Hydrology and Water Quality
Chapter 3.9

SUMMARY OF FINDINGS

The proposed Project will result in ***Less Than Significant Impacts with Mitigation*** related to Hydrology and Water Quality. A detailed review of potential impacts is provided in the following analysis.

INTRODUCTION

California Environmental Quality Act (CEQA) Requirements

This section of the Draft Environmental Impact Report (DEIR) addresses potential impacts to Hydrology and Water Quality. As required in Section 15126, all phases of the proposed Project will be considered was part of the potential environmental impact.

As noted in 15126.2 (a), "[a]n EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area, as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, the human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected. For example, an EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision would have the effect of attracting people to the location and exposing them to the hazards found there. Similarly, the EIR should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas) as identified in authoritative hazard maps, risk assessments or in land use plans addressing such hazards areas."[1]

The environmental setting provides a description of the Hydrology and Water Quality in the County. The regulatory setting provides a description of applicable Federal, State and Local regulatory policies that were developed in part from information contained in the Tulare County 2030 General Plan, Tulare County General Plan Background Report and/or Tulare County General Plan Revised DEIR incorporated by reference and summarized below.

[1] CEQA Guidelines, Section 15126.2 (a)

Additional documents utilized are noted as appropriate. A description of the potential impacts of the proposed Project is provided and includes the identification of feasible mitigation measures (if necessary and feasible) to avoid or lessen the impacts.

Thresholds of Significance

The thresholds of significance for this section are established by the CEQA checklist item questions. The following are potential thresholds for significance.

- Project not in compliance with the regulations outlined by the State Water Resources Control Board.
- Project not in compliance with the regulations by the Regional Water Quality Control Board.
- Design of stormwater facilities will not adequately protect surface water quality.
- Project will cause erosion.
- Project will alter watercourse and increase flooding impacts.
- Project's water usage not assessed in the Tulare County 2030 General Plan (General Plan Amendment, Zone Change, etc.).
- Project that will impact service levels of a Water Services District.
- Project includes or requires an expansion of a Water Service District.
- Project in flood zone.
- Project will create a flood safety hazard.
- Project located immediately downstream of a dam.
- Project violate any water quality standards or waste discharge requirements.
- Project will substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted*)*.
- Project will substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- Project will substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- Project will create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

- Project will otherwise substantially degrade water quality; place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.
- Project will place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- Project will expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; and/or be subject to inundation by seiche, tsunami, or mudflow.

ENVIRONMENTAL SETTING

"The Tulare Lake Hydrologic Region covers approximately 10.9 million acres (17,050 square miles) and includes all of Kings and Tulare counties and most of Fresno and Kern counties... The southern portion of the San Joaquin Valley is subdivided into two separate basins, the San Joaquin and the Tulare, by a rise in the valley floor resulting from an accumulation of alluvium between the San Joaquin River and the Kings River fan. The valley floor in this region had been a complex series of interconnecting natural sloughs, canals, and marshes."[2]

"The Basin is one of the most important agricultural centers of the world. Industries related to agriculture, such as food processing and packaging (including canning, drying, and wine making), are prominent throughout the area. Producing and refining petroleum lead non-agricultural industries in economic importance."3

The Tulare Lake Hydrologic Region has watershed areas (surface water) and groundwater sub-basin areas as seen in Figure 3.9-1.

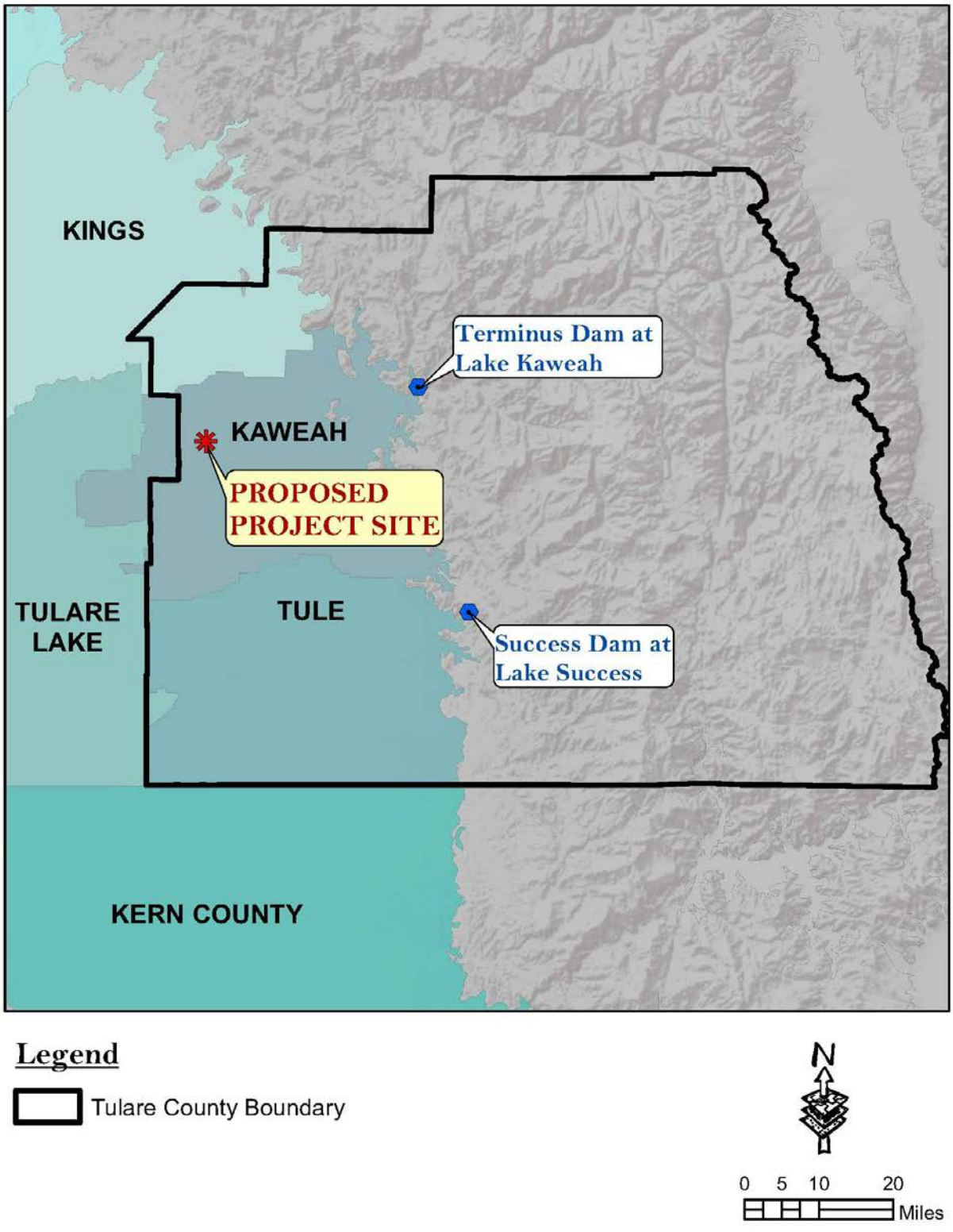
Watershed (Surface Water)

"The Tulare Lake region is divided into several main hydrologic subareas: the alluvial fans from the Sierra foothills and the basin subarea (in the vicinity of the Kings, Kaweah, and Tule rivers and their distributaries); the Tulare Lake bed; and the southwestern uplands. The alluvial fan/basin subarea is characterized by southwest to south flowing rivers, creeks, and irrigation canal systems that convey surface water originating from the Sierra Nevada. The dominant hydrologic features in the alluvial fan/basin subarea are the Kings, Kaweah, Tule, and Kern rivers and their major distributaries."[4]

"Surface water from the Tulare Lake Basin only drains north into the San Joaquin River in years of extreme rainfall. This essentially closed basin is situated in the topographic horseshoe formed by the Diablo and Temblor Ranges on the west, by the San Emigdio and Tehachapi Mountains on the south, and by the Sierra Nevada Mountains on the east and southeast."[5]

[2] California Water Plan Update 2009, Tulare Lake, page TL-5
[3] Water Quality Control Plan for the Tulare Lake Basin, page I-1
[4] California Water Plan Update 2009, Tulare Lake, page TL-8
[5] Water Quality Control Plan for the Tulare Lake Basin, page I-1

Figure 3.9-1 - Watershed Map



Surface Water Quality

"Surface water quality in the Basin is generally good, with excellent quality exhibited by most eastside streams. The Regional Water Board intends to maintain this quality."[6] Specific objectives outlined in the Water Quality Control Plan are listed below: [7]

- **Ammonia:** Waters shall not contain un-ionized ammonia in amounts which adversely affect beneficial uses. In no case shall the discharge of wastes cause concentrations of un-ionized ammonia (NH3) to exceed 0.025 mg/l (as N) in receiving waters.
- **Bacteria:** In waters designated REC-1, the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.
- **Biostimulatory Substances:** Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
- **Chemical Constituents:** Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.
- **Color:** Waters shall be free of discoloration that causes nuisance or adversely affects beneficial uses.
- **Dissolved Oxygen:** Waste discharges shall not cause the monthly median dissolved oxygen concentrations (DO) in the main water mass (at centroid of flow) of streams and above the thermocline in lakes to fall below 85 percent of saturation concentration, and the 95 percentile concentration to fall below 75 percent of saturation concentration.
- **Floating Material:** Waters shall not contain floating material, including but not limited to solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.
- **Oil and Grease:** Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
- **pH:** The pH of water shall not be depressed below 6.5, raised above 8.3, or changed at any time more than 0.3 units from normal ambient pH.
- **Pesticides:** Waters shall not contain pesticides in concentrations that adversely affect beneficial uses.
- **Radioactivity:** Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life nor which result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life
- **Salinity:** Waters shall be maintained as close to natural concentrations of dissolved

[6] Water Quality Control Plan for the Tulare Lake Basin, page III-3
[7] Ibid. III-2 to III-7

matter as is reasonable considering careful use of the water resources.

- **Sediment:** The suspended sediment load and suspended sediment discharge rate of waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
- **Settleable Material:** Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses.
- **Tastes and Odors:** Waters shall not contain taste- or odor-producing substances in concentrations that cause nuisance, adversely affect beneficial uses, or impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to domestic or municipal water supplies.
- **Temperature:** Natural temperatures of waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.
- **Toxicity:** All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life…
- **Turbidity:** Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.

Surface Water Supply

"Surface water supplies for the Tulare Lake Basin include developed supplies from the Central Valley Project (CVP), the State Water Project (SWP), rivers, and local projects. Surface water also includes the supplies for required environmental flows. Required environmental flows are comprised of undeveloped supplies designated for wild and scenic rivers, supplies used for instream flow requirements, and supplies used for Bay-Delta water quality and outflow requirements. Finally, surface water includes supplies available for reapplication downstream. Urban wastewater discharges and agricultural return flows, if beneficially used downstream, are examples of reapplied surface water."[8]

"Along the eastern edge of the valley, the Friant-Kern Canal is used to divert San Joaquin River water from Millerton Lake for delivery to agencies extending into Kern County. All of the Tulare Lake region's streams are diverted for irrigation or other purposes, except in the wettest years. Historically, they drained into Tulare Lake, Kern Lake, or adjacent Buena Vista Lake. The latter ultimately drained to Tulare Lake, which is about 30 feet lower in elevation."[9]

"The Kings, Kaweah, Tule, and Kern Rivers, which drain the west face of the Sierra Nevada Mountains, are of excellent quality and provide the bulk of the surface water supply native to the Basin. Imported surface supplies, which are also of good quality, enter the Basin through the San Luis Canal/California Aqueduct System, Friant-Kern Canal, and the Delta- Mendota Canal. Adequate control to protect the quality of these resources is essential, as imported surface water supplies contribute nearly half the increase of salts occurring within the Basin."[10]

[8] Tulare County General Plan 2030 Update, Background Report. Page 10-7
[9] California Water Plan Update 2009, Tulare Lake. Page TL-5
[10] Water Quality Control Plan for the Tulare Lake Basin. Page I-1

Ground Water Sub Basin

"The Tulare Lake Hydrologic Region has 12 distinct groundwater basins and seven sub-basins of the San Joaquin Valley Groundwater Basin, which crosses north into the San Joaquin River Hydrologic Region. These basins underlie approximately 5.33 million acres (8,330 square miles) or 49 percent of the entire hydrologic region. Groundwater has historically been important to both urban and agricultural uses, accounting for 41 percent of the region's total annual supply and 35 percent of all groundwater use in the state. Groundwater use in the region represents about 10 percent of the state's overall water supply for agricultural and urban uses."[11]

"Water agencies in the Tulare Lake region have been practicing conjunctive use for many years to manage groundwater and assist dry year supplies. Groundwater recharge is primarily from rivers and natural streambeds, irrigation water percolating below the root zone of irrigated fields, direct recharge from developed ponding basins and water banks, and in-lieu recharge where surface water is made available in-lieu of groundwater pumping. Some water agencies accomplish recharge by directing available water into existing natural streambeds and sloughs, and others encourage application of water, when available, on farmed fields. The Deer Creek and Tule River Authority provides an example of how groundwater management activities can be coordinated with other resources. The authority, in conjunction with the US Bureau of Reclamation, has constructed more than 200 acres of recharge basins as part of its Deer Creek Recharge-Wildlife Enhancement Project. When available, the project takes surplus water during winter months and delivers it to the basins, which serve as winter habitat for migrating waterfowl, creating a significant environmental benefit. Most of the water also recharges into the underlying aquifer, thereby benefiting the local groundwater system."[12]

Groundwater Quality

Specific objectives outlined in the Water Quality Control Plan are listed below:

- **"Bacteria:** In ground waters designated MUN, the concentration of total coliform organisms over any 7-day period shall be less than 2.2/100 ml.
- **Chemical Constituents:** Ground waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.
- **Pesticides:** No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses.
- **Radioactivity:** Radionuclides shall not be present in ground waters in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life.
- **Salinity:** All ground waters shall be maintained as close to natural concentrations of dissolved matter as is reasonable considering careful use and management of water resources.
- **Tastes and Odors:** Ground waters shall not contain taste- or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

[11] California Water Plan Update 2009, Tulare Lake, page TL-9 to TL-10
[12] Ibid. TL-10

- **Toxicity:** Ground waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life associated with designated beneficial use(s)."[13]

According to the California Water Plan, the key ground water quality issues include the following.

> **"Salinity:** Salinity is the primary contaminant affecting water quality and habitat in the Tulare Lake region. Because the groundwater basin in the San Joaquin Valley portion of the region is an internally drained and closed basin, salts, much of which are introduced into the basin with imported water supplies, build up in the soil and groundwater. Salt contained in the imported water supply is the primary source of salt circulating in the Tulare Lake region. The California Aqueduct, Friant-Kern Canal, and to a less extent Delta Mendota Canal supply most of the higher quality surface irrigation water in the Tulare Lake region. The quality of this supply may be impaired by the recirculation of salts from the San Joaquin River to the Delta Mendota Canal intake pump, leading to a greater net accumulation of salts in the basin. Delivery data from the two major water projects in California indicate there is a substantial amount of salt being transported from the Delta to other basins throughout the state. Annual import of salt into the Tulare Lake region is estimated to be 1,206 thousand tons of salt. In situ dissolution of salts and pumping from the underlying confined aquifer are important secondary sources.
>
> **Sedimentation and Erosion:** In the Central Valley, erosion is occurring from the headwaters down to the valley floor. Although naturally occurring, erosion can be accelerated by timber harvest activities, land use conversion, rural development, and grazing. Excessive soil erosion and sediment delivery can impact the beneficial uses of water by (1) silting over fish spawning habitats; (2) clogging drinking water intakes; (3) filling in pools creating shallower, wider, and warmer streams and increasing downstream flooding; (4) creating unstable stream channels; and (5) losing riparian habitat. Timber harvesting in the riparian zone can adversely affect stream temperatures by removing stream shading, a concern for spawning and rearing habitat for salmonids. Thousands of miles of streams are potentially impacted, and the lack of resources has prevented a systematic evaluation of these impacts.
>
> **Nitrates and Groundwater Contaminates:** Groundwater is a primary water supply, but in many places it is impaired or threatened because of elevated levels of nitrates and salts that are derived principally from irrigated agriculture, dairies, wastewater discharges to land, and disposal of sewage from both community wastewater systems and septic tanks. As population has grown, many cities have struggled to fund improvements in wastewater systems. High TDS content of west-side water is due to recharge of stream-flow originating from marine sediments in the Coast Range.
>
> Naturally occurring arsenic and human-made organic chemicals—pesticides and industrial chemicals—in some instances have contaminated groundwater that is used as domestic water supplies in this region. In some cases, nitrates are from natural sources. Agricultural pesticides and herbicides have been detected throughout the valley, but primarily along the east side where soil permeability is higher and depth to groundwater

[13] Water Quality Control Plan for the Tulare Lake Basin, pages III-7 and III-8

is shallower. The most notable agricultural contaminant is DBCP, a now-banned soil fumigant and known carcinogen once used extensively on grapes."[14]

Groundwater Supply

"Surface water supplies tributary to or imported for use within the Basin are inadequate to support the present level of agricultural and other development. Therefore, ground water resources within the valley are being mined to provide additional water to supply demands."[15]

"Tulare Lake region's groundwater use rises and falls contingent on the availability of both local and imported surface supplies. The management of water resources within this region is a complex activity and critical to the region's agricultural operations. Local annual surface supplies are determined by the amount of runoff from the Sierra Nevada watersheds, the flows captured in local reservoirs, and carryover storage over a series of years. Imported surface supply availability is contingent not only on runoff in any year or series of years but also by regulations determining the amount of water that can be pumped month to month from the Sacramento-San Joaquin River Delta due to fishery and other concerns. The recent San Joaquin River settlement will reduce the overall volume of water available for diversion into the Friant-Kern Canal. The new biological opinion on the Operating Criteria and Plan (OCAP) for the SWP and CVP will impact surface water supplies to south-of-Delta water users."[16]

"Groundwater in Tulare County occurs in an unconfined state throughout, and in a confined state beneath its western portion. Extensive alluvial fans associated with the Kings, Kaweah, and Tule Rivers provide highly permeable areas in which groundwater in the unconfined aquifer system is readily replenished. Interfan areas between the streams contain less permeable surface soils and subsurface deposits, impeding groundwater recharge and causing well yields to be relatively low. The mineral quality of groundwater in Tulare County is generally satisfactory for all uses."[17] "Groundwater recharge is primarily from natural streams, other water added to streambeds, from deep percolation of applied irrigation water, and from impoundment of surface water in developed water bank/percolation ponds."[18]

"The Tulare Lake region has experienced water-short conditions for more than 100 years, which has resulted in a water industry that has consciously developed—through careful planning, management and facility design—the possibility of a shortage occurring in any year. Water demand is more or less controlled by available, reliable long-term water supplies. Over the years, agricultural acreage has risen and dropped largely based on water supplies. The region initially developed with surface water supplies; but local water users learned these supplies could widely vary in volume from year to year and drought conditions could quickly develop. The introduction of deep well turbines resulted in a dramatic rise in groundwater use in the early 1900s, subsequently resulting in dropping groundwater levels and land subsidence. Surface water storage and conveyance systems built to alleviate the overuse of groundwater provided an impounded supply of water that could be used during years with deficient surface water. This resulted in a regional reliance on conjunctive water use in the development of the local water economy. Efforts to address Delta environmental issues and the subsequent loss of surface water

[14] California Water Plan Update 2009, Tulare Lake, pages TL-22 to TL-24
[15] Water Quality Control Plan for the Tulare Lake Basin, page I-1
[16] Ibid. Pages TL-15 to TL-17
[17] Tulare County General Plan 2030 Update Background Report, page 10-11
[18] California Water Plan Update 2009, Tulare Lake, page TL-17

to the region is increasing groundwater use and creating concern that additional pumping will increase subsidence."[19]

According to the 2009 California Water Plan, water storage has fluctuated between 1998-2005. The data suggests that variations occur as a result of changing precipitation levels as seen in Table 3.9-1 and Figure 3.9-2.

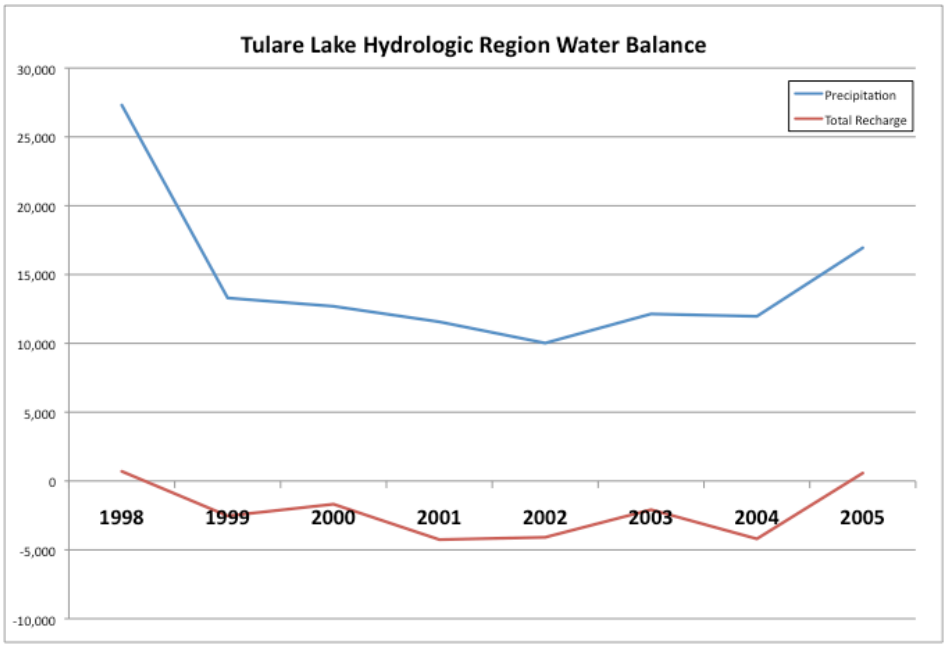
Table 3.9-1
Tulare Lake Hydrologic water balance for 1998-2005 (thousand acre-feet)[20]

Tulare Lake Region	Water Year							
	1998	1999	2000	2001	2002	2003	2004	2005
Water Entering the Region								
Precipitation	27,306	13,298	12,693	11,564	10,021	12,137	11,964	16,939
Inflow from Oregon/Mexico	0	0	0	0	0	0	0	0
Inflow from Colorado River	0	0	0	0	0	0	0	0
Imports from Other Regions	3,716	4,817	5,627	3,696	4,239	5,174	4,816	5,909
Total	**31,022**	**18,115**	**18,320**	**15,260**	**14,260**	**17,311**	**16,780**	**22,848**
Water Leaving the Region								
Consumptive Use of Applied Water	5,401	7,486	7,427	7,591	7,938	7,430	8,031	6,655
Outflow to Oregon/Nevado/Mexico	0	0	0	0	0	0	0	0
Exports to Other Regions	1,857	821	1,540	1,093	1,643	1,898	1,961	1,724
Statutory Required Outflow to Salt Sink	0	0	0	0	0	0	0	0
Additional Outflow to Salt Sink	457	456	457	458	305	458	457	300
Evaporation, Evapotranspiration of Native Vegetation, Groundwater Subsurface Outflows, Natural and Incidental Runoff, Ag Effective Precipitation & Other Outflows	22,606	11,885	10,578	10,374	8,462	10,327	10,532	13,596
Total	**30,321**	**20,648**	**20,002**	**19,516**	**18,348**	**20,113**	**20,981**	**22,274**
Storage Changes in Region: [+] Water added to storage, [-] Water removed from storage								
Change in Surface Reservoir Storage	438	-595	-57	-141	-161	173	-199	680
Change in Groundwater Storage	263	-1,938	-1,625	-4,115	-3,927	-2,975	-4,002	-106
Total	**701**	**-2,533**	**-1,682**	**-4,256**	**-4,088**	**-2,802**	**-4,201**	**574**

(This table does not include dairy usage)

[19] California Water Plan Update 2009, Tulare Lake. TL-19
[20] Ibid.

Figure 3.9-2
Tulare Lake Hydrologic Region Water Balance[21]



"Groundwater overdraft is expected to decline statewide by 2020. The reduction in irrigated acreage in drainage problem areas on the west side of the San Joaquin Valley is expected to reduce groundwater demands in the Tulare Lake region by 2020."[22] According to the 2009 California Water Plan Update, it is anticipated that there will be a 550,000 acre-feet reduction in the water demand in the Tulare Lake Hydrologic Area under Current Growth trends. Slow & Strategic Growth trends may further decrease water demand, while Expansive Growth trends may increase water demand.

"There are 19 entities in Tulare County with active programs of groundwater management. These management programs include nearly all types of direct recharge of surface water. Groundwater recovery is accomplished primarily through privately owned wells. Among the larger programs of groundwater management are those administered by the Kaweah Delta Water Conservation District, the Kings River Water Conservation District, the Tulare Irrigation District, the Lower Tule Water Users Association, and the Alta Irrigation District, utilizing water from the Friant-Kern Canal and local streams. The Kings River Water Conservation District covers the western county."[23]

Irrigation Districts in Tulare County

"The Tulare County Resource Management Agency maintains a list of special districts that provide sewer and/or water service that cannot currently meet the demand of new development projects. The list provided by Tulare County RMA (last updated April 30, 2007) indicates that

[21] California Water Plan Update 2009, Tulare Lake, Department of Water Resources
[22] Tulare County General Plan 2030 Update Background Report, page 10-11b
[23] Ibid. Page 10-12

following water and/or sewer districts are either under a temporary cease and desist order by the Regional Water Control Board prohibiting any new connections, or have other limitations for water and sewer connections."[24]

Table 3.9-2 - Irrigation Districts in Tulare County[25]

Entity	Surface Water	Imported Water Source	Groundwater Extraction
Alpaugh Irrigation District	NA	Friant-Kern Canal (1,000af average)	19,000 af
Alta Irrigation District	King River	Friant-Kern Canal (surplus)	230,000 af
Delano-Earlimart Irrigation District	NA	Friant-Kern Canal (146,050 af average)	8,000 af
Exeter Irrigation District	NA	Friant-Kern Canal (1,000 af average)	14,000 af
Hills Valley Irrigation District	NA	Cross Valley Canal (2,000 af average)	1,000 af
Ivanhoe Irrigation District	Kaweah River	Friant-Kern Canal (11,650 af average)	15,000 af
Kaweah Delta Water Cons. District	Kaweah River	Friant-Kern Canal (24,000 af average)	130,000 af
Kern-Tulare Water District	Kern River	Cross Valley Canal (41,000 af average)	33,000 af
Lindmore Irrigation District	NA	Friant-Kern Canal (44,000 af average)	28,000 af
Lower Tulare River Irrigation Dist.	Tule River	Friant-Kern Canal (180,200 af average) Cross Valley Canal (31,000 af average)	NA
Lindsay-Strathmore Irrigation District	NA	Friant-Kern Canal (24,150 af average)	NA
Orange Cove Irrigation District	NA	Friant-Kern Canal (39,200 af average)	30,000 af
Pioneer Water Irrigation District	Tule River		3,000 af
Pixley Irrigation District	NA	Friant-Kern Canal (1,700 af average) Cross Valley Canal (31,000 af average)	130,000 af
Porterville Irrigation District	Tule River	Friant-Kern Canal (31,000 af average)	15,000 af
Rag Gulch Water District	Kern River	Friant-Kern Canal (3,700 af average) Cross Valley Canal (13,300 af average)	
Saucelito Irrigation District	Tule River	Friant-Kern Canal (37,600 af average)	15,000 af
Stone Corral Irrigation District	NA	Friant-Kern Canal (10,000 af average)	5,000 af
Teapot Dome Irrigation District	NA	Friant-Kern Canal (5,600 af average)	
Terra Bella Irrigation District	NA	Friant-Kern Canal (29,000 af average)	2,000 af
Tulare Irrigation District	Kaweah River	Friant-Kern Canal (100,500 af average)	65,000 af

[24] California Water Plan Update 2009, Tulare Lake, page TL-17
[25] Bookman-Edmonston Engineering Inc. Water Resources Management in the Southern San Joaquin Valley, Table A-1.

Flooding

"Flooding is a natural occurrence in the Central Valley because it is a natural drainage basin for thousands of watershed acres of Sierra Nevada and Coast Range foothills and mountains. Two kinds of flooding can occur in the Central Valley: general rainfall floods occurring in the late fall and winter in the foothills and on the valley floor; and snowmelt floods occurring in the late spring and early summer. Most floods are produced by extended periods of precipitation during the winter months. Floods can also occur when large amounts of water (due to snowmelt) enter storage reservoirs, causing an increase in the amount of water that is released."[26]

"Flood events in the Tulare Lake region are caused by rainfall, snowmelt, and the resultant rising of normally dry lakes. Although significant progress has been made to contain floodwaters in the region, improvements to the flood control system are still needed to lessen the flood risk to life and property."[27]

"Official floodplain maps are maintained by the Federal Emergency Management Agency (FEMA). FEMA determines areas subject to flood hazards and designates these areas by relative risk of flooding on a map for each community, known as the Flood Insurance Rate Map (FIRM). A 100-year flood is considered for purposes of land use planning and protection of property and human safety. The boundaries of the 100-year floodplain are delineated by FEMA on the basis of hydrology, topography, and modeling of flow during predicted rainstorms."[28]

"The flood carrying capacity in rivers and streams has decreased as trees, vegetation, and structures (e.g., bridges, trestles, buildings) have increased along the Kaweah, Kings, and Tule Rivers. Unsecured and uprooted material can be carried down a river, clogging channels and piling up against trestles and bridge abutments that can, in turn, give way or collapse, increasing blockage and flooding potential. Flooding can force waters out of the river channel and above its ordinary floodplain. Confined floodplains can result in significantly higher water elevations and higher flow rates during high runoff and flood events."[29]

"Dam failure can result from numerous natural or human activities, such as earthquakes, erosion, improper siting, rapidly rising flood waters, and structural and design flaws. Flooding due to dam failure can cause loss of life, damage to property, and other ensuing hazards. Damage to electric-generating facilities and transmission lines associated with hydro-electric dams could also affect life support systems in communities outside the immediate hazard area."[30]

REGULATORY SETTING

Federal Agencies & Regulations

Clean Water Act/NPDES

"The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.

[26] Tulare County General Plan 2030 Update Background Report, page 8-13
[27] California Water Plan Update 2009, Tulare Lake, page TL-28 to TL-29
[28] Tulare County General Plan 2030 Update Background Report, page 8-14
[29] Ibid.
[30] Ibid. Page 8-17

The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the Act was significantly reorganized and expanded in 1972. "Clean Water Act" became the Act's common name with amendments in 1972… Under the CWA, EPA has implemented pollution control programs such as setting wastewater standards for industry. We have also set water quality standards for all contaminants in surface waters… The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters."[31]

Safe Drinking Water Act

"The Safe Drinking Water Act (SDWA) is the main federal law that ensures the quality of Americans' drinking water. Under SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards… SDWA was originally passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply. The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources: rivers, lakes, reservoirs, springs, and ground water wells. (SDWA does not regulate private wells which serve fewer than 25 individuals.)"[32]

Environmental Protection Agency

The mission of EPA is to protect human health and the environment.

"EPA's purpose is to ensure that:

- all Americans are protected from significant risks to human health and the environment where they live, learn and work;
- national efforts to reduce environmental risk are based on the best available scientific information;
- federal laws protecting human health and the environment are enforced fairly and effectively;
- environmental protection is an integral consideration in U.S. policies concerning natural resources, human health, economic growth, energy, transportation, agriculture, industry, and international trade, and these factors are similarly considered in establishing environmental policy;
- all parts of society -- communities, individuals, businesses, and state, local and tribal governments -- have access to accurate information sufficient to effectively participate in managing human health and environmental risks;
- environmental protection contributes to making our communities and ecosystems diverse, sustainable and economically productive; and

[31] U.S. Environmental Protection Agency. Summary of the Clean Water Act – http://www.epa.gov/lawsregs/laws/cwa.html. Accessed June, 2014.
[32] U.S. Environmental Protection Agency. Summary of the Safe Drinking Water Act – http://water.epa.gov/lawsregs/rulesregs/sdwa/index.cfm. Accessed June, 2014.

- the United States plays a leadership role in working with other nations to protect the global environment."[33]

Army Corps of Engineers (Corps)

"The Department of the Army Regulatory Program is one of the oldest in the Federal Government. Initially it served a fairly simple, straightforward purpose: to protect and maintain the navigable capacity of the nation's waters. Time, changing public needs, evolving policy, case law, and new statutory mandates have changed the complexion of the program, adding to its breadth, complexity, and authority.

The Regulatory Program is committed to protecting the Nation's aquatic resources, while allowing reasonable development through fair, flexible and balanced permit decisions. The Corps evaluates permit applications for essentially all construction activities that occur in the Nation's waters, including wetlands."[34]

National Flood Insurance Program

"In 1968, Congress created the National Flood Insurance Program (NFIP) to help provide a means for property owners to financially protect themselves. The NFIP offers flood insurance to homeowners, renters, and business owners if their community participates in the NFIP. Participating communities agree to adopt and enforce ordinances that meet or exceed FEMA requirements to reduce the risk of flooding."[35]

State Agencies & Regulations

The Porter-Cologne Water Quality Control Act

"Under the Porter-Cologne Water Quality Control Act (Porter-Cologne), the State Water Resources Control Board (State Board) has the ultimate authority over State water rights and water quality policy. However, Porter-Cologne also establishes nine Regional Water Quality Control Boards (Regional Boards) to oversee water quality on a day-to-day basis at the local/regional level."[36]

State Water Quality Control Board

"The State Water Resources Control Board (State Water Board) was created by the Legislature in 1967. The joint authority of water allocation and water quality protection enables the State Water Board to provide comprehensive protection for California's waters. The State Water Board consists of five full-time salaried members, each filling a different specialty position. Board members are appointed to four-year terms by the Governor and confirmed by the Senate."[37]

Regional Water Quality Control Board

"There are nine Regional Water Quality Control Boards (Regional Boards). The mission of the Regional Boards is to develop and enforce water quality objectives and implementation plans

[33] U.S. Environmental Protection Agency. What we do. http://www.epa.gov/aboutepa/whatwedo.html. Accessed June, 2014.
[34] Army Corps of Engineers http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx. Accessed June, 2014.
[35] National Flood Insurance Program Summary: http://www.floodsmart.gov/floodsmart/pages/about/nfip_overview.jsp. Accessed June, 2014.
[36] California Department of Water Resources. Porter-Cologne Water Quality Control Act Summary, http://ceres.ca.gov/wetlands/permitting/Porter_summary.html. Accessed June, 2014.
[37] State Water Board, http://www.waterboards.ca.gov/about_us/water_boards_structure/mission.shtml. Accessed June, 2014.

that will best protect the State's waters, recognizing local differences in climate, topography, geology and hydrology. Each Regional Board has seven part-time members appointed by the Governor and confirmed by the Senate. Regional Boards develop "basin plans" for their hydrologic areas, issue waste discharge requirements, take enforcement action against violators, and monitor water quality."[38]

"The primary duty of the Regional Board is to protect the quality of the waters within the Region for all beneficial uses. This duty is implemented by formulating and adopting water quality plans for specific ground or surface water basins and by prescribing and enforcing requirements on all agricultural, domestic and industrial waste discharges. Specific responsibilities and procedures of the Regional Boards and the State Water Resources Control Board are contained in the Porter-Cologne Water Quality Control Act."[39]

California Department of Water Resources

"This Department's primary mission 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. Other goals include:

Goal 1 - Develop and assess strategies for managing the State's water resources, including development of the California Water Plan Update.

Goal 2 - Plan, design, construct, operate, and maintain the State Water Project to achieve maximum flexibility, safety, and reliability.

Goal 3 - Protect and improve the water resources and dependent ecosystems of statewide significance, including the Sacramento-San Joaquin Bay-Delta Estuary.

Goal 4 - Protect lives and infrastructure as they relate to dams, floods, droughts, watersheds impacted by fire and disasters, and assist in other emergencies.

Goal 5 - Provide policy direction and legislative guidance on water and energy issues and educate the public on the importance, hazards, and efficient use of water.

Goal 6 - Support local planning and integrated regional water management through technical and financial assistance.

Goal 7 - Perform efficiently all statutory, legal, and fiduciary responsibilities regarding management of State long-term power contracts and servicing of power revenue bonds.

Goal 8 - Provide professional, cost-effective, and timely services in support of DWR's programs, consistent with governmental regulatory and policy requirements.[40]

SB 610 (Costa, 2001)

This Bill requires additional information to be included as part of an urban water management plan if groundwater is identified as a source of water available to the supplier. This law also requires an urban water supplier to include in the plan a description of all water supply projects and programs that may be undertaken to meet total projected water use.

[38] California State Water Resources Control Board, http://www.waterboards.ca.gov/about_us/water_boards_structure/mission.shtml. Accessed June, 2014.
[39] Central Valley Water Quality Control Board, http://www.swrcb.ca.gov/centralvalley/about_us/. Accessed June, 2014.
[40] California Department of Water Resources website, http://www.water.ca.gov/about/mission.cfm. Accessed June, 2014.

SB 221 (Kuehl, 2001)

This Bill prohibits approval of a tentative subdivision map, or a parcel map for which a tentative subdivision map is not required, or a development agreement for a subdivision of property of more than 500 dwelling units unless the city or county provides written verification from the applicable public water system that a sufficient water supply is available. In addition, the law requires the city or county make a finding that sufficient water supplies are, or will be, available prior to completion of the project.

Local Policy & Regulations

Tulare County Environmental Health Services

"The Environmental Health Services Division regulates retail food sales and hazardous waste storage and disposal; inspects contaminated sites and monitors public water systems, which protects and reduces the degradation of groundwater. The Division regulates the production and shipping of milk for Tulare and Kings Counties and also serves as staff to the Tulare County Water Commission appointed by the Board of Supervisors. The goal of HHSA's Environmental Health division is to protect Tulare County's residents and visitors by ensuring that our environment is kept clean and healthy."[41] This division requires water quality testing of public water systems.

Any project that involves septic tanks and water wells within Tulare County is subject to approval by this agency. All recommendations provided by this division will be added as mitigation measures to ensure reduction of environmental impacts.

Tulare County General Plan Policies

The Tulare County General Plan has a number of policies that apply to projects within County of Tulare. General Plan policies that relate to the proposed Project are listed as follows:

PF-4.14 Compatible Project Design - The County may ensure proposed development within CACUABs is compatible with future sewer and water systems, and circulation networks as shown in city plans.

AG-1.17 Agricultural Water Resources - The County shall seek to protect and enhance surface water and groundwater resources critical to agriculture.

The County shall seek to protect and enhance surface water and groundwater resources critical to agriculture.

HS-4.4 Contamination Prevention - The County shall review new development proposals to protect soils, air quality, surface water, and groundwater from hazardous materials contamination.

[41] Tulare County Environmental Health Division, http://www.tularehhsa.org/index.cfm/public-health/environmental-health/. Accessed June, 2014.

HS-5.2 Development in Floodplain Zones - The County shall regulate development in the 100-year floodplain zones as designated on maps prepared by FEMA in accordance with the following:

1. Critical facilities (those facilities which should be open and accessible during emergencies) shall not be permitted.
2. Passive recreational activities (those requiring non-intensive development, such as hiking, horseback riding, picnicking) are permissible.
3. New development and divisions of land, especially residential subdivisions, shall be developed to minimize flood risk to structures, infrastructure, and ensure safe access and evacuation during flood conditions.

HS-5.4 Multi-Purpose Flood Control Measures - The County shall encourage multipurpose flood control projects that incorporate recreation, resource conservation, preservation of natural riparian habitat, and scenic values of the County's streams, creeks, and lakes. Where appropriate, the County shall also encourage the use of flood and/or stormwater retention facilities for use as groundwater recharge facilities.

HS-5.9 Floodplain Development Restrictions - The County shall ensure that riparian areas and drainage areas within 100-year floodplains are free from development that may adversely impact floodway capacity or characteristics of natural/riparian areas or natural groundwater recharge areas.

HS-5.11 Natural Design - The County shall encourage flood control designs that respect natural curves and vegetation of natural waterways while retaining dynamic flow and functional integrity.

WR-2.1 Protect Water Quality - All major land use and development plans shall be evaluated as to their potential to create surface and groundwater contamination hazards from point and non-point sources. The County shall confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products, or wastes; floating debris; and runoff from the site.

WR-2.2 National Pollutant Discharge Elimination System (NPDES) Enforcement - The County shall continue to support the State in monitoring and enforcing provisions to control non-point source water pollution contained in the U.S. EPA NPDES program as implemented by the Water Quality Control Board.

WR-2.3 Best Management Practices (BMPs) - The County shall continue to require the use of feasible BMPs and other mitigation measures designed to protect surface water and groundwater from the adverse effects of construction activities, agricultural operations requiring a County Permit and urban runoff in coordination with the Water Quality Control Board.

WR-2.4 Construction Site Sediment Control - The County shall continue to enforce provisions to control erosion and sediment from construction sites.

WR-2.5 Major Drainage Management - The County shall continue to promote protection of each individual drainage basin within the County based on the basins unique hydrologic and use characteristics.

WR-2.6 Degraded Water Resources - The County shall encourage and support the identification of degraded surface water and groundwater resources and promote restoration where appropriate.

WR-2.8 Point Source Control - The County shall work with the Regional Water Quality Control Board to ensure that all point source pollutants are adequately mitigated (as part of the California Environmental Quality Act review and project approval process) and monitored to ensure long-term compliance.

WR-3.3 Adequate Water Availability - The County shall review new development proposals to ensure the intensity and timing of growth will be consistent with the availability of adequate water supplies. Projects must submit a Will-Serve letter as part of the application process, and provide evidence of adequate and sustainable water availability prior to approval of the tentative map or other urban development entitlement.

WR-3.5 Use of Native and Drought Tolerant Landscaping - The County shall encourage the use of low water consuming, drought-tolerant and native landscaping and emphasize the importance of utilizing water conserving techniques, such as night watering, mulching, and drip irrigation.

WR-3.6 Water Use Efficiency - The County shall support educational programs targeted at reducing water consumption and enhancing groundwater recharge.

WR-3.10 Diversion of Surface Water - Diversions of surface water or runoff from precipitation should be prevented where such diversions may cause a reduction in water available for groundwater recharge.

IMPACT EVALUATION

Would the project:

a) Violate any water quality standards or waste discharge requirements?

Project Impact Analysis: ***Less Than Significant Impact With Mitigation***

Septic System

The existing facility currently has a septic system that accommodates the sewage flows from the employee kitchen and bathroom via on-site, self-sustaining septic tanks and leach fields due to the absence of an adjacent or accessible public sewer trunk line near the Project site. This septic system does not handle storm water or other free liquids.

The proposed Project will include the addition of a new septic tank and leach field which will be reviewed by the Tulare County Health and Human Services Agency, Health Services Division. Recommendations for this proposed Project are included as Mitigation Measures 91- through 9-6. Implementation of these Measures will reduce potential impacts related to this specific resource to a ***Less Than Significant Impact***.

Stormwater (Surface Water Quality)

The proposed Project site is located in the Kaweah River Watershed, as seen in Figure 3.9-1. "The Kaweah River begins in Sequoia National Park, flows west and southwest, and is impounded by Terminus Dam. It subsequently spreads into many distributaries around Visalia and Tulare trending toward Tulare Lake. The Tule River begins in Sequoia National Forest and flows southwest through Lake Success toward Tulare Lake."[42] The proposed Project site is not located along a natural water feature such as a lake, river or stream and there are no other water features that are adjacent to or within immediate proximity to the site.

The existing site has 20% of impervious surfaces (building area, concrete paving, and asphalt paving) and 80% of pervious surfaces (such as compacted road base, landscaping, and drainage basin). With implementation of the proposed Project, the total impervious surface will be 30% and the impervious surface will be 70%. The drainage basin for the proposed Project is designed for a 50 year flood event and is considered sufficient to prevent off-site discharge of stormwater.[43]

With the appropriate water quality permit from the Central Valley Regional Water Quality Control Board (RWQCB) potential impacts related to this specific topic will be reduced to a less than significant level.

The existing facility has been issued a Waste Discharger Identification number (5F54I024218) by the State Water Resources Board regarding the facility's General Permit to Discharge Storm Water Associated with Industrial Activity. As part of the National Pollutant Discharge Eliminations System (NPDES), the applicant has prepared a Storm Water Pollution Prevention Plan (SWPPP) (updated June 20, 2014) and Storm Water Monitoring Plan (SWMP). Within this SWPPP/SWMP it is noted that the proposed Project will comply with the General Permit for Industrial Dischargers. As part of this compliance the applicant will be required to fulfill the following: (1) demonstrate compliance with permit requirements, (2) evaluate changing conditions and practices at the site to control pollutants in stormwater discharges, (3) implement the SWPPP, and (4) measure effectiveness of Best Management Practices. In addition, the General Permit requires annual testing and reporting of results to the RWQCB. The proposed Project Applicant will be required to update these documents with the RWQCB to reflect the proposed expansion and permanent establishment of the proposed Project.

According to the SWPPP, site drainage is toward the south and west of the property toward the collection basin located on the southwest corner of the property. Any discharge of water from the site would be from overland flow and exit the site through silt fencing or collected in the drainage basin. Excessive water collected in the basin would be either removed using a vacuum truck and disposed of offsite or pumped out of the basin and discharged off site. Most of the surface water drains naturally into the subsurface through infiltration[44].

[42] California Water Plan Update 2009, Tulare Lake, page TL-7
[43] 4Creeks Engineering. Email correspondence August 2014.
[44] SWPPP, Sierra Pacific Materials Asphalt Plan. Pg. 4. (June 2014)

Potential sources of pollution[45] during Project operation include:

- Maintenance and repair
- Asphalt plant
- Crushing plant

Potential pollutants[46] during Project operation include:

- Asphalt Oil
- Oil and Grease
- Petroleum Hydrocarbons
- Propane
- Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)
- Suspended solids
- Volatile Organic Componds (VOCs)

The site SWPPP provides an extensive list of site-specific Best Management Practices (BMPs) [47]. They are summarized here:

- Minor spills are cleaned up promptly by site personnel.
- Spill kits are stored on site in the service vehicle and operations area.
- Used fluids and waste are placed in marked containers, properly stored, and removed from the site for recycling or disposal.
- The materials storage areas are checked weekly by the Plant or Materials Manager.
- When serviced, all vehicles and equipment are checked for faulty parts and hydraulic hose wear; these are replaced as potential problems are discovered.
- Large equipment associated with the Plant are checked weekly by the Plant or Materials Manager for potential leaks.
- All on-site holding tanks such as the two 30,000-gallon asphalt oil tanks, 12,000-gallon propane tank and degreaser totes are inspected weekly by the Plant or Materials Manager for leaks or spills.
- Installation of subsurface concrete washout in the crushing operations area.
- Installation of an asphalt driveway at the plant entrance/exit. The roadway leaving the Plant will be swept on a regular basis to prevent tracking of materials off of the site.
- Installation of a surface water catch basin and collection swale between the asphalt plant and crushing operations area.

[45] SWPPP, Sierra Pacific Materials Asphalt Plan. Pg. 4. (June 2014). Page. 5
[46] Ibid. Page 7
[47] Ibid. Page 8

- Installation of a silt fence along the southwest portion of the property.
- When servicing large equipment or fueling of vehicles, drip pans will be used to prevent surface spills to the extent practicable.
- Other BMPs as outlined in the SWPPP.

Ground Water Quality

There is no data available from the California Department of Water Resources with regard to groundwater quality in the immediate vicinity of the proposed Project site. According to the California Department of Public Health's water system permit application, any well that serves drinking water to at least 25 persons for at least 60 days out of the year is a public water system. As the facility does not employ more than 25 workers for more than 60 days a year, the wells are considered a Non-community water system. The proposed Project will utilize the existing residential water well for potable uses associated with the proposed on-site office building.

The Project will result in a ***Less Than Significant Impact***.

Cumulative Impact Analysis: ***Less Than Significant Impact with Mitigation***

The geographic area of this cumulative analysis is the Tulare Lake Basin. This cumulative analysis is based on information provided in the Water Quality Control Plan for the Tulare Lake Basin and the requirements of Tulare County Environmental Health.

The proposed Project will be required to comply with the all requirements of the Central Valley Water Board and Tulare County Health Services Division (TCHSD). The proposed Project will be required to comply with Central Valley Water Board and TCHSD rules/regulations and permit requirements as a component of project design features, the proposed Project will not contribute to any cumulative impacts related to this Checklist Item.

Mitigation Measure(s):

9-1 The Project shall obtain a General Stormwater Industrial Facility Permit from the Central Valley Water Board, prior to obtaining building permits for the expansion. The facility operators shall prepare, retain on site, and implement a SWPPP as part of the General Stormwater Industrial Facility Permit.

9-2 Existing and future leach fields should not be located under structures.

9-3 New sewage disposal systems shall be designed by an Engineer, Registered Environmental Health Specialist, Geologist, or other competent persons, all of whom must be registered and/or licensed professionals knowledgeable and experienced in the field of sewage disposal system and design. The specifications and engineering data for the system shall be submitted to the TCEHSD for review and approval prior to the issuance of a building permit.

9-5 Truck and vehicle washing shall be conducted exclusively in the one location. Employees shall be instructed not to dump vehicle fluids, pesticides, solvents, fertilizers, organic chemicals, or toxic chemicals into catch basins.

The Truck and Vehicle washing area shall have oil/water separators, sediment traps, and a collection sump large enough to handle all the wastewater. This wastewater shall not be discharged into the septic system.

Conclusion: ***Less Than Significant Impact With Mitigation***

With implementation of design features and the above mentioned Mitigation Measures, potential Project-specific and cumulative impacts related to this Checklist Item will be reduced to a ***Less Than Significant Impact***.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Project Impact Analysis: ***Less Than Significant Impact With Mitigation***

A Water Supply / Water Quality Technical Memorandum was prepared for the project (See Appendix F) and the analysis herein is partially based on that analysis.

There are two existing wells on-site. One residential well that will used for the future office building, and an agricultural well that will be used for the sprinkler system, water truck (dust control), visual buffer landscaping, and the GENCOR plant. The pumping capacities[48] of the existing wells are:

- Residential well: 20 gallons per minute
- Agricultural well: 300 gallons per minute

According to water well measurements maintained by the California Department of Water Resources between the years 2000 and 2010, water surface elevations in the proposed Project area has ranged from 143 feet to 170 feet[49]. The site has continually had sufficient water supplies for the previous agricultural operations (pre-2010) as well as the previous concrete plant located on the site (2010-2013).

All aspects of the proposed Project were taken into consideration when quantifying projected water use. In all cases, a worst-case scenario was used in order to provide the most conservative analysis of the proposed Project's water use impacts. Water use on site will be from five primary sources (see Table 3.9-3):

1. **Office space (7,000 sq. ft.):** The office building will include work areas, reception area, restroom facilities, a kitchen area, and landscaping in the immediate vicinity. Water use associated with an office is approximately 127 gallons per employee day[50]. This includes assumptions for restroom and kitchen use, cooling systems and landscaping around the office building. According to the Project description, the office facility will employ up to

[48] Kevin Bakker, landowner. Email correspondence August 2014.
[49] California Department of Water Resources, Water Data Library. http://www.water.ca.gov/waterdatalibrary/. Accessed June, 2014.
[50] Pacific Institute study: "Details of Commercial Water Use and Potential Savings, by Sector" (http://www.pacinst.org/reports/urban_usage/appendix_e.pdf) Accessed June, 2014

10 persons over a single shift. Because office work is not as dependent on good weather as the outdoor components of the operation (which is assumed to have 200 operating days), it is estimated that office staff will be present up to 225 days per year. At 10 employees X 127 gallons per day X 225 days, the estimated water usage from the on-site office is 285,750 gallons per year.

2. **Dust control – automatic sprinklers:** To control potential dust from the stock piles, the site will include automatic sprinklers that will be directed onto the piles. The sprinkler system will be used to keep the dust down during use of each of the piles for drop off and loading. The facility includes approximately 20 sprinkler heads that release approximately 2 gallons per minute per head. There is variation as to the frequency and length of time that sprinklers need to run, but essentially, they are used as needed to suppress dust sufficient to meet Air District rules/regulations. For example, summer months (due to higher temperatures and subsequent water evaporation) would require longer and more frequent watering than winter months (due to lower temperatures and less water evaporation, plus occasional precipitation such as rain or fog) and the total number of stock piles can vary seasonally. Based on existing water use at the facility and information provided by the Project Applicant, it can be reasonably estimated that the sprinklers will run 200 days out of the year for approximately 6 hours each day. At 2,400 gallons per hour X 6 hours per day X 200 days, the estimated water usage from automatic dust control sprinklers is 2,880,000 gallons per year.

3. **Dust control – water truck:** The facility will also have a water truck on-site to be utilized for internal road dust control. The water truck carries up to 4,000 gallons and will be used 2-3 times per day on the days that the facility is operating (estimated to be 200 days per year). At 12,000 gallons per day X 200 days per year, this equates to approximately 2,400,000 million gallons per year.

4. **Landscaping/Visual Buffer:** As part of the proposed Project and to provide a visual buffer, the Applicant will install trees along select perimeter segments of the site (refer to the proposed landscape plan seen in Figure 3.1-5). The landscape plan will require an estimated 3,250 gallons per day (3 times per week during the summer) until the trees are established[51]. Once established, watering will be reduced to once per week (or more frequent during the summer and less frequent during the winter). It can be reasonably estimated that after the trees are established, on average over the course of a year, the trees will require one watering per week (3,250 gallons X 52 weeks). This equates to approximately 169,000 gallons per year.

5. **GENCOR Plant.** The GENCOR plant uses 1.75 to 2.0 gallons per minute when in high fire (that is, operating at its optimum heat) and no water during low heat preheat. It is estimated that the plant will be mixing approximately 10 hours per day (at varying heat

[51] Bill Gurnea, EMB Design Group and Chris Mitchell, Russel D. Mitchell and Associates, Irrigation Design. (Consultants who prepared the landscape plan). Email correspondence August 2014.

levels) at 150 days per year[52]. At 2 gallons per minute X 60 minutes X 10 hours X 150 days, this equates to approximately 180,000 gallons per year.

Construction of the new office building will require minimal water for dust control.

Table 3.9-3
Proposed Water Use

Project Component	Gallons Per Year (GPY)	Acre Feet Per Year
1. Office Space	286,000 GPY	0.88 ac/ft/yr
2. Dust Control – automatic sprinklers	2,880,000 GPY	8.84 ac/ft/yr
3. Dust control – water truck	2,400,000 GPY	7.36 ac/ft/yr
4. Landscaping/visual buffer	169,000 GPY	0.52 ac/ft/yr
5. GENCOR plant	180,000 GPY	0.55 ac/ft/yr
Total:	**5,915,000 GPY**	**18.15 ac/ft/yr**

Water Use Comparison

Prior to use as the asphalt plant, the proposed Project site was used as a concrete plant (2010-2013) and prior to that it was planted primarily in corn (see Chapter 3.2 – Agricultural Land and Forestry Resources). It is estimated that corn would likely require between 2.8 ac/ft and 3.4 ac/ft per year per acre (depending on the planting and harvest date)[53]. A total of 17 acres in silage corn would require an estimated 47.6 to 57.8 ac/ft per year of irrigated water. As shown in Table 1, the proposed Project would require approximately 18.2 ac/ft per year, a reduction of between 29.4 - 39.6 ac/ft per year from the historic use.

Based on these figures, the maximum daily output of the combined existing wells is approximately 460,800 gallons per day. A worst-case water-use scenario is that the Project would use up to 32,120 gallons per day (gpd) during peak production during the summer (1,270 gpd for the office, 14,400 gpd for dust control sprinklers, 12,000 gpd for dust control water truck, 3,250 gpd for landscape visual buffer, and 1,200 gpd for the GENCOR plant). The output of the existing wells is sufficient for the proposed Project. The site has continually had sufficient water supplies for the previous agricultural operations (pre-2010) as well as the previous concrete plant located on the site (2010-2013). Given the reliable water source, and since the proposed Project will use substantially less water than what was historically used on the site, it

[52] Applicant provided information based on Gencor specifications.
[53] Hanson B., L. Schwankl, A. Fulton, Scheduling Irrigations: When and How Much Water to Apply, University of California Irrigation Program, University of California, Davis 1999.

can be concluded that sufficient water supplies are available to serve the proposed Project's anticipated needs.

In order to further reduce the demand for water from the proposed Project the following Mitigation Measures have been established to limit flows for human consumption and landscaping. Standard water conservation measures have been added as Mitigation Measures 9-9 through 9-11. In addition, per Tulare County Ordinance 3029, water efficient landscaping is required to conserve water. As noted in the Mitigation Measures 9-10, the proposed Project shall conform to this Water Efficient Landscaping Ordinance. With the implementation of these Mitigation Measures, proposed Project impacts related to to this checklist item (specific to the facility expansion) will be reduced to a ***Less Than Significant Impact***.

Cumulative Impact Analysis: ***Less Than Significant Impact***

The geographic area of this cumulative analysis is the Tulare Lake Basin. This cumulative analysis is based on the information provided in the California Water Plan Update 2009, Regional Report 3, Tulare Lake.

As part of the Tulare County General Plan 2030, a number of large projects were identified in the General Plan Draft EIR. After considering these projects, it was noted in the General Plan Draft EIR that a cumulative unavoidable impact to ground water supply would occur.

As noted previously, the proposed Project will use less water than what was historically used on the site. In addition, water conservation measures will be implemented to further reduce water use. For these reasons, the cumulative impacts related to this Checklist Item are ***Less Than Significant.***

Mitigation Measure(s):

9-9 All new construction shall have water conserving fixtures (water closets, low flow showerheads, low flow sinks, etc.) New urinals shall also conserve water through waterless, zero flush, or other water conservation technique and/or technology.

9-10 The proposed Project shall conform to the Tulare County Water Efficient Landscaping Ordinance.

9-11 No ground water shall be transported off-site for any use.

Conclusion: ***Less Than Significant Impact***

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Project Impact Analysis: ***No Impact***

The proposed Project site is not located along a natural water feature such as a lake, river or stream. There is an irrigation ditch adjacent to the site; however, the changes to the drainage

pattern will not result in any impact to the irrigation ditch. As such, ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. Alteration of a stream or river would be subject to the regulations of the U.S. Army Corps of Engineers and the California Department of Fish and Wildlife.

The proposed Project will not affect the drainage pattern of any off-site parcels, ***No Cumulative Impacts*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

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

Project Impact Analysis: ***No Impact***

The proposed Project site is not located along a natural water feature such as a lake, river or stream. There is an adjacent irrigation ditch adjacent and west of the site; however, the changes to the drainage pattern will not impact the irrigation ditch. As such, ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. Alteration of a stream or river would be subject to the regulations of the U.S. Army Corps of Engineers and the California Department of Fish and Wildlife.

The proposed Project will not affect the drainage pattern of any off-site parcels, ***No Cumulative Impacts*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Project Impact Analysis: ***No Impact***

As noted in the Storm Water Pollution Prevention Plan (SWPPP) provided by the applicant, the drainage basins will have adequate capacity for a 50-year storm event. As such, ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the requirements of the Central Valley Regional Water Quality Control Board.

As noted in the SWPPP, storm water will be retained on site. As such, ***No Cumulative Impacts*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

f) Otherwise substantially degrade water quality?

Project Impact Analysis: ***No Impact***

The proposed Project does not include elements that could degrade water quality beyond what was discussed in Item 3.9 a). ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the requirements of the Central Valley Regional Water Quality Control Board.

As noted earlier, the proposed Project does not include elements that could degrade water quality beyond what was discussed in Item 3.9 a). ***No Cumulative Impacts*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Project Impact Analysis: ***No Impact***

The Proposed Project does not include the construction of any housing units. ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

The proposed Project does not include any housing units. Therefore, ***No Cumulative Impacts*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Project Impact Analysis: ***No Impact***

The proposed Project is located in Zone X (0.2 percent chance flood). The proposed Project will not place any structures within a 100-year flood hazard area. Therefore, ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

The proposed Project will not have off site impacts related to flooding. In addition, the proposed Project will not induce additional flooding hazards. ***No Cumulative Impacts*** related to this Checklist Item will occur.

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Project Impact Analysis: ***No Impact***

"Two major dams could cause substantial flooding in Tulare County in the event of a failure: Terminus Dam and Success Dam. In addition, there are many smaller dams throughout the county that would cause localized flooding in the event of their failing."[54]

The proposed Project is not located near a major levee or dam. In addition, the proposed Project does not involve significant water storage or changing the alignment of an established watercourse. ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

[54] Tulare County General Plan 2030 Update Background Report, page 8-17

As noted earlier, the proposed Project is not located near a major levee or dam. The proposed Project will not have any impacts related to this checklist item on other off-site parcels. Therefore, ***No Cumulative Impacts*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

j) Inundation by seiche, tsunami, or mudflow?

Project Impact Analysis: ***No Impact***

The Project site is relatively flat and is not located near a large body of water, the coast or hillsides. As such, the proposed Project is not subject to inundation by seiche, tsunami, or mudflow. ***No Project-specific Impacts*** related to this Checklist Item will occur.

Cumulative Impact Analysis: ***No Impact***

The geographic area of this cumulative analysis is Tulare County. This cumulative analysis is based on the information provided in the Tulare County 2030 General Plan, General Plan background Report, and/or Tulare County 2030 General Plan EIR.

As noted earlier, the proposed Project is not located near a large body of water, the coast or hillsides. The proposed Project will not have any impacts related to this Checklist item on other off-site parcels. ***No Cumulative Impacts*** related to this Checklist Item will occur.

Mitigation Measure(s): ***None Required.***

Conclusion: ***No Impact***

As noted earlier, ***No Project-specific or Cumulative Impacts*** related to this Checklist Item will occur.

ACRONYMS

AF	Acre-feet
AMP	Agricultural Management Plan
CIMIS	California Irrigation Management Information System
DWR	State of California Department of Water Resources
M&I	Municipal and Industrial
MW	Megawatts
O&M	Operation and Maintenance
TDS	Total Dissolved Solids
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment

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