRF flows by variations in surface grades to two stormwater ponds, bypassing the compost operations areas, which have separate drainage systems. During low flows, the MRF drainage system directs flow to the Stormwater Quality Pond (SWQP), an earthen sedimentation basin. The SWQP detains runoff for settling of sediments and for vegetation to absorb contaminants. When the water gathers to a depth of 3 to 4 feet, runoff occurs through the SWQP outlet, which includes an 8-inch pipe connecting the SWQP and the stormwater discharge pond. A control valve on this outlet makes isolation of water in the SWQP possible, if necessary.



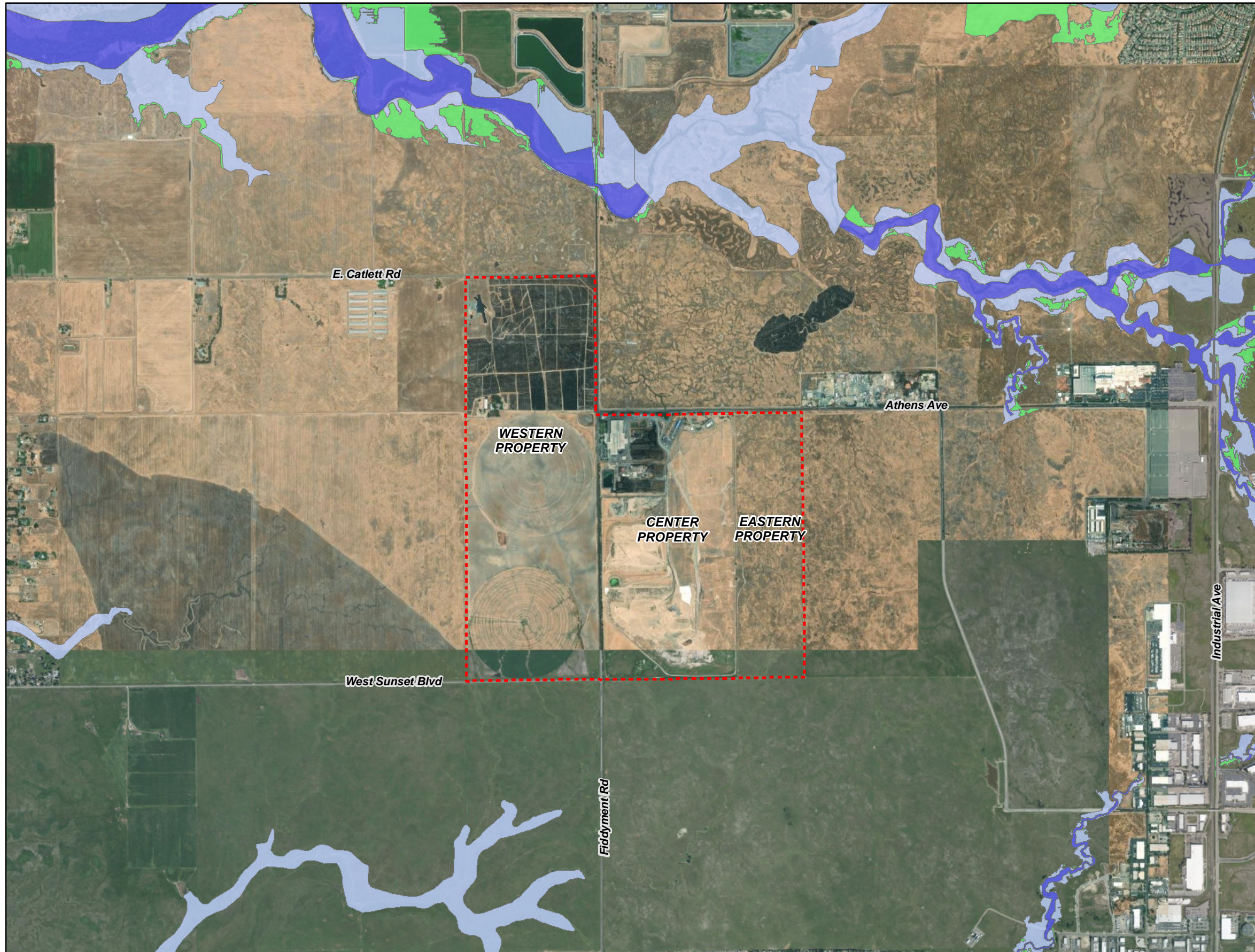
**LEGEND**

- Project Boundary
- National Wetlands Inventory**
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

Source: U.S. Fish and Wildlife Service, National Wetlands Inventory, accessed December 2020.



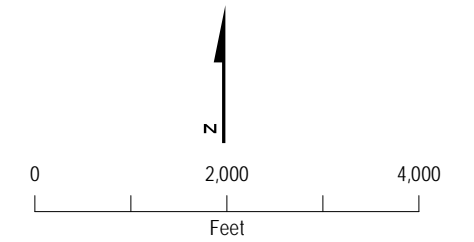
**Figure 12-1. National Wetlands Inventory**  
 Draft Environmental Impact Report  
 Renewable Placer: Waste Action Plan  
 Placer County, California



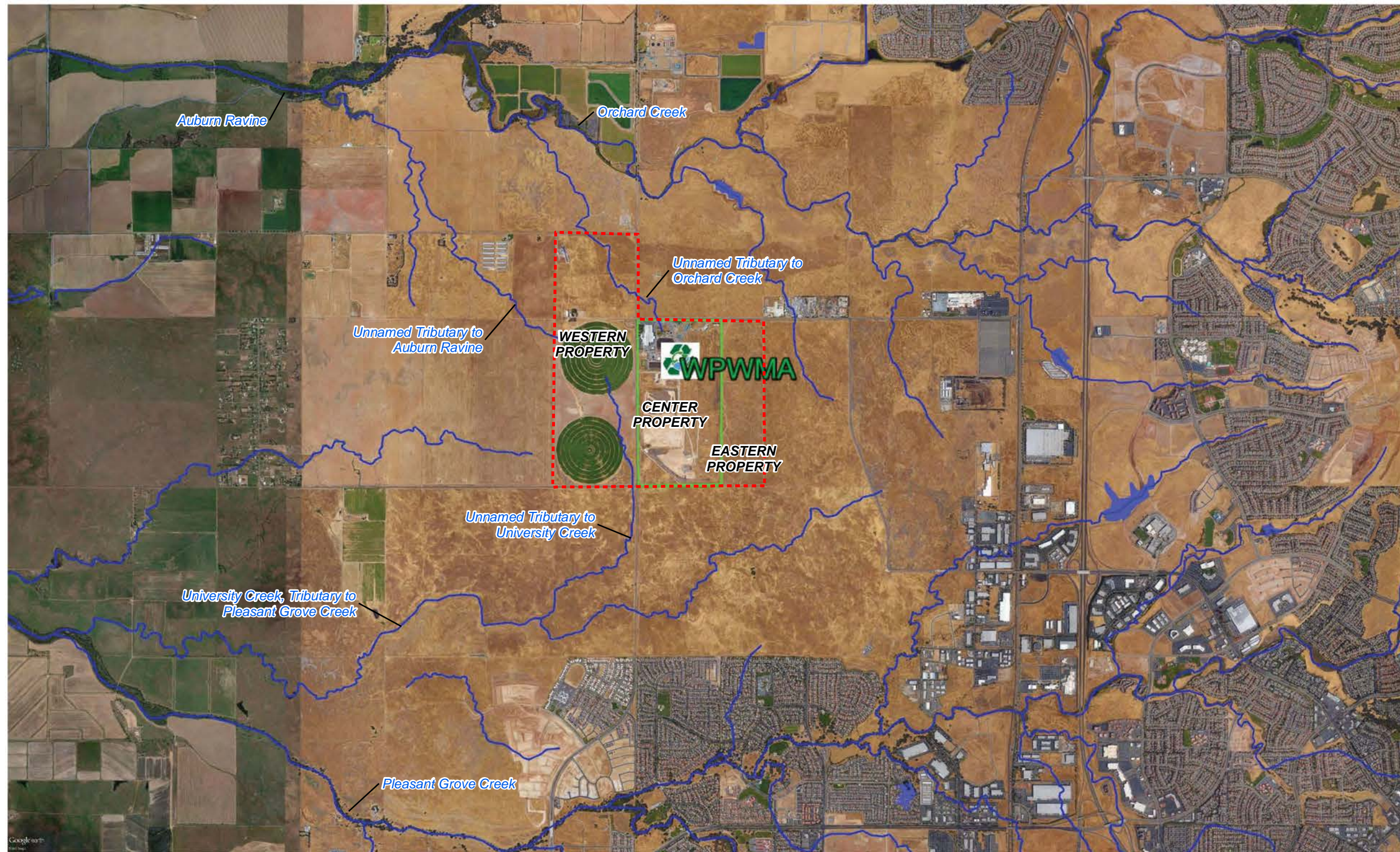
**LEGEND**

- Project Boundary
- Flood Hazard Zones**
- Special Flood Hazard Area - 1% Annual Chance Flood
- Special Flood Hazard Area - Regulatory Floodway
- 0.2% Annual Chance Flood Hazard
- Areas Determined to be Outside the 0.2% Annual Chance Floodplain

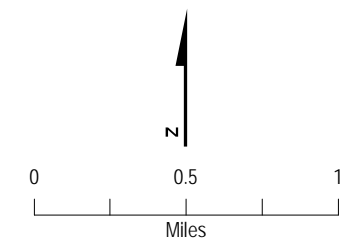
Source: FEMA National Flood Hazard Layer, accessed December 2020.



**Figure 12-2. FEMA Flood Zones**  
 Draft Environmental Impact Report  
 Renewable Placer: Waste Action Plan  
 Placer County, California



**LEGEND**  
 Project Boundary



Sources:  
 1. Michael Baker International, 2015. Stormwater Pollution Prevention Plan, Western Placer Waste Management Authority. January 31.  
 2. Ascent Environmental, 2019. Final Environmental Impact Report, Sunset Area Plan/Placer Ranch Specific Plan. Prepared for Placer County. October.

**Figure 12-3. Surface Water Bodies in Project Site Vicinity**  
 Draft Environmental Impact Report  
 Renewable Placer: Waste Action Plan  
 Placer County, California



- LEGEND**
- Storm Water Discharge points
  - Approx. Facility Boundaries
  - Roofed Area
  - ➔ SW Flow Direction
  - - - Approx. MRF Area (Over 95% Impervious)
- MRF Drainage system is provided in separate drawings.

(not to scale)

Source: Michael Baker International, 2015. Stormwater Pollution Prevention Plan, Western Placer Waste Management Authority. January 31.

**Figure 12-4. Existing Stormwater Management Map (Center Property)**  
 Draft Environmental Impact Report  
 Renewable Placer: Waste Action Plan  
 Placer County, California





**LEGEND**

-  Storm Water Discharge Point
-  Approx. Facility Boundaries
-  SW Flow Direction
-  Approx. MRF Area
-  Area Discharges to Storm Water Pond 1
-  Discharges to Containment Ponds 3& 4
-  Discharges to Storm Water Quality Pond 2
-  Ponds
- 1** Storm Water Quality Pond
- 2** Water Quality Pond
- 3** Compost Leachate Pond - North
- 4** Compost Leachate Pond - South
- 
- (not to scale)

Source: Michael Baker International, 2015. Stormwater Pollution Prevention Plan, Western Placer Waste Management Authority. January 31.

Figure 12-5. MRF Drainage Map  
 Draft Environmental Impact Report  
 Renewable Placer: Waste Action Plan  
 Placer County, California

During high flows, runoff may bypass the SWQP via a drainage inlet that discharges runoff through an 18-inch line into the southwestern corner of the stormwater discharge pond. High flows may continue to fill the SWQP, and when the pond water surface level reaches 118 feet AMSL, the water will flow over a spillway into the stormwater discharge pond. The high water will flow through a 30-inch line directly to the stormwater discharge pond. Water in the stormwater discharge pond may continue to accumulate until reaching 118 feet AMSL when it flows into a concrete outlet structure and enters two 30-inch pipelines discharging from the site and to a drainage swale north of Athens Avenue.

Leachate from compost operations areas flows to the compost leachate ponds as shown on Figure 12-5, where it percolates (northern compost pond only), evaporates, or is pumped for reuse as windrow water. According to its design, the compost leachate control system has capacity to contain leachate generated during a 100-year, 24-hour storm or the wettest year of record, with no discharge. The northern compost pond is scheduled for replacement and upgrades in fall 2021 as required under the CVRWQCB Composting General Order and will contain runoff from the average annual precipitation plus 0.7 times the standard deviation (approximately 30.56 inches of rain) plus the runoff from a 25-year, 24-hour storm (3.95 inches).

The outdoor nonoperational part of the Waste Recovery operations (approximately 19 acres) is designed to prevent erosion. The western and northern boundaries of the Waste Recovery areas are landscaped with turf grass and trees as a means of erosion control. The rest of the unpaved areas inside the boundary of the improved area are included in the stormwater collection system to the northern and eastern sides of the northern compost pad. The balance of the unimproved area of the MRF has grass on it and is sloped in such a manner that it carries water to a drainage swale along the southern and eastern boundary of the improved MRF. This swale collects water before entry to the improved portion of the property and diverts it to the stormwater discharge pond along with other water entering from off property to the east and south of the MRF building. When the stormwater discharge pond reaches its capacity, it allows the water to run off through the two 30-inch-diameter storm drain culverts as described earlier.

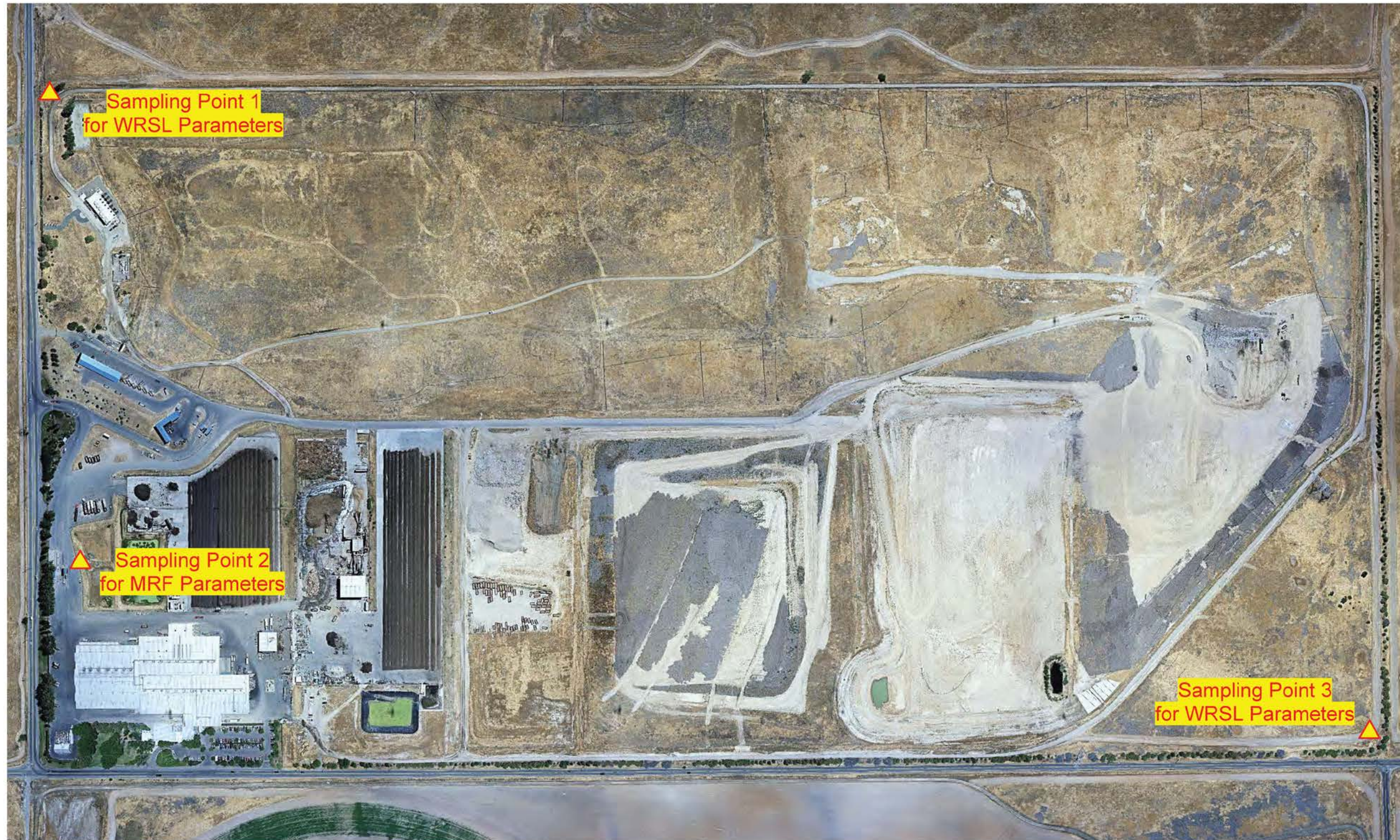
### **Stormwater Monitoring**

The existing SWPPP (MBI 2015), which covers the WRSL and MRF activities, is designed to comply with the California State Water Resources Control Board's (SWRCB's) General Permit for Storm Water Discharges Associated with Industrial Activities, IGP Order No. 2014-0057-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001 adopted by the SWRCB. Section XI.B.6 of the IGP requires all facilities to monitor their stormwater discharge for certain water quality parameters (that is, pH, total suspended solids [TSS], and oil and grease). Based on the project site's Regulated Standard Industrial Classification Codes (4953 and 5093), additional monitoring parameters are iron (Fe), lead (Pb), aluminum (Al), zinc (Zn), and chemical oxygen demand (COD). The WPWMA implements and maintains the following minimum best management practices (BMPs) to reduce or prevent pollutants in industrial stormwater discharges to the extent feasible:


- Good housekeeping
- Preventive maintenance
- Spill and leak prevention and response
- Material handling and waste management
- Erosion and sediment controls
- Employee training program
- Quality assurance and record keeping

As described in the SWPPP, the Monitoring Implementation Plan includes the following:

- **Qualifying Storm Events (QSEs).** Stormwater sampling and visual observations are required during QSEs. A QSE is a precipitation event that produces a discharge for at least one drainage area and is preceded by 48 hours with no discharge from any drainage area.
- **Safety Consciousness and Monitoring Exceptions.** Monitoring activities, including sample collection and visual observations, are not required under the following conditions:
  - During dangerous weather conditions such as flooding or electrical storms
  - Outside of scheduled WPWMA office staff hours
- **Monthly Visual Observations.** At least once per calendar month, each drainage area is monitored and visually observed for the following:
  - Presence or indications of prior, current, or potential unauthorized Nonstormwater Discharges (NSWDs) and their sources
  - Authorized NSWDs, sources, and associated BMPs to comply with Section IV.B.3 of IGP
  - Outdoor industrial equipment and storage areas, outdoor industrial activities areas, BMPs, and all other potential source of industrial pollutants
- **The monitor visually observes and records the presence or absence of floating and suspended materials, oil and grease, discolorations, turbidity, odors, trash and debris, and source(s) of any discharged pollutants on a Sampling Event Visual Observations Form.** When pollutants are observed in the discharged stormwater, follow-up observations of the drainage area are conducted to identify the probable source of the pollutants. In the event a visual observation identifies a deficiency or deficiencies in the SWPPP or BMPs (either design or implementation) a Response Action is required and taken immediately. All discharge locations and stormwater storage or containment areas of the project site shown on Figures 12-4, 12-5, and 12-6 are considered Visual Observation Points and are monitored by the monitoring team members.
- **Sampling and Analysis.** Stormwater samples are collected at surface water sampling locations SW-1, SW-2, and SW-3, shown on Figure 12-6, and analyzed from two QSEs in the first half of each reporting year (July 1 to December 31), and two QSEs in the second half of each reporting year (January 1 to June 30) to the extent sufficient QSEs occur during each of these periods. In every sampling event, samples are collected and analyzed for pH, TSS, oil and grease, Fe, Pb, Al, Zn, and COD, as appropriate, depending on the source of the stormwater and associated operation type.
- **Sampling Points and Times.** Sampling is conducted at all stormwater discharge points permitted in the SWPPP. Samples are collected within four hours of the start of discharge, or start of facility operations if the QSE occurs within the previous 12-hour period.
- **Analysis Requirements.** Samples are sent to a qualified lab for analytical testing in conformance with the parameters and constituents, numeric action level values, test and analysis methods, and reporting units provided in the SWPPP.
- **Quality Assurance and Control.** A quality assurance and quality control plan is implemented, including procedures for observation and sampling logs, chain of custody, and proper sampling.
- **Sampling and Analysis Reporting.** All sampling and analytical results for all individual or qualified combined samples are submitted via SMARTS within 30 days of obtaining results for each sampling event.
- **Record Keeping.** Samples and measurements taken for the purpose of the monitoring plan are representative of the monitored activity. Results of all monitoring activities, required or not required, are included in calculating and reporting the data submitted.



**LEGEND**

 Sampling Points

Sampling Point	Take Samples For
1 and 3	pH TSS O&G Fe
2	pH TSS O&G Fe Pb Al Zn COD

 (not to scale)

Source: Michael Baker International, 2015. Stormwater Pollution Prevention Plan, Western Placer Waste Management Authority. January 31.

**Figure 12-6. Sampling/Monitoring Points**  
 Draft Environmental Impact Report  
 Renewable Placer: Waste Action Plan  
 Placer County, California

### **Leachate Monitoring**

As described by SCS (2020b), the WRSL is equipped with a leachate-monitoring network consisting of leachate collection and recovery system (LCRS) module sumps. The LCRS sumps are monitored monthly for liquid depth and field parameters, including electrical conductivity (also known as specific conductance) and pH when liquid is present. Leachate samples are collected on an annual basis from the sumps with sufficient liquid, typically during the fourth quarter of each year, and analyzed by an analytical laboratory for leachate-monitoring parameters, including dissolved inorganics, total organic carbon, volatile organic compounds (VOCs), semi-VOCs, chlorinated herbicides, and organophosphorus pesticides.

As described by SCS (2020b), leak-detection points for monitoring the LCRS are designated M-5 LD, S-15 (also identified as LD-15 or M-15 LD), and M-16 LD South and M-16 LD West. Note that the designations S-15 and LD-15 denote a single sump that serves as both a leak-detection sump and a lysimeter for unsaturated zone monitoring. The leak-detection sumps are monitored monthly for liquid levels, and if liquid is present, they are sampled quarterly and analyzed for the leachate-monitoring parameters. All liquid, to the extent possible, is removed from the leak-detection sumps on a quarterly basis. Gas samples are collected on a semiannual basis from the leak-detection sump standpipes and analyzed for VOCs and methane.

### **Unsaturated Zone Monitoring**

As described by SCS (2020b), the unsaturated zone monitoring network consists of suction lysimeter detection points S10-A/B, S11-A/B, S12-A/B, S13-A/B, S14-A/B, M-5 LY, S-15R, M-16 LY SR, and M-16 LY WR; suction lysimeter background point BG A/B; and pan lysimeter detection points S-15 (M-15 LY), M-5 LY, M-16 LY South, and M-16 LY West. Pan lysimeters located at these points are placed below (or as close to below for suction lysimeters) the leachate-collection system or under the leak-detection system, as appropriate. Note that S-15 and M-15 LY (also identified as LD-15) designate a single sump that serves as both a leak-detection sump and a lysimeter. Pan lysimeter monitoring points are monitored monthly for liquid level and sampled quarterly. Suction lysimeter points are sampled semiannually during the second and fourth quarters and analyzed for the leachate-monitoring parameters.

### **Groundwater Monitoring**

As described by MBI (2015), groundwater at the WRSL occurs at depths ranging from 70 to 110 feet below ground surface within the alluvial sediments that underlie the project site. Groundwater has been observed within the overlying unsaturated zone in what has been referred to as temporary or transient perched zones. This water is considered to result from the downward migration of infiltrating water. The water may accumulate on lower permeability layers and form temporary perched zones (EMCON 1988, as referenced in MBI 2015). There are no known springs within the project site or within 1 mile of the project site.

During the second quarter of 2020, the water table occurred at elevations ranging from approximately 31 to 38 feet AMSL, corresponding to depths of approximately 80 to 100 feet below ground surface (SCS 2020b). Groundwater flows to the southwest at the project site at approximately 0.026 feet per day or 9.3 feet per year (SCS 2020b).

As described by SCS (2020b), groundwater monitoring is performed on a quarterly basis at the WRSL in accordance with the Monitoring and Reporting Program (MRP) described in WDR Order No. R5-2007-0047 (CVRWQCB 2007). The groundwater monitoring network consists of 39 groundwater monitoring wells across the site as follows:

- 12 wells associated with the Corrective Action Program (CAP) (MW-5, CW-5S, CW-5M, CW-5D, MW-9, CW-9S, CW-9M, CW-9D, MW-10, MW-11R, MW-13, and MW-23R) sampled quarterly
- 24 downgradient wells associated with the Detection Monitoring Program (MW-2, MW-3, MW-6, MW-7, CW-7S, CW-7M, CW-7D, MW-8, MW-12, MW-14 through MW-18, CW-19S, CW-19M, CW-19D, MW-22, MW-24, CW-25S, CW-25M, and CS-25D sampled semiannually, and MW-19 and MW-20 sampled quarterly)
- 2 upgradient (background) wells (LW-1 and MW-4) sampled annually
- Well MW-1 used for water level monitoring only

The 15 “CW” cluster wells were installed to monitor the shallow (-S), intermediate (-M), and deep (-D) intervals of the uppermost water-bearing zone and are sampled by using a portable electric submersible pump. All other monitoring wells are screened in the uppermost water-bearing zone and, with the exception of well LW-1, are equipped with a dedicated submersible pump used for purging and to retrieve groundwater samples. Well LW-1 is purged and sampled by using a disposable bailer.

VOCs have been detected in groundwater samples from several monitoring wells at the WRSL. Historically, VOCs were first observed in January 1989 and reconfirmed at well MW-9 (located in the northern part of the site, at the western edge of the currently closed, non-Subtitle D lined landfill modules) during drilling and installation of additional groundwater monitoring wells during the fourth quarter 1995. Prior reports suggested that the source of the VOCs appeared to be landfill gas (LFG). As described by SCS (2020b), a CAP and Addendum were submitted to the CVRWQCB on May 20, 1997, and September 23, 1997, respectively. The CVRWQCB approved the CAP and its addendum in late 1997, which required the installation of a final cover and an LFG extraction system on the unlined landfill modules in the northern half of the permitted landfill boundary, where the VOCs were detected. To monitor the effectiveness of these CAP measures, corrective action wells MW-9, MW-10, and MW-11R are sampled on a quarterly basis. MW-10 is located about 350 to 400 feet south of MW-9, and MW-11R is located in the same vicinity. Data from the CAP wells are evaluated for inorganic and organic constituent concentration trends.

Trace concentrations of VOCs were detected in groundwater monitoring wells MW-5 and MW-13, and former well MW-23, beginning in 2001. These wells were added to the CAP monitoring program (Order No. R5-2002-0218). WPWMA submitted an Engineering Feasibility Study (SCS 2019) to review the current CAP and determine the viability of alternatives for corrective action not currently being performed. As described by SCS (2019), WPWMA is exploring the viability of a localized, seasonal groundwater pump-and-treat system, in addition to the 1997 CAP measures, to remediate groundwater more expeditiously at the project site.

Fluctuations in concentrations of VOCs, calcium, magnesium, and bicarbonate alkalinity, which can each be affected by LFG, have been observed in the samples from the CAP wells. Changes in concentrations of these parameters suggest that the influence of LFG on groundwater quality has varied over time. WRSL continues to adjust LFG extraction wells to control LFG migration and, in recent years, has greatly increased LFG yields from the landfill.

The WPWMA received a Notice of Violation (NOV) from CVRWQCB, dated January 17, 2019, pertaining to recurring VOC detections in unsaturated zone sumps, methane exceedances in perimeter LFG probes, and other monitoring and reporting items. The WPWMA submitted a Compliance Plan to CVRWQCB on April 15, 2019, to address compliance items identified in the NOV. These items have been addressed in previous reports, and tables and figures that were modified to address these items and continue to be presented in the quarterly monitoring reports (SCS 2020b).

As reported by SCS (2020b), second quarter 2020 detection monitoring results for the WRSL indicate VOC detections of trace concentrations of tetrachloroethene (PCE) and toluene in wells MW-18 and CW-25S, detections of inorganic parameters within historical concentration ranges, except for sulfate in well MW-20 and nitrate as N in wells CW-7S, MW-18, and CW-25M. Second quarter 2020 corrective action monitoring results for the WRSL indicate VOC detections of 1,1-DCA, cis-1,2-DCE, PCE, trichloroethene, benzene, 1,4-DCB, freon-12, toluene, and vinyl chloride, and detections of inorganic parameters above their respective historical concentration ranges for sulfate, nitrate as N, and potassium (SCS 2020b).

## 12.2 Regulatory Setting

### 12.2.1 Federal

#### **Clean Water Act of 1972, as amended.**

The Clean Water Act (CWA), enacted by the federal government in 1972 and subsequently amended, was designed to restore and maintain the chemical, physical, and biological integrity of the nation's waters and is the principal federal statute for water quality protection. In general, the CWA requires compliance with state and federal pollution control measures, no degradation of instream water quality needed to support designated uses, control of nonpoint sources of water pollution through conservation or BMPs, federal agency leadership in controlling nonpoint pollution from managed land, and rigorous criteria for controlling pollution discharges into waters of the United States.

The CWA requires that point source discharges of pollutants to waters of the United States be performed in conformance with an NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect water quality. The CWA authorizes the U.S. Environmental Protection Agency (EPA) or states with an approved NPDES program to issue permits. California became a "delegated state" for issuing NPDES permits in 1974. The state issues NPDES permits as WDRs in accordance with a Memorandum of Agreement between EPA and SWRCB, and as codified in the *California Water Code*.

In response to the CWA, promulgated in 1972 as subsequently amended and codified as final regulations in 1990 in Title 40 of the *Code of Federal Regulations* (CFR), Part 122 (40 CFR 122), the SWRCB elected to issue a statewide General Permit that would apply to all discharges covered under the new regulations, except municipal storm drain systems and stormwater discharges from construction activities covered under separate statewide permits. The General Permit was initially issued in November 1991 under Water Quality Order No. 91-13-DWQ.

The SWRCB issued a revised General Permit under Order No. 97-03-DWQ in April 1997 to replace the existing General Permit (Order No. 91-13-DWQ). This General Permit was issued to revise some of the provisions of the expired permit in accordance with federal regulations. The revised General Permit (Order No. 97-03-DWQ) requires discharges covered under the former and revised permits to comply with the following requirements:

- Submission of an abbreviated Notice of Intent
- Preparation of a revised SWPPP to comply with the appropriate requirements of the new General Permit
- Development and implementation of a Stormwater Management Plan (SWMP)
- Annual reporting of stormwater testing results and a comprehensive site compliance evaluation

The SWPPP has two major objectives: (1) to describe site conditions and activities to help identify sources of pollution that may affect stormwater discharge quality and (2) to identify and implement site-specific BMPs that mitigate pollution in stormwater discharges. Stormwater management controls include structural and nonstructural BMPs. Structural BMPs generally consist of structural devices and improvements that are installed to complement nonstructural BMPs to control potential pollution of stormwater discharges. Nonstructural BMPs generally consist of procedures and policies that are implemented to mitigate the potential for pollution of stormwater caused by site activities.

The SWMP has four objectives: (1) to monitor the quality of stormwater discharges for compliance with the General Permit, (2) to evaluate changing conditions and practices at the site to control pollutants in stormwater discharges, (3) to aid in the implementation of the SWPPP, and (4) to measure the effectiveness of the BMPs in mitigating pollutants in stormwater discharges. The General Permit requires annual sampling and testing of stormwater runoff discharge events and the subsequent reporting of results. Annual reports are required to be submitted by July 1 of each year to the relevant regional water quality control board (RWQCB), in this case, the CVRWQCB.

#### **National Toxics Rule.**

EPA issued the National Toxics Rule (40 CFR 131.36) in 1992 under the CWA to establish numeric criteria for priority toxic pollutants in 14 states and jurisdictions, including California, to protect human health and aquatic life. The rule established water quality standards for 42 pollutants for which water quality criteria exist under CWA Section 304(a) but for which the respective states had not adopted adequate numeric criteria. EPA issued the California Toxics Rule in May 2000. This rule establishes numeric water quality criteria for 130 priority pollutants for which EPA has issued Section 304(a) numeric criteria that were not included in the National Toxics Rule.

#### **Federal Antidegradation Policy.**

The federal antidegradation policy, established in 1968, is designed to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The federal policy directs states to adopt a statewide policy that includes the following primary provisions:

- Existing instream uses and the water quality necessary to protect those uses shall be maintained and protected
- Where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development
- Where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

#### **Watershed Protection and Flood Prevention Act of 1954**

The Watershed Protection and Flood Prevention Act establishes the policy that the federal government should cooperate with states and their political subdivisions, soil or water conservation districts, flood prevention or control districts, and other local public agencies for the purposes of preventing erosion, floodwater, and sediment damages in the watersheds of the rivers and streams of the United States, furthering the conservation, development, use, and disposal of water, and the conservation and use of land, thereby preserving, protecting, and improving the nation's land and water resources and the quality of the environment.



### **Floodplain Management, Executive Order 11988 of May 24, 1977**

Executive Order 11988 directs agencies to provide leadership and to take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out responsibilities for (1) acquiring, managing, and disposing of federal lands and facilities; (2) providing federally undertaken, financed, or assisted construction and improvements; and (3) conducting federal activities and programs affecting land use, including water and related land resources planning, regulating, and licensing activities.

### **Protection of Wetlands, Executive Order 11990 of May 24, 1977**

Executive Order 11990 directs agencies to provide leadership and to take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of federal lands and facilities; (2) providing federally undertaken, financed, or assisted construction and improvements; and (3) conducting federal activities and programs affecting land use, including water and related land resources planning, regulating, and licensing activities.

### **Title 40, Part 258 of the Code of Federal Regulations, "Solid Waste Disposal Facility Criteria (Subtitle D)"**

Federal standards regarding municipal solid waste landfills are contained in Subtitle D. By enacting Subtitle D, the EPA intended that states maintain the lead role in implementing and enforcing Subtitle D through approved state permit programs. Title 27 of the *California Code of Regulations* contains the current regulations of the California Department of Resources Recycling and Recovery (CalRecycle) and SWRCB pertaining to landfill disposal of municipal solid wastes. California's solid waste permit program was approved by EPA. As a result, California's solid waste regulations were determined to be functionally equivalent to Subtitle D. Accordingly, throughout this section, references to pertinent regulations will be to Title 27 regulations.

#### **12.2.2 State**

### **Porter-Cologne Water Quality Control Act (*California Water Code* Section 13000 et seq.) of 1969, as amended**

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and groundwater and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act, the policy of the state is as follows:

- The quality of all waters of the state shall be protected.
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason.
- The state must be prepared to exercise its full power and jurisdiction to protect the quality of water in the state from degradation.

The Porter-Cologne Act also requires adoption of water quality control plans that contain the guiding policies of water pollution management in California. Several statewide water quality control plans have been adopted by SWRCB. In addition, regional water quality control plans (basin plans) have been adopted

by each of the RWQCBs and are updated as necessary and practical. These plans identify the existing and potential beneficial uses of waters of the state and establish water quality objectives to protect these uses.

#### **Water Quality Control Plan for the Sacramento and San Joaquin Basin of 2018**

CVRWQCB adopted the Water Quality Control Plan for the Sacramento and San Joaquin Basin (Basin Plan), which consists of designated beneficial uses to be protected, water quality objectives to protect those uses, and a program of implementation needed for achieving the objectives. The Basin Plan serves as a regulatory reference for meeting both state and federal requirements for water quality control.

#### **General Permit for Stormwater Discharges Associated with Construction Activity**

SWRCB adopted the statewide NPDES Construction General Permit (CGP) in August 1999. The CGP was updated in 2009 with adopted Order 2009-0009-DWQ and amended in 2010 and 2012. The current CGP is Order 2012-0006-DWQ. The state requires that projects disturbing more than 1 acre of land during construction file a notice of intent with RWQCB to be covered under this permit. Construction activities subject to the CGP include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce nonstormwater discharges to storm drainage systems and other waters. A SWPPP must be developed and implemented for each site covered by the permit. The SWPPP must include BMPs designed to prevent construction pollutants from contacting stormwater and to keep products of erosion from moving offsite into receiving waters throughout construction and the life of the project; the BMPs also must address source control and, if necessary, pollutant control.

#### **State Nondegradation Policy**

In 1968, as required under federal antidegradation policy, SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

- a) Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.
- b) Any activity that produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet WDRs.

#### **California Water Code, Water Supply Wells, and Groundwater Management**

The *California Water Code* is enforced by DWR. The mission of DWR is “to manage the water resources of California in cooperation with other agencies, to benefit the state’s people, and to protect, restore, and enhance the natural and human environments.” DWR is responsible for promoting California’s general welfare by confirming beneficial water use and development statewide. The laws regarding groundwater wells are addressed in the *California Water Code*: Division 1, Article 2, and Articles 4.300 to 4.311, and Division 7, Articles 1–4. The Water Code also includes provisions for water supply assessments; these are included in Water Code Sections 10910–10915 and California Environmental Quality Act (CEQA) Guidelines Section 15155. Further guidance is provided by bulletins published by DWR, such as Bulletins 74-81 and 74-90, related to groundwater well construction and abandonment standards.

Groundwater management is outlined in the *California Water Code*, Division 6, Part 2.75, Chapters 1–5, Sections 10750–10755.4. The Groundwater Management Act was first introduced in 1992 as Assembly Bill (AB) 3030 and has since been modified by Senate Bill (SB) 1938 in 2002, AB 359 in 2011, and the Sustainable Groundwater Management Act (SGMA) (SB 1168, SB 1319, and AB 1739) in 2014. The intent of the acts is to encourage local agencies to work cooperatively to manage groundwater resources within their jurisdictions and to provide a methodology for developing a groundwater management plan.

#### **Sustainable Groundwater Management Act of 2014**

The SGMA became law on January 1, 2015, and applies to all groundwater basins in the state (Water Code Section 10720.3). By enacting the SGMA, the Legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Under the SGMA, any local agency that has water supply, water management, or land use responsibilities within a groundwater basin may elect to be a “groundwater sustainability agency” for that basin (Water Code Section 10723). Local agencies had until January 1, 2017, to elect to become or form a groundwater sustainability agency. If a basin is not within the management area of a groundwater sustainability agency, the county within which the basin is located is presumed to be the groundwater sustainability agency for the basin. However, the county may decline to serve in this capacity (Water Code Section 19724).

The SGMA also requires DWR to categorize each groundwater basin in the state as high, medium, low, or very low priority (Water Code Sections 10720.7, 10722.4). All basins designated as high or medium priority must be managed by a groundwater sustainability agency under a groundwater sustainability plan that complies with Water Code Section 10727 et seq. If required to be prepared, groundwater sustainability plans were required to be prepared by January 31, 2020, for all high- and medium-priority basins that are subject to critical conditions of overdraft, as determined by DWR, or by January 31, 2022, for all other high- and medium-priority basins. In lieu of preparing a groundwater sustainability plan, a local agency had the option to submit an alternative that complies with the SGMA no later than January 1, 2017, and every 5 years thereafter (Water Code Section 10733.6).

The project site is in the Sacramento Valley Groundwater Basin, North American Subbasin. On December 15, 2014, DWR announced its official “initial prioritization” of the state’s groundwater basins for purposes of complying with the SGMA, and this priority list became effective on January 1, 2015 (DWR 2014). DWR has ranked the subbasin as “high priority” because of its increasing population. However, the portion of the subbasin within Placer County has been managed for long-term resilience and has incorporated groundwater management policy and monitoring because of previous groundwater management legislation implemented in 1992. In response to the SGMA, the West Placer Groundwater Sustainability Agency was formed in 2017. This agency is responsible for the production of a groundwater sustainability plan by early 2022.

#### **Title 27, Environmental Protection – Division 2, Solid Waste, *California Code of Regulations***

Title 27 contains the current regulations of CalRecycle (previously the California Integrated Waste Management Board) and SWRCB pertaining to landfill disposal of municipal solid wastes. Federal standards regarding municipal solid waste landfills are contained in Subtitle D. By enacting Subtitle D, the EPA intended that states maintain the lead role in implementing and enforcing Subtitle D through approved state permit programs. California’s solid waste permit program was approved by EPA. As a result, California’s solid waste regulations were determined to be functionally equivalent to Subtitle D. Accordingly, throughout this section, references to pertinent regulations will be to Title 27 regulations.

The Title 27 regulatory scheme governing landfill disposal of municipal solid wastes is a blend of prescriptive and performance standards covering every aspect of the design, construction, and operation of landfill disposal facilities. These standards include siting criteria, seismic design standards, and containment system design and construction strategies to prevent impacts on surface water and groundwater resources. The following subchapters from Chapter 3 of Title 27 (Criteria for all Waste Management Units, Facilities, and Disposal Sites) are relevant to hydrology and water quality:

- Subchapter 2 – Siting and Design
- Subchapter 3 – Water Monitoring

Additional requirements for these siting and design criteria are provided in the following subchapters of Title 27 for the operational, closure, and post-closure periods:

- Subchapter 4 – Criteria for Landfills and Disposal Sites
- Subchapter 5 – Closure and Post-Closure Maintenance

**Section 20240, Classification and Siting Criteria:** Waste management units and engineered structures shall meet the following criteria:

- **5-Foot Separation.** All new landfills, waste piles, and surface impoundments shall be sited, designed, constructed, and operated such that wastes will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater. Existing landfills, waste piles, and surface impoundments shall be operated such that wastes will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater (Subsection [c]).

**Section 20250, Class II: Waste Management Units for Designated Waste:** Waste management units and engineered structures shall meet the following criteria (in addition to the more restrictive Class III requirements under Section 20260):

- **General.** Class II waste management units (Class II Units) shall be located where site characteristics and containment structures isolate waste from waters of the state.
- **Geologic Setting.** As described in Subsection (b) of Section 20250:
  - 1) New and existing Class II landfills or waste piles shall be immediately underlain by natural geologic materials that have a hydraulic conductivity of not more than  $1 \times 10^{-6}$  centimeters per second (cm/sec) (that is, 1 foot/year) and which are of sufficient thickness to prevent vertical movement of fluid, including waste and leachate, from units to waters of the state for as long as wastes in such units pose a threat to water quality. Class II units shall not be located where areas of primary (porous) or secondary (rock opening) hydraulic conductivity greater than  $1 \times 10^{-6}$  cm/sec (1 foot/year) could impair the competence of natural geologic materials to act as a barrier to vertical fluid movement.
  - 2) Natural or artificial barriers shall be used to prevent lateral movement of fluid, including waste and leachate.
  - 3) A liner system with a hydraulic conductivity of not more than  $1 \times 10^{-6}$  cm/sec (1 foot/year) shall be used for landfills and waste piles when natural geologic materials do not satisfy the requirements in (b)(1).
  - 4) New and existing Class II Units shall be designed, constructed, operated, and maintained to prevent inundation or washout caused by floods with a 100-year return period. Municipal solid waste landfills are also subject to any more-stringent flood plain and wetland siting requirements referenced in SWRCB Resolution No. 93-62 (see s258.11 and s258.12 of 40CFR258).

**Section 20260, Class III: Landfills for Nonhazardous Solid Waste:** Waste management units and engineered structures shall meet the following criteria:

- **General.** Class III landfills shall be located where site characteristics provide adequate separation between solid waste and waters of the state (Subsection [a]).
- **Geologic Setting.** Municipal solid waste landfills shall be sited where soil characteristics, distance from waste to groundwater, and other factors will prevent the impairment of beneficial use of surface water or of groundwater beneath or adjacent to the landfill (Subsection [b]). Factors that shall be evaluated include (A) size of the landfill, (B) hydraulic conductivity and transmissivity of underlying soils, (C) depth to groundwater and variations in depth to groundwater, (D) background quality of groundwater, (E) current and anticipated use of the groundwater, and (F) annual precipitation. Where consideration of these factors indicates that site characteristics alone do not protect the quality of groundwater or surface water, Class III landfills shall be required to have a single clay liner with hydraulic conductivity of  $1 \times 10^{-6}$  cm/sec or less. (The liner requirement in Section 20260 was superseded by SWRCB Resolution No. 93-62, incorporating Subtitle D requirements, which requires a composite liner that comprises a 2-foot-thick compacted soil layer having a maximum permeability of  $1 \times 10^{-7}$  cm/sec overlain by a geomembrane having a minimum thickness of 40 mils.)
- **Flooding.** New Class III landfills shall be designed, constructed, operated, and maintained to prevent inundation or washout caused by floods with a 100-year return period (Subsection [c]).
- **Ground Rupture.** New Class III landfills shall not be located on a known Holocene fault (Subsection [d]). A Holocene fault is defined as a fault that is or has been active during the last 11,000 years.
- **Rapid Geologic Change.** New Class III landfills can be located within areas of potential rapid geologic change only if the RWQCB finds that the unit's containment structures are designed, constructed, and maintained to preclude failure (Subsection [e]).

**Section 20330, SWRCB – Liners:** Liners shall be designed and constructed to contain the fluid, including LFG, waste, and leachate, as required in the previously noted siting criteria.

**Section 20340, SWRCB – Leachate Collection and Removal Systems:** LCRSs are required for Class III landfills that have a liner or that accept sewage or water treatment sludge. The LCRS shall be installed directly above underlying containment features or landfill and waste piles and installed between the liners for surface impoundments.

**Section 20360, Subsurface Barriers:** Subsurface barriers are cutoff walls that are used in conjunction with natural geologic materials to satisfy the lateral hydraulic conductivity standards where there is potential for lateral movement of fluid. Cutoff walls shall be installed at Class III landfills as required by RWQCB.

**Section 20365, Precipitation and Drainage Controls:** Units and their respective containment structures shall be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping.

**Section 20370, Seismic Design:** Class III Units shall be designed to withstand the maximum probable earthquake (MPE) without damage to the foundation or to the structures that control leachate, surface drainage, erosion, or gas. As required in Section 21750(f)(5), a stability analysis, including a determination of the expected peak ground acceleration of the unit associated with the MPE for Class III landfills, shall be included as part of the report of waste discharge (or joint technical document) for the proposed unit. Section 21750(f)(5) also requires that an updated stability analysis be included as part of the final closure and post-closure maintenance plan if the original analysis no longer reflects the conditions at the unit.

### 12.2.3 Local

The WPWMA is a JPA composed of Placer County and the cities of Lincoln, Rocklin, and Roseville to own and operate a regional recycling facility and sanitary landfill. As a JPA, the WPWMA considers local regulations and consults with local agencies, but County and city regulations are not applicable, because the County and cities do not have jurisdiction over the proposed project. Accordingly, the following discussion of local goals and policies associated with hydrology and water quality is provided for informational purposes only.

#### Placer County General Plan

The “Public Facilities and Services,” “Natural Resources,” and “Health and Safety” sections of the Placer County General Plan include goals and policies intended to provide flood protection and minimize impacts on property and hydrologic resources from stormwater runoff. Specific policies require new storm drainage systems to conform to the Placer County Flood Control and Water Conservation District (PCFCWCD) Stormwater Management Manual and the County Land Development Manual (Policy 4.E.4), require implementation of stormwater BMPs on construction sites (Policy 6.A.5), and discourage grading during the rainy season (Policy 6.A.7).

The Placer County General Plan includes the following goals and policies related to water resources and flooding:

- **GOAL 4.E:** To manage rainwater and stormwater at the source in a sustainable manner that least inconveniences the public, reduces potential water-related damage, augments water supply, mitigates stormwater pollution, and enhances the environment.
  - **Policy 4.E.1:** The County shall encourage the use of natural stormwater drainage systems to preserve and enhance natural features.
  - **Policy 4.E.4:** The County shall ensure that new storm drainage systems are designed in conformance with the PCFCWCD’s Stormwater Management Manual and the County Land Development Manual.
  - **Policy 4.E.11:** The County shall require new development to adequately mitigate increases in stormwater peak flows and volume. Mitigation measures should take into consideration impacts on adjoining lands in the unincorporated area and on properties in jurisdictions within and immediately adjacent to Placer County.
  - **Policy 4.E.12:** The County shall encourage project designs that minimize drainage concentrations and impervious coverage, minimize increases in runoff, promote infiltration, and maintain, to the extent feasible, natural site drainage conditions.
  - **Policy 4.E.13:** The County shall require that new development conforms with the applicable programs, policies, recommendations, and plans of the PCFCWCD.
  - **Policy 4.F.14:** The County shall require projects that have significant impacts on the quantity and quality of surface water runoff to allocate land as necessary for the purpose of detaining post-project flows, evapotranspiring, infiltrating, harvesting/using, and biotreating stormwater, and/or for the incorporation of mitigation measures for water quality impacts related to urban runoff.
  - **Policy 4.F.15:** The County shall require that new development in primarily urban development areas incorporate low impact development measures to reduce the amount of runoff, to the maximum extent practicable, for which retention and treatment [are] required.

- **Policy 4.E.18:** The County shall, wherever feasible, require that proponents of new projects encase, or otherwise protect from contamination, domestic water supply canals where they pass through developments with lot sizes of 2.3 acres or less; where subdivision roads are constructed within 100 feet upslope or upstream from canals; and within all commercial, industrial, institutional, and multifamily developments.
- **Policy 4.E.20:** The County shall continue to implement and enforce its Stormwater Quality Ordinance.
- **Policy 4.E.21:** The County shall ensure that all new development [complies] with water quality protection provisions of applicable storm water discharge permits issued pursuant to the NPDES program.
- **GOAL 4.F:** To protect the lives and property of the citizens of Placer County from hazards associated with development in floodplains and manage floodplains for their natural resource values.
  - **Policy 4.F.1:** The County shall require that arterial roadways and expressways, residences, commercial and industrial uses, and emergency facilities be protected, at a minimum, from a 100-year storm event.
  - **Policy 4.F.4:** The County shall require evaluation of potential flood hazards prior to approval of development projects. The County shall require proponents of new development to submit accurate topographic and flow characteristics information and depiction of the floodplain boundaries under fully developed, unmitigated runoff conditions.
  - **Policy 4.F.13:** The County shall continue to implement and enforce its Grading, Erosion and Sediment Control Ordinance, Stormwater Quality Ordinance, and Flood Damage Prevention Ordinance.
  - **Policy 4.F.14:** The County shall ensure that new storm drainage systems are designed in conformance with the PCFCWCD's Stormwater Management Manual and the County's Land Development Manual, the West Placer Stormwater Quality Design Manual, and requirements of applicable stormwater discharge permits issued pursuant to the NPDES program.
- **GOAL 6.A:** To protect and enhance the natural qualities of Placer County's rivers, streams, creeks, and groundwater.
  - **Policy 6.A.1:** The County shall require the provision of sensitive habitat buffers, which shall, at a minimum, be measured as follows: 100 feet from the centerline of perennial streams, 50 feet from the centerline of intermittent streams, and 50 feet from the edge of sensitive habitats to be protected, including riparian zones, wetlands, old growth woodlands, and the habitat of special status, threatened or endangered species. Based on more detailed information supplied as a part of the review for a specific project or input from state or federal regulatory agency, the County may determine that such setback is not applicable in a particular instance or should be modified based on the new information provided. The County may, however, allow exceptions, such as in the following cases:
    - a) Reasonable use of the property would otherwise be denied.
    - b) The location is necessary to avoid or mitigate hazards to the public.
    - c) The location is necessary for the repair of roads, bridges, trails, or similar infrastructure.
    - d) The location is necessary for the construction of new roads, bridges, trails, or similar infrastructure where the County determines there is no feasible alternative and the project has minimized environmental impacts through project design and infrastructure placement.

- **Policy 6.A.2:** The County shall require all development in the FEMA 100-year floodplain to comply with the provisions of the Placer County Flood Damage Prevention Ordinance.
- **Policy 6.A.6:** The County shall require development projects to comply with the municipal and construction stormwater permit requirements of the Federal Clean Water Act NPDES Phase I and II programs and the State General Municipal and Construction permits. Municipal requirements affecting project design and construction practices are enacted through the County's Stormwater Quality Ordinance. Separate construction permits may be required by and obtained through the SWRCB.
- **Policy 6.A.7:** All new development and redevelopment projects shall be designed so as to minimize the introduction of pollutants into stormwater runoff, to the maximum extent practicable, as well as minimize the amount of runoff through the incorporation of appropriate BMPs.
- **Policy 6.A.8:** The County shall support implementation of Low Impact Development site design and Watershed Process Management requirements for new and redevelopment projects in accordance with the NPDES Phase I and II programs, and applicable NPDES permits.
- **Policy 6.A.10:** The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.
- **GOAL 8.B:** To minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from flood hazards.
  - **Policy 8.B.3:** The County shall require flood proofing of new and substantially improved structures in areas subject to flooding to be built in accordance with the Flood Damage Prevention Ordinance (*Placer County Code* Chapter 15, Article 15.52).
  - **Policy 8.B.9:** The County shall require evaluation of potential flood hazards prior to approval of a discretionary or ministerial permit that would result in the construction or modification of structures, to determine whether the proposed project is consistent with the protection standards for the County Regulatory Floodplain. The County will not approve any discretionary project or any ministerial permit that would result in the construction or modification of structures for any property within the County Regulatory Floodplain unless the required flood protection specific to that area has been demonstrated in accordance with County ordinances and guidelines.

### ***Placer County Code***

As described by Placer County (2019), the *Placer County Code* is the implementing mechanism for the goals and policies of the General Plan. Specific ordinances relevant to hydrology and water quality include the Stormwater Ordinance (Section 8.28 of the *Placer County Code*), Grading, Erosion and Sediment Control Ordinance (Section 15.48 of the *Placer County Code*), and the Flood Damage and Prevention Ordinance (Section 15.52 of the *Placer County Code*). The Stormwater Ordinance includes discharge prohibitions, requirements for BMP installation and reduction of stormwater flows, and enforcement mechanisms. The Grading, Erosion and Sediment Control Ordinance includes regulating grading to safeguard life, limb, health, property and public welfare and to avoid pollution of watercourses with hazardous materials, nutrients, sediment, or other earthen materials generated on or caused by surface runoff on or across the permit area. The Flood Damage and Prevention Ordinance includes standards for construction in or near flood areas and prohibits actions that would raise flood elevations or increase the risk of flood damage to existing structures.

The Engineering and Surveying Division of the Placer County Community Development Resource Agency maintains policies and guidelines regarding grading, erosion control, stormwater design, inspection, and



permitting. County-issued permits and plans related to new infrastructure development and utilities that may be required within the project area include the following:

- Grading permits
- Stormwater quality plans
- Utility encroachment permits
- Improvement plans

The Environmental Health Services Division of the Placer County Department of Health and Human Services administers well installation and drilling and well destruction permitting within Placer County.

#### **Placer County Flood Control and Water Conservation District**

As described by Placer County (2019), PCFCWCD was formed by legislative resolution SB 1312 and made effective on August 23, 1984. Formulation and guidance of the PCFCWCD was made by consensus of other participating local government agencies, including the Placer Resource Conservation District and U.S. Soil Conservation Service. The objective of PCFCWCD is to reduce the effects of flooding by maintenance of drainage basins and the use of detention and retention basins; offer technical support; perform studies, advise, and collect data; and coordinate with adjacent jurisdictions. PCFCWCD's Stormwater Management Manual (1990) includes standards and methods for the planning and design of drainage and flood control infrastructure.

#### **Placer County NPDES Municipal Stormwater Permit**

As described by Placer County (2019), Placer County is a designated municipal permittee under EPA's NPDES Phase II ("Small MS4") program, which regulates stormwater flows into natural water bodies. Implemented by the State of California in 2013, the NPDES Phase II Permit implements a stormwater management plan that is intended to improve waterways by reducing the quantity of pollutants that stormwater picks up and carries in the storm sewer system during storm events. Requirements of the municipal stormwater permit (SWRCB NPDES General Permit No. CAS000004, Board Order 2003-0005-DWQ) are implemented through the County's Stormwater Quality Program, and all development projects in the County must comply with the provisions of the program. NPDES Phase II, adopted by the SWRCB in February 2013 (2013-0001-DWQ), requires postconstruction stormwater management criteria, including source control, site design, and West Placer County Storm Water Quality Design Manual (LID Manual) measures for new development and redevelopment. Among other requirements, regulated projects are required to perform site assessments as part of the early stages of project design. Site design measures and source control measures must be implemented. LID measures must be incorporated into the design to disconnect runoff from impervious surfaces and allow infiltration of runoff to the extent possible before installation of bioretention BMPs for water quality control for long-term (that is, postconstruction) water quality improvement. In addition, regulated projects that create or replace more than 1 acre of impervious surface must maintain post-project runoff equal to or below pre-project flow rates for the 2-year, 24-hour storm event.

#### **West Placer County Storm Water Quality Design Manual**

As described by Placer County (2019), the Western Placer County LID Manual was developed cooperatively by Placer County, the City of Roseville, the City of Lincoln, the City of Auburn, and the Town of Loomis to provide a consistent approach to addressing stormwater management within the west Placer region. The LID Manual contains strategies for LID and BMPs for protecting water quality and hydrologic functions. It is a regulatory compliance tool that assists jurisdictions with meeting the requirements of the Phase II Small MS4 Stormwater NPDES permit. On regulated projects, site design measures and BMPs must be implemented, to the extent technically feasible, to allow infiltration, harvest, or use the

postconstruction runoff generated by the 85th percentile 24-hour storm event. The project site area could be subject to the Phase II permit requirements; therefore, the LID Manual may apply to all development projects at the project site.

### **Western Placer County Groundwater Management Plan**

As described by Placer County (2019), in 2007, the City of Roseville, the City of Lincoln, PCWA, and the California American Water Company adopted the Western Placer County Groundwater Management Plan (WPCGMP). The PCWA service area, including the Sunset Industrial Area, is included in the WPCGMP area. The WPCGMP is designed to assist users in maintaining a safe, sustainable, and high-quality groundwater resource within a zone of the North American Subbasin. The overarching goal of the WPCGMP is the maintenance of groundwater resources to meet backup, emergency, and peak demands without adversely affecting other groundwater uses within the WPCGMP area. To meet this goal, the WPCGMP identifies the following five basin management objectives:

- Manage the groundwater basin so as to not have a significant adverse effect on groundwater quality
- Manage groundwater elevations such that there is an adequate groundwater supply for backup, emergency, and peak demands without adversely affecting adjacent areas
- Participate in state and federal land surface subsidence monitoring programs
- Protect against adverse impacts on surface water flows in creeks and rivers because of groundwater pumping
- Verify that groundwater recharge projects comply with state and federal regulations and protect beneficial uses of groundwater (Placer County 2019)

In November 2013, the Western Placer County Sustainable Yield Report was prepared for the WPCGMP (Placer County 2019). The study was designed to understand the usage, storage capacity, and sustainable yield of the aquifers within the west Placer County section of the North American Subbasin and to develop management strategies to protect and enhance this valuable water resource. The sustainable yield is defined as the amount of groundwater that can safely be extracted in any year or as a long-term average without creating adverse effects. The sustainable yield report indicates that in 2011, 28,455 acre feet per year (afy) of agricultural groundwater was extracted within the PCWA service area. This is slightly less than the 28,940 afy extracted in both 1998 and 1999 and substantially less than the 34,066 afy extracted in 2001 and 2002. The report indicates a steady increase in rural urban groundwater extraction, from 557 afy in 1998 to 899 afy in 2012.

### **Sunset Area Plan Goals and Policies:**

As described by Placer County (2019), the Sunset Area Plan (SAP) includes the following goals and policies relative to water quality, stormwater runoff, and flooding that are applicable to the proposed project:

- **GOAL LU/ED-3: Design and Land Development Practices.** To promote high-quality design and land development practices in the Sunset Area.
  - **Policy LU/ED-3.12: Impervious Surfaces/Low Impact Development.** The County shall require that all new discretionary development be designed in accordance with the LID Manual to incorporate Site Design Measures and Low Impact Development features to infiltrate runoff from impervious surfaces.
- **GOAL PFS-5: Stormwater Drainage.** To manage stormwater as a valuable resource that can recharge groundwater supplies, protect, and enhance natural habitat and biodiversity, add value to new

development or redevelopment projects, as well as reduce potential for flood water-related damage to structures or infrastructure.

- **Policy PFS-5.1: Natural Stormwater Drainage Systems.** The County shall encourage the use of natural stormwater drainage systems to preserve and enhance natural features. At the earliest planning stages, applicants for new development shall assess and evaluate how site conditions such as soils, vegetation, and flow paths will influence the placement of buildings and paved surfaces with a goal of incorporating the capture and treatment of runoff as part of the project design.
- **Policy PFS-5.4: Storm Drainage System Design.** The County shall ensure that storm drainage systems in new development are designed in conformance with the Placer County Flood Control and Water Conservation District's Stormwater Management Manual and the County Land Development Manual. The County shall require submission of a preliminary drainage report, prepared by a professional civil engineer registered in the State of California, as part of the discretionary development project review. The County shall further require that new development conforms with the applicable programs, policies, recommendations, and plans of the PCFCWCD.
- **Policy PFS-5.5: Stormwater Detention.** The County shall require that new development mitigate increases in stormwater peak flows to obtain an objective post-project mitigated peak flow that is equal to the estimated pre-project peak flow less 10 percent of the difference between the pre-project and unmitigated post-project peak flows. Projects that have significant impacts on the quantity of surface water runoff shall allocate land onsite as necessary for detaining post-project flows to meet this requirement. Detention facilities shall be constructed on the project site or within a larger project development area where joint facilities are warranted and approved by the County.
- **Policy PFS-5.6: Stormwater Retention.** The County shall require that new development mitigate increases in stormwater volume to retain the 100-year, 8-day design storm depth of 10.75 inches for the 200-foot elevation, unless another methodology has been agreed upon by Placer County. Mitigation measures should take into consideration impacts on adjoining lands in the unincorporated area and on properties in jurisdictions within, and immediately adjacent to, Placer County. New development may incorporate retention onsite, or at such time that a regional stormwater retention program is developed, participate in the implementation of the regional program by paying regional retention mitigation fees, as deemed appropriate.
- **Policy PFS-5.7: Low-Impact Development.** The County shall require that new development comply with the LID Manual to manage urban development runoff through the use of low impact development LID features, site design measures, and water quality best management practices. These may include, but are not limited to, a combination of features such as pretreatment water quality vaults, vegetated swales, infiltration/sedimentation basins, riparian and stream setbacks, oil/grit separators, porous pavement, rooftop and impervious surface area disconnection, soil quality improvement and maintenance, and tree planting and preservation.
- **GOAL NR-3: Streams and Floodplains.** To protect and enhance the natural qualities of the Sunset Area perennial and ephemeral streams and floodplains.
  - **Policy NR-3.1: Sensitive Habitat Buffers.** The County shall require new development to provide sensitive habitat buffers as specified in the Placer County Conservation Plan and County Aquatic Resource Program.
  - **Policy NR-3.2: Floodplain Compliance.** The County shall require all development in the FEMA or calculated 100-year floodplain to comply with the provisions of the Placer County Flood Damage Prevention Ordinance.

- **Policy NR-3.7: Grading After October 15th.** The County shall discourage grading activities between October 15th and April 30th, unless such activities are adequately mitigated to avoid impacts during the rainy season, including, but not limited to, stream sedimentation and riparian habitat damage.
- **Policy NR-3.19: NPDES Compliance.** The County shall require that new development applicants demonstrate to both the County and the CVRWQCB complete compliance with the provisions of a General Construction Stormwater Discharge NPDES permit authorized and approved by the CVRWQCB, if required for development. Compliance may include a written detailed SWPPP and Monitoring Program (required by the NPDES permit). If appropriate to the individual project, the applicant shall demonstrate to the County and the CVRWQCB that the required Water Quality Certification has been approved by the CVRWQCB and that the appropriate BMPs for control of erosion and sedimentation will be incorporated into construction activities.
- **Policy NR-3.10: Construction-Related Wastewater.** The County shall require new development to demonstrate to the satisfaction of the County and the CVRWQCB their complete compliance with the provisions of a General Permit for Dewatering and Other Low Threat Discharges to Surface Waters (Dewatering General NPDES permit) authorized and approved by the CVRWQCB. Compliance shall include a monitoring and reporting program and shall include BMPs capable of achieving the effluent limitations described in the permit.
- **Policy NR-3.11: Industrial Stormwater Permits.** The County shall require that new industrial development project applicants apply for a General Industrial Stormwater Permit from the CVRWQCB for any discharges into area surface waters.
- **Policy NR-3.12: CVRWQCB Consultation.** The County shall require that new development project applicants consult with the CVRWQCB to determine specific WDRs for each facility.
- **GOAL HS-2: Flooding.** To protect the lives and property of the workers, residents, visitors, and property owners in Sunset Area from hazards associated with development in floodplains and manage floodplains for their natural resource values.
  - **Policy HS-2.2: Flood Hazard Evaluation and Mitigation.** The County shall require new discretionary development project applicants to evaluate and mitigate potential flood hazards prior to project approval. The County shall require applicants to submit accurate topographic and flow characteristics information and depict the 100-year floodplain limits under fully-developed, unmitigated runoff conditions. Where public facilities have been constructed or lands have been acquired, with the specific intent of mitigating stormwater runoff, such facilities or lands may be taken into consideration when determining the extent of the 100-year floodplain.

## 12.3 Impact Analysis and Mitigation Measures

### 12.3.1 Thresholds of Significance

The thresholds of significance for assessing impacts come from the CEQA Checklist. For hydrology and water quality, the CEQA Checklist asks if the project would do the following:

- Violate any water quality standards or WDRs 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 that would

- Result in substantial erosion or siltation on- or offsite?
- Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite?
- Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
- Impede or redirect flood flows?
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Because the project site is not located in flood hazard, tsunami, or seiche zones, the CEQA Checklist item referencing risk of release of pollutants caused by project inundation for either plan concept is not evaluated in this Draft EIR.

### 12.3.2 Impacts and Mitigation Measures

This section describes the hydrology and water quality impacts associated with the two plan concepts, mitigation measures for identified significant impacts, and the level of impact significance following implementation of the identified mitigation measures.

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<b>IMPACT 12-1</b>	<b>Potential for Solid Waste Project Elements to Violate Water Quality Standards or Substantially Degrade Surface Water Quality.</b> The solid waste management operations have the potential to violate water quality standards or WDRs or otherwise substantially degrade surface water quality. Because the project is required to comply with applicable laws and regulations, including amendment of the existing SWPPP, project impacts would be <b>less than significant</b> .
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#### Plan Concept 1

##### Surface Water Quality

Implementation of Plan Concept 1 would involve construction activities, including clearing, grading, stockpiling, and excavation. These activities have the potential to increase runoff because of temporary changes to surface contours. Sediment transport from construction work areas to adjacent water resources could contribute to water quality degradation. The erosion potential at the proposed project ranges from low to high: where work would occur in areas with flat to gentle sloping terrain, the erosion potential is low, but where work would occur on sloping terrain, including the landfill, the erosion potential is high. Therefore, the project would expand coverage for construction and operational activities under the existing IGP SWPPP to control impacts associated with stormwater runoff.

As described in Section 12.1.3, the surface water flows at the WPWMA facility are actively managed and monitored under the existing SWPPP (MBI 2015) issued for the WRSL and MRF in accordance with the SWRCB's General Permit for Storm Water Discharges Associated with Industrial Activities, IGP Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001 adopted by SWRCB.

Under Plan Concept 1, the existing SWPPP would be modified and implemented for each site covered by the permit, including the WRSL, MRF, composting, and other facilities. The SWPPP would include BMPs designed to prevent construction pollutants from contacting stormwater and to keep products of erosion from moving offsite into receiving waters throughout construction and the life of the project. The BMPs

would also address source control and, if necessary, pollutant control. As discussed in Project Description, Chapter 3, the project could potentially entail a diversion of organics from mixed solid waste (OPMSW) to aerated static pile composting. However, impacts associated with any changes in the increased diversion and processing of OPMSW would be negligible, because the volume of water discharged from the site would not increase, and changes would be covered in an amended IGP SWPPP.

In addition to SWPPP implementation at the landfill, Title 27 includes requirements for Water Monitoring in Subchapter 3 and in Section 20365, Precipitation and Drainage Controls, which require landfill units and their respective containment structures be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping. Project Plan Concept 1 would be required to continue to conform with Title 27 requirements. Therefore, with implementation of the applicable Title 27 regulations and project SWPPP, project impacts on surface water quality would be less than significant.

### Plan Concept 2

As described in Chapter 3, Project Description, the primary differences between Plan Concept 1 and Plan Concept 2 are related to where various facilities would be located on WPWMA's property and when various facilities would be developed. These differences do not change the conclusions identified for Plan Concept 1. As such, impacts related to violation of water quality standards or WDRs or otherwise substantial degradation of surface water quality as a result of implementing Plan Concept 2 would be the same as described for Plan Concept 1.

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<b>IMPACT 12-2</b>	<b>Potential for Solid Waste Project Elements to Violate Waste Discharge Requirements or Substantially Degrade Ground Water Quality.</b> The solid waste management operations have the potential to violate water quality standards or WDRs or otherwise substantially degrade groundwater quality. However, because the project is required to comply with applicable laws and regulations, including project WDRs, and the project involves removal of waste from unlined cells to lined cells, the project impacts are <b>less than significant</b> .
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### Plan Concept 1

#### Groundwater Quality.

The WPWMA currently operates under WDR Order No. R5-2007-0047 and Title 27 requirements for groundwater monitoring and will continue to operate in a manner consistent with these requirements under an amended WDR for the proposed expansion of solid waste project elements. As described in Section 12.2.2, Title 27 requires groundwater monitoring for Waste Disposal operations. As described in Section 12.1.3, WDR Order No. R5-2007-0047 requires that groundwater monitoring at the WPWMA facility be performed on a quarterly basis at the WRSL in accordance with the Monitoring and Reporting Program, including implementing the established groundwater detection monitoring and corrective action programs to identify, evaluate, and mitigate changes and groundwater quality. As discussed in Section 12.1.3, the existing groundwater monitoring program has detected VOCs that may be associated with LFG or migrating leachate, or both. The proposed project involves removing waste in the unlined landfill and putting it in a lined cell, eliminating the potential for LFG migration for that section of the landfill. Therefore, the proposed project provides potential improvement in groundwater quality by removing an ongoing source of contamination. Therefore, project impacts are less than significant.

### ***Plan Concept 2***

As described in Chapter 3, Project Description, the primary differences between Plan Concept 1 and Plan Concept 2 are related to where various facilities would be located on WPWMA's property and when various facilities would be developed. These differences do not change the conclusions identified for Plan Concept 1. As such, impacts related to violation of WDRs or otherwise substantial degradation of groundwater quality as a result of implementing Plan Concept 2 would be the same as described for Plan Concept 1.

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<b>IMPACT 12-3</b>	<b>Potential for Waste Excavation and Relocation to Degrade Surface Water or Groundwater Quality.</b> The excavation and relocation of previously buried waste would eliminate a long-term source of groundwater contamination. However, during waste excavation and relocation activities, the excavated waste would be exposed to water and wind erosion, which could degrade surface water quality. In addition, the percolation of water through the exposed waste could degrade groundwater quality. The potential for these activities to degrade surface water and groundwater quality would be considered a <b>significant</b> impact.
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### **Plan Concept 1**

Removing and relocating previously buried waste would expose these materials during the construction period to erosive forces, including wind and rain, that could transport contaminants into local water bodies. If contaminants are transported to local water bodies, surface water quality would be degraded, and over time, groundwater supplies could also be degraded. In addition, the percolation of water through the exposed waste could contribute to groundwater contamination. Established water quality standards could be violated depending upon the level of surface and groundwater exposure to contaminants.

Under Plan Concept 1, the duration of the waste excavation and relocation is estimated to occur over approximately 5 years, with the activities occurring during the spring through fall construction period to avoid winter storm events.

Increases in groundwater recharge and migration of contaminants vertically downward to the shallow aquifer may occur as protective vegetative cover and paved surfaces are removed during construction and landfill cover and waste is excavated from existing pre-Subtitle D unlined landfill modules to new Subtitle D-compliant lined landfill modules. However, because the waste excavation and relocation component of the proposed project would remove waste from the soil-lined area, Plan Concept 1 may also reduce the potential for future groundwater contamination by placing the waste in a composite-lined module. As discussed in Section 12.1.3, the existing groundwater monitoring program has detected VOCs associated with LFG. Removing that waste and putting it in a lined cell would eliminate the potential for LFG migration for that section of the landfill and provide potential improvement in groundwater quality by removing an ongoing source of contamination.

Exposure of waste to precipitation and surface water runoff during waste excavation and relocation has the potential to affect surface water quality directly and groundwater quality indirectly through infiltration of surface water affected by exposure to waste. The impact from implementing Plan Concept 1 would be significant, and Mitigation Measure 12-3 would be implemented.

## Plan Concept 2

Under Plan Concept 2, the duration of waste excavation and relocation would be conducted over a shorter period of time (approximately 5 years) than Plan Concept 1. A shorter duration for performing waste excavation and relocation activities involves more equipment traffic and greater volumes of material moved on a day-to-day basis, which presents a more intense construction presence than Plan Concept 1. Impacts related to violation of water quality standards or WDRs or otherwise substantial degradation of surface water or groundwater quality as a result of implementing Plan Concept 2 would be significant, and Mitigation Measure 12-3 would be implemented, as described for Plan Concept 1.

Similar to Plan Concept 1, the removal of waste from a non-Subtitle-D-lined section of the landfill has the potential to result in a beneficial impact on groundwater quality as discussed for Plan Concept 1, where LFG migration to groundwater would be potentially eliminated by moving the waste from an unlined cell to a lined cell. The potential benefit to groundwater from removing waste from the soil-lined landfill would occur sooner under Plan Concept 2 than Plan Concept 1, because the waste would be removed on a shorter timeline under Plan Concept 2.

### **Mitigation Measure 12-3: Potential for Waste Excavation and Relocation to Degrade Surface Water or Groundwater Quality.**

To implement the state and local regulatory policies intended to address the potential for violating water quality standards or WDRs, or otherwise substantially degrading surface or ground water quality, the WPWMA shall do the following:

- Amend the existing project SWPPP for the waste excavation and relocation component of the project. The SWPPP may include the following BMPs:
  - Where excavation and removal occurs over a unlined area, the project will implement secondary containment in the direct path of hauling and removal.
  - Avoidance of excavation and relocation of waste between October 15 and April 30 unless such activities are adequately mitigated to avoid impacts during the rainy season.
  - If excavation and relocation of waste activities cannot be avoided during this period, the project would implement use of tarps or soil cover over the exposed face overnight and when the activity will not occur for more than 24 hours.

The SWPPP will be prepared and implemented prior to ground-disturbing activities commencing for the waste excavation and relocation component of the proposed project.

### **Level of Significance after Mitigation.**

Implementation of Mitigation Measure 12-3 establishes necessary development and implementation of an activity-specific SWPPP for waste excavation and relocation, including limitations on the timing of construction and waste excavation and relocation activities. Obtaining and complying with the SWPPP will mitigate the potential for violating water quality standards or WDRs or otherwise substantially degrading surface water or groundwater quality from waste excavation and relocation and reduce the impact to **less than significant after mitigation**.



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<b>IMPACT 12-4</b>	<b>Potential for Programmatic Elements to Degrade Water Quality.</b> The complementary and programmatic elements have the potential to violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Because site-specific SWPPPs would be prepared for these project elements, impacts would be <b>less than significant</b> .
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### Plan Concept 1

In addition to solid waste elements, complementary and programmatic elements may be developed on the WPWMA's properties. Under the project level, for Plan Concept 1, up to 300,000 square feet of building plus exterior infrastructure are reserved in the northern portion of the western property for the complementary solid waste management elements. Under the programmatic level, for Plan Concept 1, up to 1.9 million square feet have been reserved for these elements primarily within the northern and southern extents of the western property, and on the center property. However, opportunities may arise that would support locating some of these complementary and programmatic elements nearer to the solid waste project elements or within areas not yet developed with solid waste project elements.

Construction activities associated with the project level of complementary elements include clearing, grading, stockpiling, and excavation. These activities have the potential to increase runoff because of temporary changes to surface contours. Sediment transport from construction work areas to adjacent water resources could contribute to water quality degradation. The erosion potential at the proposed project ranges from low to high: where work would occur in areas with flat to gentle sloping terrain, the erosion potential is low, but where work would occur on sloping terrain, including the landfill, the erosion potential is high. The proposed complementary elements included in this project would obtain coverage for construction and operational activities under the CGP and implement an SWPPP (or site-specific SWPPPs) to control impacts associated with stormwater runoff. Therefore, construction of the project level of complementary elements would have a less-than-significant impact on water quality.

Buildout of the programmatic elements involve the same construction activities identified for the project level. Construction of the additional programmatic elements (1.6 million sf) would also require separate, project-specific SWPPPs for each project. The site-specific SWPPPs would include BMPs designed to prevent construction pollutants from contacting stormwater and to keep products of erosion from moving offsite into receiving waters throughout construction and the life of the project. The BMPs would also address source control and, if necessary, pollutant control. Therefore, the impact associated with the potential to violate water quality standards or WDRs or otherwise substantially degrade surface water or groundwater quality for the complementary and programmatic elements of the proposed project would be less than significant.

### Plan Concept 2

As described in Chapter 3, Project Description, the primary differences between Plan Concept 1 and Plan Concept 2 are related to where various facilities would be located on WPWMA's property and when various facilities would be developed. These differences do not change the conclusions identified for programmatic elements under Plan Concept 1. Plan Concept 2 would obtain coverage for construction activities under the CGP and implement an SWPPP (or site-specific SWPPPs) to control impacts associated with stormwater runoff at complementary and programmatic elements. As such, impacts related to violation of water quality standards or WDRs or otherwise substantial degradation of surface water or groundwater quality as a result of implementation of Plan Concept 2 would be the same as described for Plan Concept 1.

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<b>IMPACT</b> <b>12-5</b>	<b>Potential to Decrease Groundwater Supplies or Interfere with Groundwater Recharge.</b> The project does not propose to increase the use of groundwater supplies for the waste management operations or the complementary and programmatic elements. Also, the project site is not located within a groundwater recharge area and would not be expected to substantially interfere with groundwater recharge. Therefore, the project would be expected to have a <b>less-than-significant</b> impact on groundwater supplies and groundwater recharge.
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### Plan Concept 1

Under Plan Concept 1, the use of water would increase during construction activities for dust control; however, the WPWMA does not intend to use groundwater for this activity. The WPWMA also does not anticipate increasing groundwater use over the long-term, except as noted in Section 12.1.3 regarding a possible seasonal groundwater pump-and-treat system, to support expansion of the landfill and associated operations, such as soil and waste compaction and vegetative landfill cover watering. The WPWMA plans to supplement the current groundwater supply with alternative sources of water; for example, the WPWMA intends to use recycled water currently available from the City of Lincoln's Wastewater Treatment Plant and piped to the intersection of Athens and Fiddyment Road, where it is used for agricultural purposes and excess potable water capacity. Although the SAP EIR states groundwater wells within the area would be used only during emergency and single dry-year situations, the WPWMA would continue to use groundwater at operational levels to support its operations. With implementation of an expanded groundwater monitoring program, including wells located at the project perimeter as shown on Figure 3-11, the WPWMA would monitor their use and impact on groundwater levels in the surrounding area.

There is potential for groundwater recharge to be reduced because of an increase in area of impervious surfaces associated with expansion of the MRF building, organics management operation, construction and demolition materials processing operation, and public waste drop-off area operations. Expansion of the landfill disposal capacity development and development of the complementary and programmatic elements over areas currently covered with native soil will also reduce the area available for infiltration of surface water to recharge groundwater. The site is underlain by mostly fine-grained silts and clays that do not facilitate percolation of large quantities of water for groundwater recharge, and thus, the project site is not considered a significant groundwater recharge area compared with the recharge that occurs via surface water drainages in the area. Groundwater recharge is not anticipated to significantly decrease such that sustainable groundwater management would be impeded.

Although the project components, including complementary and programmatic elements, may result in increased impervious surfaces, the potential impact on groundwater recharge resulting from the increase in the extent of impervious surfaces would be minimized by the incorporation of the LID Manual measures (discussed in Section 12.2.3) that allow infiltration of stormwater onsite in conformance with SAP Policy LU/ED-3.12: Impervious Surfaces/Low-Impact Development. Under this policy, the County requires that all new discretionary development be designed in accordance with the LID Manual to incorporate site design measures and LID features to infiltrate runoff from impervious surfaces.

Because the project is not anticipated to interfere with groundwater supply or recharge, impacts associated with implementation of Plan Concept 1 are less than significant.

## Plan Concept 2

As described in Chapter 3, Project Description, the primary differences between Plan Concept 1 and Plan Concept 2 are related to where various facilities would be located on WPWMA's property and when various facilities would be developed. These differences do not change the conclusions identified for Plan Concept 1. As such, impacts related to substantially decreasing groundwater supplies or interfering substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin as a result of implementing Plan Concept 2 would be the same as described for Plan Concept 1.

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<b>IMPACT 12-6</b>	<b>Potential to Increase Runoff and Localized or Downstream Flooding.</b> Implementation of the proposed project would result in an increase in impervious surfaces on the project site and altered drainage patterns, which would lead to an increase in stormwater runoff compared with existing conditions. The project site is not located within a 100-year floodplain or designated flood hazard zone. Also, the proposed project's stormwater collection system would be designed to capture and retain project-related increases in peak stormwater discharge on the project site. Therefore, the proposed project would not be expected to contribute to localized or downstream flooding, and this impact would be <b>less than significant</b> .
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## Plan Concept 1

As described in Section 12.1.3, the surface water flows at the WPWMA facility are actively managed by using an engineered stormwater management system, including engineered paved areas and landscaped areas to prevent erosion; unlined and lined swales, pipes, and other drainage conveyance features; and sedimentation basins, water detention ponds, and other stormwater collection features. Stormwater monitoring is conducted at the WRSL and MRF under the SWPPP (MBI 2015) in accordance with the SWRCB's General Permit for Storm Water Discharges Associated with Industrial Activities, IGP Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001 adopted by SWRCB.

As discussed in Impacts 12-1, 12-2, and 12-3, the project would obtain coverage for construction activities by amending the existing IGP SWPPP or obtaining coverage under the CGP and implementing a SWPPP (or site-specific SWPPPs) to control impacts associated with stormwater runoff. In addition to the project SWPPPs, Title 27 regulations require that landfill units and their respective containment structures be designed and constructed to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping. With implementation of the applicable laws and regulations, the proposed project would not result in substantial erosion or siltation onsite or offsite.

The project is not located in a 100-year floodplain or designated flood hazard zone. In addition to implementation of the SWPPP and Title 27 measures described earlier, although the project would result in increased area of impervious surfaces, runoff would be minimized by the incorporation of the LID Manual measures (discussed in Section 12.2.3); therefore, the project would not result in a substantial increase in the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite.

Furthermore, the SAP storm drain system would be designed to accommodate buildout stormwater conveyance, so that new development within the SAP area would not generate runoff that exceeds the capacity of the system's ability to handle. Therefore, the project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

Because the project is not located within a 100-year floodplain or designated flood hazard zone, the project would not impede or redirect flood flows, as measures from the SWPPP, Title 27 measures, and incorporation of LID measures would minimize runoff from the site.

Thus, implementation of all applicable laws and regulations described previously would mean that impacts are less than significant.

### Plan Concept 2

As described in Chapter 3, Project Description, the primary differences between Plan Concept 1 and Plan Concept 2 are related to where various facilities would be located on WPWMA's property and when various facilities would be developed. These differences do not change the conclusions identified for Plan Concept 1. As such, impacts related to substantially altering drainage patterns and substantially increasing the rate or amount of surface runoff in a manner that would result in flooding onsite or offsite, creating or contributing runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or providing substantial additional sources of polluted runoff as a result of implementing Plan Concept 2 would be the same as described for Plan Concept 1.

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<b>IMPACT 12-7</b>	<b>Potential Conflicts with Applicable Water Quality Control Plan.</b> Implementation of applicable laws and regulations would mean that impacts are <b>less than significant</b>
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### Plan Concept 1

As described Section 12.2.2, the Porter-Cologne Act requires adoption of water quality control plans that contain the guiding policies of water pollution management in California. As described in Section 12.1.2, the project site is located within the Sacramento Hydrologic Basin. CVRWQCB adopted the Water Quality Control Plan for the Sacramento and San Joaquin Basin (Basin Plan) of 2018. According to the Basin Plan, the project area is within municipal and domestic water supply beneficial use designations for surface water by the CVRWQCB. The Basin Plan requires that these uses be protected by implementing water discharge requirements and permits, including NPDES permits.

As described earlier for Impacts 12-1 and 12-3, the project would result in a less-than-significant impact on water quality because of implementation of project SWPPPs, compliance with Title 27 regulations, and expanded environmental monitoring systems. Thus, implementation of all applicable laws and regulations described earlier would mean that the project-level solid waste management and complementary and programmatic elements of the proposed project would not conflict with or obstruct implementation of the Basin Plan, and thus, project impacts are less than significant.

### Plan Concept 2

As described in Chapter 3, Project Description, the primary differences between Plan Concept 1 and Plan Concept 2 are related to where various facilities would be located on the WPWMA's property and when various facilities would be developed. These differences do not change the conclusions identified for Plan Concept 1. As such, impacts related to conflicting with or obstructing implementation of a water quality control plan or sustainable groundwater management plan as a result of implementing Plan Concept 2 would be the same as described for Plan Concept 1.

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<b>IMPACT 12-8</b>	<b>Potential for Waste Excavation and Relocation to Conflict with or Obstruct Implementation of a Water Quality Control Plan.</b> Project impacts would be <b>less than significant</b> .
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### Plan Concept 1

As described in Section 12.1.3, the surface water flows at the WPWMA facility are actively managed by using an engineered stormwater management system, including engineered paved areas and landscaped areas to prevent erosion; unlined and lined swales, pipes, and other drainage conveyance features; and sedimentation basins, water detention ponds, and other stormwater collection features. Stormwater monitoring is conducted at the WRSL and MRF under the SWPPP (MBI 2015) in accordance with the SWRCB's General Permit for Storm Water Discharges Associated with Industrial Activities, IGP Order No. 2014-0057-DWQ, NPDES General Permit No. CAS000001 adopted by SWRCB. Leachate, unsaturated zone, and groundwater monitoring are implemented regularly at the WRSL under the WDRs, which include a groundwater detection monitoring program and groundwater CAP.

As described in Sections 3.5.3.4 and 3.6.3.4, the proposed project includes excavation and relocation of existing solid waste. Implementation of Plan Concept 1 will substantially alter existing drainage patterns, temporarily increase areas of exposed waste, and alter groundwater recharge patterns and locations associated with the waste excavation and relocation component of the proposed project. Exposure of waste to precipitation and surface water runoff during waste excavation and relocation has the potential to affect surface water quality directly and groundwater quality indirectly through infiltration of surface water affected by exposure to waste. Therefore, the proposed project would maintain and expand coverage under the existing IGP SWPPP for the waste excavation and relocation activities. With implementation of measures in a SWPPP for waste excavation and relocation activities, including Mitigation Measure 12-3 described earlier, impacts would be less than significant.

### Plan Concept 2

As described in Chapter 3, Project Description, the primary differences between Plan Concept 1 and Plan Concept 2 are related to where various facilities would be located on WPWMA's property and when various facilities would be developed. Under Plan Concept 2, the duration of waste excavation and relocation would be conducted over a shorter period of time (approximately 3 years) compared with Plan Concept 1. These differences do not change the conclusions identified for Plan Concept 1. As such, impacts related to conflicting with or obstructing implementation of a water quality control plan or sustainable groundwater management plan as a result of implementing Plan Concept 2 would be the same as described for Plan Concept 1.

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