1 CHAPTER
ENVIRONMENTAL IMPACTS EVALUATION

This Chapter contains an initial evaluation of environmental impacts that may result from the proposed Project (Project). The format and content of this Chapter is consistent with the suggested format and content set forth in Appendix G of the State CEQA Guidelines, California Code of Regulations, Title 14, Division 6, Chapter 3.

SUMMARY OF ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

This Chapter evaluates the Project's potential to result in significant impacts related to the 18 environmental topics listed below. A checkmark in the box indicates the initial impact evaluations contained in this Chapter have concluded there would be *at least one* impact in that topical area that is identified as a "Potentially Significant Impact". Where an impact is concluded to be "Potentially Significant", mitigation measures to avoid the impact or reduce it to less than significant have been recommended by this initial evaluation and agreed to by the Project Proponent, in this case, by an authorized designee of the Lead Agency (South Valley Water Bank Authority, SVWBA).

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☒ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities / Service Systems	☐ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation, I Dale Brogan, the undersigned, authorized designee of the Lead Agency, find that:

☐ I find that the proposed project COULD NOT have a significant effect on the environment. . This draft Negative Declaration [ND] has therefore been prepared for public review and comment. This document and all comments received during the announced public review period will be considered by the SVWBA Board of Directors (Lead Agency decision-making body) at a future public meeting announced pursuant to State law and the Notice of Intent included with this document. It is anticipated this Negative Declaration will be adopted.

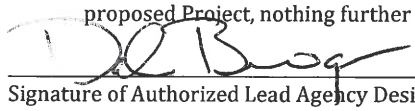
☒ Although the proposed project could have a significant effect on the environment, there would not be a significant effect in this case because the recommended mitigation measures identified in this Chapter are preliminarily agreed to by the signatory below, on behalf of the project proponent Lead Agency. This draft MITIGATED NEGATIVE DECLARATION [MND] has therefore been prepared for public review and comment. This document and all comments received during the announced public review period will be considered by the SVWBA Board of Directors (Lead Agency decision-making body) at a future public meeting

announced pursuant to State law and the Notice of Intent included with this document. It is anticipated a Mitigated Negative Declaration will be adopted.

☐ I find that the proposed project MAY have a significant effect on the environment and that an ENVIRONMENTAL IMPACT REPORT is required. This draft (EIR) has therefore been prepared for public review and comment. This draft EIR and a Final EIR containing all comments received and formal responses to those comments will be considered by the SVWBA Board of Directors (Lead Agency decision-making body) at a future public meeting announced pursuant to State law and the [Notice of Intent] included with this document. It is anticipated a Final EIR will be certified as adequate pursuant to CEQA.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but previously-identified adverse effects regarding [list them] 1) has [have] been adequately analyzed in previously prepared [name EIR] [name M/ND] [SCH #] pursuant to applicable legal standards, and 2) has [have] been addressed by mitigation measures based on the earlier analysis as described on attached sheets. A draft ENVIRONMENTAL IMPACT REPORT, analyzing only the effects that remain to be addressed, has therefore been prepared for public review and comment. This draft EIR and a Final EIR containing all comments received during the announced public review period and formal responses to those comments will be considered by the SVWBA Board of Directors (Lead Agency decision-making body) at a future public meeting announced pursuant to State law and the [Notice of Intent] included with this document. It is anticipated a Final EIR will be certified as adequate pursuant to CEQA.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in the earlier [name it] EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated to less than significant pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.



Signature of Authorized Lead Agency Designee
For the South Valley Water Banking Authority, Lead Agency

4-12-17
Date

Dale Brogan, Special Projects Manager, Delano-Earlimart Irrigation District
Printed name and Title

I. AESTHETICS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

BASELINE CONDITIONS

Environmental Setting

The Project Area is comprised of a total of approximately 4,189 acres in a rural, agricultural area located in the southern portion of Tulare County and lying east of SR 99 and generally southeast of Pixley, northeast of Earlimart, northwest of Ducor and southwest of Terra Bella.

The aesthetic features of the existing visual environment in the Project area are relatively uniform, with the site and surrounding area dominated by a working landscape of agricultural lands consisting primarily of cultivated fields and orchards, some vacant or fallow land, irrigation canals and regulating basins, rural residences. Also commonly visible are agricultural support and accessory facilities such as wells, pumps, turn-outs, stand-pipes, and other farm related storage buildings and sheds. Lying within thePID, the Project site and surrounding lands are traversed by irrigation canals, including Harris ditch, and contain other natural water features such as Dry Creek. The closest scenic resource, as identified in the Tulare County General Plan EIR, is the Friant-Kern Canal[1], which is an element of the Project. The Friant-Kern Canal component of the CVP is a dominant man-made, concrete-lined water conveyance feature adjacent to the Project site on the east.

The Project Site consists of approximately 1,056 acres that will be disturbed during construction including 500-800 aces of the total 1,012 acres that were included as potential sites for the recharge basin at the far westerly edge of the Project Area. These basins are bounded on the north by Avenue 88, on the east by Road 160, on the south by Deer Creek and on the west by the extension of Road 152 alignment. The in-Lieu Service Area consists of 3,539 acres and is bounded on the north by Avenues 88 and the Avenue 84, on the east by Road 184, on the south by Avenue 72 and on the west by other agricultural lands, Deer Creek and the Road 160. The concrete pipeline proposed to be buried along the north side of Avenue 80 connecting the recharge basins to the FKC will extend from Road 160 to the west bank of the FKC.

[1] ESA Associates. Environmental Impact Report, Recirculated Draft, Tulare County General Plan 2030 Update. February 2010. Figure 3.1-2 Scenic Resources.

State Routes (SR) in the Project vicinity include SR-99 approximately 2.75 miles west, SR-190 approximately 6.5 miles to the north, and SR-65, which is located approximately 5 miles to the east. The Project's buried concrete pipeline extending from the FKC to the recharge basins will cross under a segment of Road 192 designated by the Tulare County General Plan as a County Scenic Road[2].

The dominant scenic vista from the Valley floor includes the Sierra Nevada Mountain range to the east. From within the Project site glimpses of the Sierra Nevada Mountain range are possible in between or outside of the dense canopy of orchards or from area roadways and bridges. Due to the relatively flat topography the only other distinct geographic resources within view sheds from the site are the water conveyance features and frequent graded dirt farm roads.

Regulatory Setting

Federal

National Environmental Policy Act

There are no Federal regulations relating to aesthetics that are applicable to the Project or the Project site.

State

California Environmental Quality Act

State regulations relating to aesthetics include: California Scenic Highway Program, California Landscape Province Preservation, California State Park Program. The Project is not subject to any of these regulations since there are no state-designated lands or scenic highways in the vicinity.

California Building Code Title 24 Outdoor Lighting Standards[3]

The requirements vary according to which "Lighting Zone" the equipment is in. The Standards contain lighting power allowances for newly installed equipment and specific alterations that are dependent on which Lighting Zone the project is located in. Existing outdoor lighting systems are not required to meet these lighting power allowances. However, alterations that increase the connected load, or replace more than 50% of the existing luminaries, for each outdoor lighting application that is regulated by the Standards, must meet the lighting power allowances for newly installed equipment.

An important part of the Standards is to base the lighting power that is allowed on how bright the surrounding conditions are. The eyes adapt to darker surrounding conditions, and less light is needed to properly see; when the surrounding conditions get brighter, more light is needed to see. The least power is allowed in Lighting Zone 1 and increasingly more power is allowed in Lighting Zones 2, 3, and 4.

By default, government designated parks, recreation areas and wildlife preserves are Lighting Zone 1; rural areas are Lighting Zone 2; and urban areas are Lighting Zone 3. Lighting Zone 4 is a special

[2] Tulare County General Plan, Planning and Development Department. 2030 Tulare County General Plan. August 2012. Figure 7-1.
[3] California Building Energy Efficiency Standards- Outdoor Lighting Zones. http://www.energy.ca.gov/title24/2005standards/outdoor_lighting/2004-09-30_LIGHTING_ZONES.PDF Accessed January 20, 2015.

use district that may be adopted by a local government. The Project is located in a rural area. Therefore, it is in Lighting Zone 2.

California Scenic Highway Program

The Scenic Highway Program allows county and city governments to apply to the California Department of Transportation (Caltrans) to establish a scenic corridor protection program and was created by the Legislature in 1963. Its purpose is to protect and enhance the natural scenic beauty of California highways and adjacent corridors, through special conservation treatment. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, Sections 260 through 263.

Local

Tulare County General Plan Policies

- SL-1: To protect and feature the beauty of Tulare County's view of working and natural landscapes.
- SL-1.1: Natural Landscapes – During review of discretionary approvals, including parcel and subdivision maps, the County shall as appropriate, require new development to not significantly impact or block views of Tulare County's natural landscapes.
- SL-1.2: Working Landscapes – The County shall require that new non-agricultural structures and infrastructure located in or adjacent to croplands, orchards, vineyards, and open rangelands be sited so as to not obstruct important viewsheds and to be designed to reflect unique relationships with the landscape by:
    - Referencing traditional agricultural building forms and materials,
    - Screening and breaking up parking and paving with landscaping, and
    - Minimizing light pollution and bright signage.
- SL-1.3: Watercourses – The County shall protect visual access to, and the character of, Tulare County's scenic rivers, lakes, and irrigation canals by:
    - Locating and designing new development to minimize visual impacts and obstruction of views of scenic watercourses from public lands and right-of-ways, and
    - Maintaining the rural and natural character of landscape viewed from trails and watercourses used for public recreation.
- SL-2: To protect the scenic views for travelers along the County's roads and highways.

IMPACT ASSESSMENT

I-a) Will the Project have a substantial adverse effect on a scenic vista?

No Impact. The predominant vista in the Project area is a working landscape consisting predominantly of agricultural uses. The site and surrounding area is flat and the only County General Plan-designated scenic resources or scenic vistas within the Project vicinity is the FKC and easterly views of the Sierra Nevada Mountain Range. In addition to the agricultural fields and orchards, the Friant-Kern Canal, Deer Creek and Harris ditch are dominant water conveyances visible within the Project site. The Project includes the construction of a new turnout from the Friant-Kern Canal which will not significantly change the visual appearance of the waterway. The Project will not result in a significant change to the current canal infrastructure and surrounding area scenic resources.

Therefore, there will be no impact. Views of the Sierra Nevada from the project site will not be changed by the Project, so no scenic vista is affected.

I-b) Will the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The State Scenic Highway Program protects and enhances California's natural scenic beauty by allowing county and city governments to apply to CalTrans to establish a scenic corridor protection program for identified road segments. According to CalTrans, there are two highways located in Tulare County *eligible* for state scenic designation: State Route 198 and State Route 190[4]; however the County has not applied to have them formally designated. Further, these scenic highway segments are located approximately 26 miles to the north and 10.5 miles northeast of the Project area, respectively and therefore will not be impacted by the Project. To date, the County has not applied to the State to establish scenic corridor protection for Road 192, even though the County General Plan has designated Road 192 Plan as a County Scenic Road[5]. Because the Project pipeline crossing Road 192 will be buried, it's presence after construction will not be visible and therefore will not change the resulting ambient views of the roadway or from the roadway. As there are currently no designated scenic highways in the County and due to the distance of the eligible Scenic Highways, there would be no impact to scenic resources.

I-c) Will the Project substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact. The Project Area is currently agricultural fields and associated farming and irrigation infrastructure, surrounded predominately by similar agricultural uses and structures. The Project will modify slightly the existing character of the 720 acre Project site by constructing water delivery facilities that are already common in the area and regional landscape, including a new turnout, pipelines, control facilities, recovery wells, a regulating basin and recharge basins. During the construction phase, construction equipment and machinery staging areas may potentially be visible from neighboring roads; however, construction is temporary and will not affect scenic vistas long term. It is estimated that approximately 720 acres of cultivated agriculture may be removed to accommodate construction. However, depending on the final location of pipeline trenches and area needed for maintenance and operation easements some of this acreage may be able to be restored to cultivation after construction. Any impacts to the visual character or quality of the site and its surroundings would be less than significant during Project construction and operation.

I-d) Will the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. The Project elements are not anticipated to create substantial additional glare or lighting impacts. Additional water surface, created by the retention of groundwater in the proposed recharge basins, may create a minor source of light reflection or glare during basin peak water levels, however glare will not be visible from nearby highways, county roads

[4] Caltrans, Division of Design, Landscape Architecture Program. Scenic Highway Program: Eligible and Officially Designated Routes. http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm Accessed March 6, 2015.
[5] Tulare County General Plan, Planning and Development Department. 2030 Tulare County General Plan. August 2012. Figure 7-1.

or residences. The recharge basins will be surrounded by one to two-foot levees designed to allow for one and a half feet of free board at the maximum design water surface elevation, and would reduce the amount of glare exiting the basin. It is not anticipated that the facility would require security lighting that would affect nighttime skies. Any security lighting installed would be required to be hooded and shielded to reduce glare and the potential for fugitive light. As such, the impact would be less than significant.

II. AGRICULTURE AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☒	☐

BASELINE CONDITIONS

Environmental Setting

According to the Tulare County Farm Bureau[6], Tulare County ranked as the number one largest agricultural producing county in the nation in 2014, followed in second place by Fresno County, California, leading also in exports to over 80 countries world-wide. Agriculture is the largest private employer in Tulare County with farm employment accounting for nearly a quarter of all jobs. Processing, manufacturing, and service to the agriculture industry provide many other related jobs. Six of the top fifteen employers in Tulare County are food handling or processing companies, which includes fruit packing houses and dairy processing plants. One in every five jobs in the San Joaquin Valley is directly related to agriculture.

According to the Farm Bureau's 2014 Annual Crop and Livestock Report[7], Tulare County's gross production value in 2014 was over eight billion dollars, a 13% increase over 2013. Tulare County produces a wide variety of agricultural commodities including:

- Field Crops
- Fruit and Nut Crops
- Vegetable Crops
- Apiary Products
- Nursery Products
- Seed and Industrial Crops
- Livestock and Poultry
- Livestock and Poultry Products

While milk, livestock and poultry, and fruits and nuts are the leading commodities, the total value of field crops declined nearly 30% from 2013 due primarily to the drought.

Historically, land use at the project site has included orchards and row crops. The Project site is zoned by Tulare County as Exclusive Agriculture (AE-40 and AE-20). (See Figure 1-01, Tulare County Zoning Map below).

[6] Tulare County Farm Bureau, Tulare County Agricultural Facts accessed on September, 2015 via the web at: http://www.tulcofb.org/index.php?page=agfacts.
[7] County of Tulare Agricultural Commissioner's Office, *2014 Annual Crop and Livestock Report,* accessed on September, 2015 via the web at http://agcomm.co.tulare.ca.us/default/index.cfm/standards-and-quarantine/crop-reports1/crop-reports-2011-2020/.

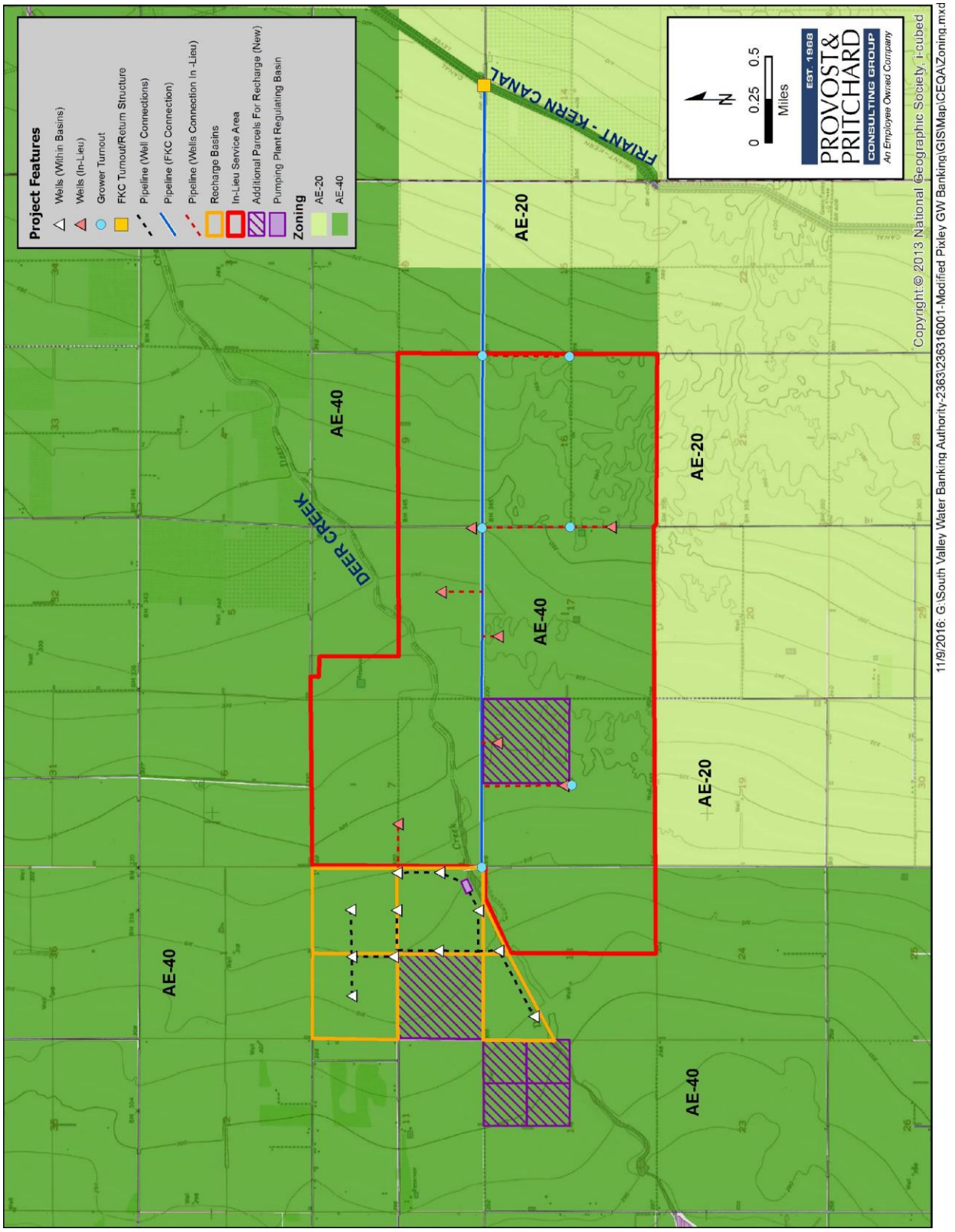


Figure 1-0 Tulare County Zoning Map

A review of the "Important Farmlands" mapping by the California Department of Conservation's (CDC's) Farmland Mapping and Monitoring Program (FMMP) shows that project site is designated as Prime Farmland, Farmland of State Importance and Unique Farmland. (See Figure 0-1, California Important Farmland Map below.) The FMMP provides statistics on conversion of farmland to nonagricultural uses for Tulare County, where the project site is located[8]. Of the total land area that was inventoried (1,585,867 acres), in 2008, Tulare County had approximately 864,437 acres of Important Farmlands (including Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance) and an additional 439,851 acres of grazing land. The remaining 281,579 acres of land were Urban and Built-up Land, Other Land, and Water Area. In the period between 2006 and 2008, Important Farmlands had shown a net decrease of 13,730 acres (1.5 percent) within the County[4].

No forest or timber land is present at the project site or in the project vicinity. According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey western Tulare County area, the survey area contains the following soil types (in order of greatest percentage of occurrence within the Project boundaries to least): Colpien loam, Flamen loam, Hanford sandy loam, Akers-Akers saline-sodic complex, Biggriz-Biggriz saline-Sodic complex, Crosscreek-Kai association, Centerville clay, Exeter loam, Calgro-Calgro saline-Sodic complex, and Riverwash (Deer Creek). [9]

According to the NCRS soil survey, all soil types found in the Project area originate from alluvial fans with a parent material of granite rock sources. These soil types range from well-drained to somewhere poorly-drained; have wide-ranging water holding capacity and encounter rare to very rare flooding.[9]

[8] ESA Associates. Environmental Impact Report, Recirculated Draft, Tulare County General Plan 2030 Update. February 2010. Figure 3.1-2 Scenic Resources.
[9] U.S. Department of Agriculture, Natural Resource Conservation Service. Custom Soil Resource Report of Tulare County, Western Part, California. Produced December 19, 2016.

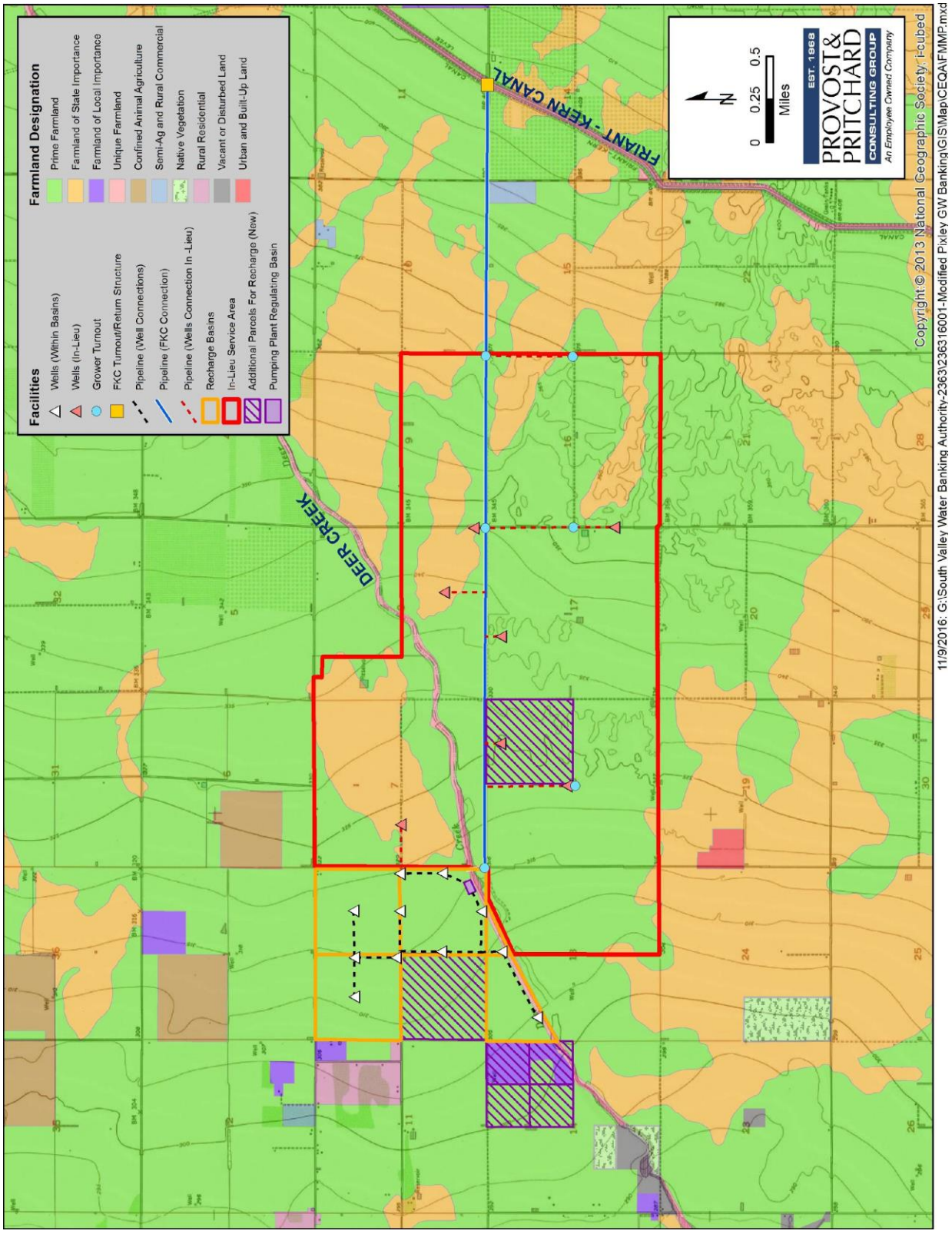


Figure 0-1 California Important Farmland Map

The California Revised Storie Index is a soil rating based on soil properties that govern a soil's potential for cultivated agriculture in California. The Storie Index assesses the productivity of a soil from the following four characteristics:

- Factor A, degree of soil profile development;
- Factor B, texture of the surface layer;
- Factor C, slope; and
- Factor X, manageable features, including drainage, micro-relief, fertility, acidity, erosion, and salt content.

A score ranging from 0-100 percent is determined for each factor, and the scores are then multiplied together to derive an index rating. The ratings have been combined into six grade classes as follows:

- Grade 1 (excellent), 100 to 80;
- Grade 2 (good), 79 to 60;
- Grade 3 (fair), 59 to 40;
- Grade 4 (poor), 39 to 20;
- Grade 5 (very poor), 19 to 10; and
- Grade 6 (nonagricultural), less than 10.

The Storie index rating for the majority of the soils found in the Project site (71.6%) are rated as Grade 1. Of the soils found in the Project boundaries 17.9 percent are rated Grade 2. The remaining soils are not graded or designated as Grade 4.[10] (See Appendix F).

Another way of measuring the suitability of soils for most field crops is by determining the soil capability class. In this system, soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. They are also classified based on whether they are irrigated or non-irrigated. Capability classes are designated by the numbers 1 through 8. The Project site is primarily (47.2%) designated as Irrigated Capability Class 1[9], which means that soils have slight limitations that restrict their use. The secondary Irrigated Capability Class comprises approximately 17.9 percent of the Project site and is classified as 2s, which means the soils have moderate limitations, within the rooting zone, that reduce the choice of plants or require moderate conservation practices[11].

Regulatory Setting

Federal

Farmland Protection Policy Act (FPPA)

The FPPA, passed by Congress in 1981 is a non-regulatory program intended to minimize the impact Federal programs have on the unnecessary and *irreversible* conversion of farmland to nonagricultural uses. As a reporting program, its purpose is to assure, to the extent possible, that Federal programs are administered to be compatible with state and local units of government, and private programs and policies to protect farmland. Federal agencies are required to develop and review their policies and procedures to implement the FPPA every two years. The FPPA does not

[10] University of California, Davis. Agriculture and Natural Resources Department, California Soil Resource Lab. Soil Web http://casoilresource.lawr.ucdavis.edu/soilweb-apps/ Accessed December 19, 2016.
[11] U.S. Department of Agriculture. Soil Capability Class Definitions. http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/edu/ Accessed December 19, 2016.

authorize the Federal Government to regulate the use of private or non-Federal land or, in any way, affect the property rights of owners.

Funding agencies, in this case, the Bureau of Reclamation, have the latitude to determine if a use is irreversible. A Land Evaluation and Site Assessment Model (LESA) may be performed to assist in understanding the relative value of agricultural land based upon a number of factors including soils, social, economic, and geographic attributes that contribute to the overall value. Lands earning 160 points or less in a LESA are deemed already committed to non-agricultural use. Lands committed to water storage are exempt from FPPA. Also, construction of non-farm structures necessary to support on-going farm operations, are not subject to FPPA.[12] The recharge basin function and construction of the 4.5 mile pipeline along Avenue 80 will remove land from productive agriculture, but such removal is definitely reversible; meaning said lands could be put back into production at any time should the project be abandoned for whatever reason in the future. The ancillary facilities necessary for the project pipelines and recharge basins to function (i.e., wells, pumps, and turn-outs,) are collectively necessary to support on-going farm operations.

For the purpose of FPPA, farmland includes four types: prime farmland, unique farmland, farmland of statewide importance, and farmlands of local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land. The FPPA is implemented in California through a parallel program called the Farmland Mapping and Monitoring Program (FMMP) discussed below under State Regulations, "**California Department of Conservation, Division of Land Resource Protection."**

San Joaquin River Restoration Program and Settlement Agreement[13]
In October 2006, a U.S. court-ordered settlement agreement signed between environmental and fishing groups, Central Valley farmers, and the state and Federal governments, took effect. The settlement requires State and Federal agencies to cooperate in returning water and a self-sustaining salmon population to the San Joaquin River, undertaking one of the nation's largest river restoration projects. The agreement aims at returning the water flows and the historic salmon runs to California's second longest river, the San Joaquin. The Settlement Agreement ends 18 years of litigation, and while it was approved by the Federal court, the implementation of the agreement hinges on Federal legislation to authorize the spending for the program. The agreement has multiple objectives for Environmental Restoration and Water Management to ensure a successful restoration and minimize any potential water loss impacts to water users. The Project is part of the effort to minimize water loss impacts to water users within the South Valley Groundwater Bank Authority, while not obstructing required replenishment of flows to the San Joaquin River.

State

California Environmental Quality Act (CEQA)

[12] Audio webinar accessed a this website:
http://www.nrcs.usda.gov/wps/portal/nrcs/detail/?ss=16&navtype=SUBNAVIGATION&cid=nrcs143_008275&navid=100170180000000&position=Welcome.Html&ttype=detail
[13] San Joaquin River Restoration Program, website accessed May 2015:
http://www.restoresjr.net/home/background-and-history/

Definition of Agricultural Lands Public Resources Code Section 21060.1 defines "agricultural land" for the use in assessing environmental impacts on agricultural resources. This section states as follows:
Agricultural land' means prime farmland, farmland of statewide importance, or unique farmland, as defined by the USDA land inventory and monitoring criteria, as modified for California.

California Land Conservation Act (Williamson Act,)
The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is promulgated in California Government Code Section 51200-51297.4, and therefore is applicable only to specific land parcels within the State of California. The Williamson Act enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses in return for reduced property tax assessments. Private land within locally designated agricultural preserve areas is eligible for enrollment under Williamson Act contracts. However, an agricultural preserve must consist of no less than 100 acres. However, in order to meet this requirement two or more parcels may be combined if they are contiguous, or if they are in common ownership.

The Williamson Act program is administered by the DOC, in conjunction with local governments, which administer the individual contract arrangements with landowners. The landowner commits the parcel to a 10-year period wherein no conversion out of agricultural use is permitted. Each year the contract automatically renews unless a notice of non-renewal or cancellation is filed. In return, the land is taxed at a rate based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. An application for immediate cancellation can also be requested by the landowner, provided that the proposed immediate cancellation application is consistent with the cancellation criteria stated in the California Land Conservation Act and those adopted by the affected county or city. Non-renewal or immediate cancellation does not change the zoning of the property. Participation in the Williamson Act program is dependent on county adoption and implementation of the program and is voluntary for landowners[14]. **Figure 0-3 California Land Conservation ("Williamson Act") Map** below, shows lands within the Project Area that are currently in Agricultural Preserve status under the Williamson Act.

[14] California Department of Conservation. Williamson Act Program. http://www.conservation.ca.gov/dlrp/lca/Pages/Index.aspx. Site accessed April 2012.

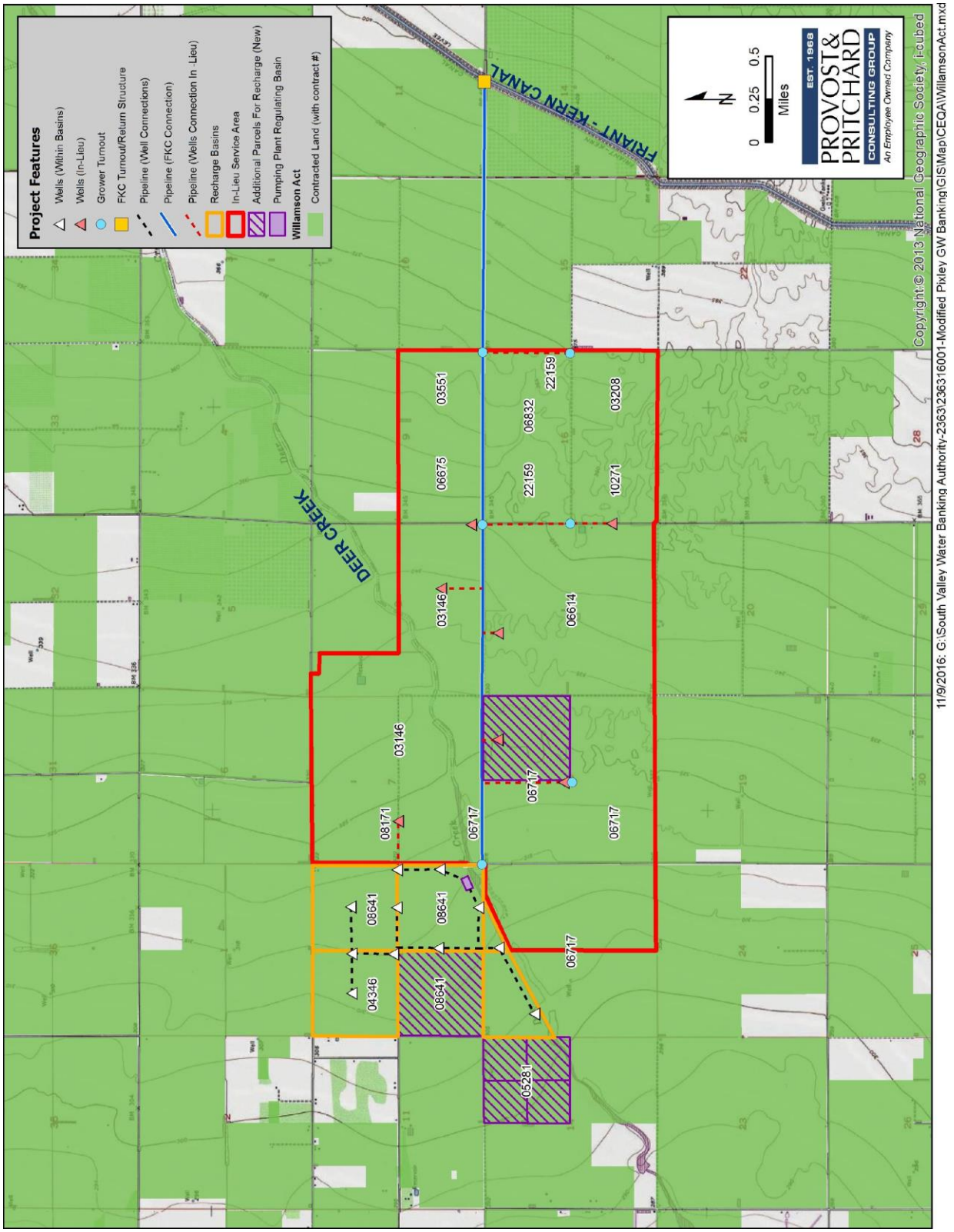


Figure 0-3 California Land Conservation ("Williamson Act") Map

California Department of Conservation, Division of Land Resource Protection
The Farmland Mapping and Monitoring Program was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands to non-agricultural uses. With the FMMP, the California Department of Conservation (DOC) applies the Natural Resources Conservation Service (NRCS) soil classifications to identify various designations of agricultural lands. These agricultural designations are used in planning for the present and future of California's agricultural land resources by allowing a means to monitor irreversible conversions of agricultural - lands to non-agricultural uses. The FMMP provides analysis of agricultural land use and land use changes throughout California. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than 10 acres being absorbed into the surrounding classifications.

The list below provides a comprehensive description of all the land designations mapped by the DOC. For environmental review purposes under CEQA, the categories of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, and Grazing Land constitute 'agricultural land' (as defined in Public Resources Code Section 21060.1; see above). The remaining categories are used for reporting changes in land use as required for FMMP's biennial farmland conversion report.

Lands classified as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance, are referred to collectively as "Farmland"[15].

- *Prime Farmland*. Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- *Farmland of Statewide Importance*. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.
- *Unique Farmland*. Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.
- *Farmland of Local Importance*. Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
- *Grazing Land*. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.
- *Urban and Built-up Land.* Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes,

[15] California Department of Conservation. FMMP – Important Farmland Map Categories. http://www.consrv.ca.gov/dlrp/fmmp/mccu/Pages/map_categories.aspx. Site accessed April 2012.

railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures[16], and other developed purposes.

- *Other Land.* Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

Sustainable Groundwater Management Act of 2014[17]

The California Legislature recently enacted the Sustainable Groundwater Management Act of 2014 ("Act"). The Act provides authority for local agency management of groundwater, and requires implementation of plans to meet the goal of groundwater sustainability established by the Act within basins of high- and medium-priority which includes the basin underlying the Authority (Groundwater Sub-Basin number 5-22.13 (Tule Basin), within the Tulare Lake Hydrologic Region Tule is considered high priority), The Act's goal of sustainability is met by implementation of sustainability plans that identify and cause implementation of measures targeted to ensure that the applicable basin is operated within its safe yield. (Water Code § 10721(t)). Safe yield is defined as the maximum quantity of water that can be withdrawn annually from the groundwater supply without causing an undesirable result, and includes within the definition of "undesirable result" chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply and significant and unreasonable reduction in groundwater storage. (Water Code § 10721(w)). The Act recognizes that fallowing of agricultural lands and reduction of pumping may be required to achieve groundwater sustainability. (Water Code §§ 10726.2(c), 10726.4(a)).

Governor's Emergency Drought Declaration

With California facing one of the most severe droughts on record, Governor Brown declared a drought State of Emergency in January 2014 and directed state officials to take all necessary actions to prepare for water shortages[18].

California Water Plan

The California Water Plan provides a collaborative planning framework for elected officials, agencies, tribes, water and resource managers, businesses, academia, stakeholders, and the public to develop findings and recommendations and make informed decisions for California's water future. The plan, updated every five years, presents the status and trends of California's water-dependent natural resources; water supplies; and agricultural, urban, and environmental water demands for a range of plausible future scenarios. The California Water Plan also evaluates different combinations of regional and statewide resource management strategies to reduce water demand, increase water supply, reduce flood risk, improve water quality, and enhance environmental and resource stewardship. The evaluations and assessments performed for the plan help identify effective actions

[16] Not precisely defined, except considered by this DOC language to be "Urban and Built-Up Land". Some known water control facilities in the area of this proposed Project are mapped as Urban and Built-Up Land. However there are other locations of known water control facilities in the area of the proposed Project that are not shown as Urban and Built-Up Lands and are instead shown as "vacant or "disturbed" lands on the FMMP maps. Many of these water control facilities are ancillary to adjacent agricultural operations, functioning as tail water basins or regulating basins near wells.

[17] CA.Gov, California Groundwater website, general information and link to Sustainable Groundwater Management Act found here: http://www.water.ca.gov/cagroundwater/legislation.cfm

[18] California Drought Update, webpage http://ca.gov/drought/ accessed March 16, 2015.

and policies for meeting California's resource management objectives in the near term and for several decades to come.

Update 2013 of the California Water Plan is State government's strategic plan for understanding, managing and developing water resources statewide for current and future generations. Prepared over the past five years with the involvement of dozens of State and Federal agencies and hundreds of stakeholders from diverse communities, it sets forth a suite of actions that together would improve the resilience and sustainability of our regional water resources into the future. The multi-volume plan also serves as a compendium of facts about where California gets its water, how it is used, who pays for it, and the many risks and opportunities of our complex, interconnected water management system.

Update 2013 advances the Governor's Water Action Plan, released by the administration of Governor Edmund G. Brown Jr. in January 2014. The governor's five-year plan sets forth 10 priority actions to meet urgent needs and set the foundation for sustainable management of California's water resources. The California Water Plan Update 2013 plans to the year 2050. There are 17 cross-cutting objectives and over 300 specific actions to reinforce the implementation of the Governor's Water Action Plan. The goals of that Plan are to make conservation a way of life, provide safe drinking water and expand water storage capacity, improve public safety and secure wastewater systems for all communities, and foster environmental stewardship. A hallmark of the Update 2013 plan is the focus on the need for stable, effective funding sources to invest in water innovation and infrastructure (natural and built).[19]

California Water Action Plan[20]

The California Water Action Plan – released by Governor Brown in January 2014 – is a roadmap for the first five years of the state's journey toward sustainable water management. Implementation during the first year was marked by significant achievements. In 2014 we saw overwhelming voter approval for a $7.545 billion water bond (Proposition 1 in November 2014) and passage of historic groundwater legislation that will provide much needed tools, financial assistance and technical support to assist regions across the state in achieving sustainable groundwater management at the local level. Additionally, 2014 brought a renewed focus on the importance of reinvesting in our water management systems and watersheds in order to address the current drought challenges and prepare for future uncertainties. State agencies undertook numerous actions in response to the drought, including stepping up conservation programs to encourage Californians to reduce their water use by at least 20 percent and enacting measures to protect water supply and water quality. A review of state agency actions throughout 2014 shows that more than 100 efforts furthering the Action Plan were either continued or initiated. This report details the origins of the Action Plan, highlights achievements to date, and outlines activities for the next four years.

Key actions identified in the Plan include:

- Make conservation a California way of life.
- Increase regional self-reliance and integrated water management across all levels of government.
- Achieve the co-equal goals for the Delta.

[19] California Department of Water Resources. DWR-led Process Updates California's Strategic Water Roadmap. October 20, 2014. http://www.waterplan.water.ca.gov/cwpu2013/final/index.cfm
[20] State of California Natural Resources Agency, California Department of Food & Agriculture and California Environmental Protection Agency. California Water Action Plan. January 2014. http://resources.ca.gov/california_water_action_plan/

- Protect and restore important ecosystems.
- Manage and prepare for dry periods.
- Expand water storage capacity and improve groundwater management.
- Provide safe water for all communities.
- Increase flood protection.
- Increase operational and regulatory efficiency.
- Identify sustainable and integrated financing opportunities.

Local

County of Tulare

Tulare County Resources Management Agency has not adopted thresholds in regard to the conversion of farmland for groundwater recharge facilities. However, Project site is designated for "Exclusive Agricultural" use and the following Goals and Policies related to agricultural preservation and water resources are outlined in the *Tulare County General Plan 2030 Update* and are applicable to the Project:

> **AG-1.17 Agricultural Water Resources:** The County shall seek to protect and enhance surface water and groundwater resources critical to agriculture.
>
> **WR-1.11 Groundwater Overdraft:** The County shall consult with water agencies within those areas of the County where groundwater extraction exceeds groundwater recharge, with the goal of reducing and ultimately reversing groundwater overdraft conditions in the County.
>
> **WR-3.1 Develop Additional Water Sources:** The County shall encourage, support and, as warranted, require the identification and development of additional water sources through the expansion of water storage reservoirs, development of groundwater banking for recharge and infiltration, and promotion of water conservation programs, and support of other projects and programs that intend to increase the water resources available to the County and reduce the individual demands of urban and agricultural users.

The Project site is covered by two agricultural zone districts set forth in the *Tulare County Zoning Ordinance* to implement the General Plan Land Use Designation discussed above, as follows:

- Section 9.6 "AE-20" Exclusive Agricultural Zone, 20 Acre Minimum
  - Purpose: AE-20 Zone is an exclusive zone for intensive agricultural uses and for those uses which are necessary and integral part of the agricultural operation.
- Section 9.7 "AE-40" Exclusive Agricultural Zone, 40 Acre Minimum
  - Purpose: The AE-40 Zone is an exclusive zone for intensive and extensive agricultural uses and for those uses which are a necessary and integral part of intensive and extensive agricultural operations.

Groundwater recharge facilities in support of agricultural operations are permitted in both of these zone districts.

On September 26, 1989 per Resolution No. 89-1275, the County adopted *Uniform Rules for Agricultural Preserves* pursuant to the statewide Williamson Act legislation (see discussion above under **California Land Conservation Act**.) The purpose of the Uniform Rules is to set forth those uses that are determined by the County to be allowed under the Williamson Act or compatible with agricultural uses as defined in Section 51201 of the Government Code, and thus, may be carried on within the Preserve. The following provision of the Uniform Rules applies to the Project in determining that the proposed water facilities are compatible agricultural uses and allowed under the Williamson Act:

5. *…the erection, construction, alteration or maintenance of gas, electric, water, and community utility facilities…*

IMPACT ASSESSMENT

II-a) Will the Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Less Than Significant Impact. The Project Area is designated by the FMMP maps as a combination of Prime Farmland, Farmland of Statewide Importance and Unique Farmland. (See Figure 1-2 California Important Farmland Map above.) The use of land within the proposed In-Lieu service area component of the Project would remain as agricultural use with the Project. The Recharge Basin Area and areas adjacent to the north side of Avenue 80 would result in the removal of orchard and row-crop agricultural uses to construct functional recharge basins and the pipeline interconnecting the FKC and the basins. According to the FMMP farmland designation categories described above, the Project could cause the DOC to convert the mapping designation for the 500-800 acres of lands that would be disturbed by construction and removal of orchard and row-crop land uses, from "Prime Farmland" to one of several possible designations indicating "non-farmland use". Consequently the answer to the above topical issue question could be "Yes." Nonetheless, in the instance of the Project, with its purpose, objectives and design, together with baseline conditions—both locally and statewide, this potential impact is determined to be less than significant for the following reasons.

- Due to some inconsistency in how some "water control facilities" are designated currently on the FMMP by DOC, it cannot be asserted with certainty that the proposed recharge basins would in fact be re-categorized to a designation other than "farmland".

- A recharge basin is not a "structure" like other lands designated as "Urban and Built-Up" that consist of clusters of permanent structures such as homes, multiple agricultural buildings (shops, barns, etc.), or commercial or industrial businesses. Being only excavated and contoured ground, the recharge basin could be filled in, re-contoured, and returned to use for cultivation by removal of the wells or their abandonment at any time in the future.

- A recharge basin, the function of which is integral to supporting agricultural operations may be improperly defined by DOC as a "non-agricultural" land use. And further, while the recharge basins may appear "vacant or disturbed" they could not properly function for groundwater recharge to support other agricultural operations if they were not vacant or disturbed.
- Although the FMMP has been in effect and used as an effective data base tool since 1982 to monitor conversion of agricultural land to non-agricultural uses, the intent of the CEQA Guidelines Appendix G Checklist item II.a., as evidenced by its preamble statement, is not to

conclude automatically that *every* or *any* such conversion results in a definitively significant impact.
  - Instead the Appendix G provides the guidance that is common with CEQA implementation that site and Project specific circumstances and baseline conditions determine in large part the background against which impacts are determined significant on a project-by-project basis.

- The 4-year long state-wide drought conditions and worsening groundwater over-draft, combined with obligations pursuant to the SJRRPSA to reserve certain flows to the San Joaquin River have caused the State and Governor to issue more compelling directives to conserve all available water to the greatest extent possible. Helping to achieve these directives is the primary purpose of this Project and many others like it being funded and approved around the State in order to beneficially impact statewide agricultural operations and related economies.

- The purpose and function of the recharge basins is to provide a "greater good" to existing agricultural operations by conserving excess surface water as groundwater recharge for banking purposes. This concept is consistent with the purpose of the awarded grant for this project, as well as Drought and Water Conservation Declarations and Executive Orders issued in recent years by the Governor, and with the more contemporary California Water and Water Action Plans and legislative directives to conserve water state-wide.

- The Project would be compatible with the goals and policies of the Tulare County General Plan for protecting and enhancing surface and groundwater resources critical to agriculture (AG-1.17), reducing and ultimately reversing groundwater overdraft conditions in the county (WR-1.11), and encouraging development of additional water sources through the expansion of water storage reservoirs, development of groundwater banking for recharge and infiltration, and promotion of water conservation programs, and support of other projects and programs that intend to increase the water resources available to the County (WR-3.1)21. The Project, through the beneficial use of percolation basins and in-lieu banking service area, would reduce the potential for agricultural lands to be converted to residential, commercial or other non-agricultural uses including fallowing.

- The Project is consistent with the County's Zoning as Exclusive Agriculture (AE-40 and AE-20) and with its Uniform Rules implementing the Williamson Act. Recharge facilities, such as the proposed recharge basins and associated wells, pumps, pipelines and regulating basin, are permitted uses in agricultural zoning districts and agricultural preserves as accessory or supporting uses to agriculture. Local land use authorities do not recognize the Project as a conversion of farmland to non-agricultural use, but rather see the project as an agricultural or agricultural-support operation. The Project would not indirectly induce loss of farmland in the Project area, as is typical of projects that convert agricultural lands to residential or commercial uses. The proposed water banking project would replenish and sustain otherwise declining groundwater (as projected by the Poso Creek Integrated Regional Water Management Plan [IRWMP][22]), and support agricultural resources in the region. The banking effort is expected to avoid further fallowing or conversion of lands to non-agriculture uses that may otherwise occur

[21] Tulare County General Plan 2030 Update. Goals and Policies Report. Chapter 2 and 11.
[22] Poso Creek Integrated Regional Water Management 2007 Plan, Executive Summary, pages 4 & 5, as accessed at the Semitropic Water Storage District website, weblink: http://www.semitropic.com/PosoCreekIRWM.html. The Poso Creek IRWMP includes the geographic areas served by Pixley Irrigation District and Delano-Earlimart District.

without the Project. This purpose is consistent with the recently enacted Groundwater Sustainability Management Act of 2014 (SGMA) requirements. The Project would not result in conversion of agricultural lands to non-agricultural use and impacts to agricultural resources would be less than significant.

II-b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

Less Than Significant Impact The Project is located within the unincorporated jurisdiction of the County of Tulare. The Project Area is zoned Exclusive Agriculture AE-40 and AE-20 (40-acre and 20-acre minimum parcel sizes respectively) by the County Zoning Ordinance. Lands to the north, west, northeast and southwest of the Project are zoned AE-40. Properties to the south, southeast and east of the Project are zoned AE-20. In accordance with Government Code Section 53091(e) zoning ordinances location or construction of facilities for the production, generation, storage, treatment, or transmission of water by a local agency (including the PID, DEID and the SVWBA).

The majority of the Project Area is under Williamson Act contracts (see **Figure 0-** above). Land owners are bound by their individual contracts to use lands in a manner consistent with the Williamson Act. Said contracts were established pursuant to Tulare County Uniform Rules[23]. Barring any evidence to the contrary the recharge basin function together with its appurtenant facilities are consistent with the Williamson Act in that they are intended to support the agricultural uses on surrounding lands. Therefore, impacts would be less than significant. Water recharge basins and appurtenant facilities are considered compatible uses under the Tulare County's Uniform Rules for Agricultural Preserves because they support the ongoing viability of surrounding agricultural lands.

II-c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. No forest or timberland is located on or near the Project. There will be no impact.

II-d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. No forest land is on or near the Project site. There would be no impact.

II-e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

Less Than Significant Impact. As discussed above in Impact II (a), the proposed agricultural-related water storage and groundwater recharge Project would not result in other changes in the existing environment (i.e. growth inducing impacts) which would convert additional land to non-agricultural or non-forest use. While the project would remove up to 800 acres of agricultural lands from production, the adverse effect of this is offset by the beneficial effect of increasing ability for groundwater storage, and ability to make beneficial use of excess surface water flows and irrigation during wet periods that might otherwise leave the basin area. The purpose and function of the recharge basins is to provide a "greater good" to existing agricultural operations by conserving excess surface water as groundwater recharge for banking purposes. This concept is consistent with the purpose of Part III, as well as Drought and Water Conservation Declarations and Executive Orders

[23] As adopted September 26, 1989 by Tulare County Board of Supervisors Resolution 89-1275, and as amended from time to time.

issued in recent years by the Governor, and with the more contemporary California Water and Water Action Plans and legislative directives to conserve water state-wide. The conversion of the Project Area from active agricultural orchard and row crop farming activities to recharge basins is consistent with the Tulare County General Plan land use designation for "Agriculture" and a compatible use within the "Exclusive Agriculture" implementing Zoning. The establishment of recharge basins where soils are conducive to recharge in place of active orchard and row crop farming is considered a compatible use because the basins are integral to supporting agricultural and preventing other lands from being fallowed. Therefore, impacts would be less than significant.

III. AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☒	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

BASELINE CONDITIONS

Appendix B contains a technical study entitled *Air Quality and Greenhouse Gas Impact Analysis.* This study was prepared by Ambient Air Quality and Noise Consulting to evaluate potential effects to the environment from pollutants anticipated to be generated by construction and operation of the Project. Information in that report fully describes baseline conditions regarding the project environment and identifies all applicable Federal and State regulations. Therefore that information will not be repeated in entirety below. A few pertinent air quality topics are briefly summarized below.

Environmental Setting

The Project is located within the southern portion of the County of Tulare, within the San Joaquin Valley Air Basin (SJVAB). The SJVAB is within the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). Air quality and dispersion of air pollution in the SJVAB is influenced by a variety of factors, including topography, local and regional meteorology, climate, atmospheric stability and presence of inversions and land use activities. The SJVAB has an inland Mediterranean climate resulting from topography and the strength and location of a semi-permanent, subtropical high-pressure cell. It is characterized by mild and fairly humid winters and hot, dry, cloudless summers.

An Air Quality and Greenhouse Gas Impact Analysis study[24] completed for this project by Ambient Air Quality and Noise Consulting in January, 2017, is contained in full in Appendix B. That study provides a detailed description of the existing environment in the project area and identifies potential impacts associated with the proposed Pixley Groundwater Banking Project (Project) in relation to regional and local air quality, as well as increased emissions of greenhouse gases (GHGs). The study also addressed odors and other potential issues of concern related to air quality for sensitive receptors, such as Valley Fever and asbestos and also summarizes various federal, state and local air quality regulations applicable to the project. The study was prepared in accordance with the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Guidance for Assessing and Mitigating Air Quality Impacts (2015).

The winds and unstable atmospheric conditions associated with the passage of winter storms result in periods of low air pollution and excellent visibility, however between storms high pressure and light winds can lead to higher pollutant concentrations. Summer wind conditions promote the transport of ozone and precursors from the San Francisco Bay Area. Further information regarding the topography, meteorology, and pollutant dispersion of the SJVAB can be found on pages 1-4 of Appendix B.

Within the SJVAB, the air pollutants of primary concern, with regard to human health, include ozone, particulate matter (PM) and carbon monoxide (CO). As discussed in further detail on pages four through five of Appendix B, exposure to increased pollutant concentrations of ozone, PM and CO can result in various heart and lung ailments, cardiovascular and nervous system impairment, and death.

Ambient Air Quality

Air pollutant concentrations are measured at several monitoring stations in Tulare County. The Porterville-1839 Newcomb Street Monitoring Station is the closest representative monitoring site to the project site with sufficient data to meet U.S. EPA and/or ARB criteria for quality assurance. This monitoring station monitors ambient concentrations of ozone. Measured concentrations of nitrogen dioxide and airborne particulates are monitored at the N. Church Street Monitoring Station in Visalia. Ambient monitoring data were obtained for the last three years of available measurement data (i.e., 2011 through 2013) and are summarized in **Error! Reference source not found.** below. As depicted, the state (1-hour) and Federal ozone, PM2.5, and PM10 standards were exceeded on numerous occasions during the past 3 years.

[24] Air Quality & Greenhouse Gas Impact Analysis for the Proposed Pixley Groundwater Banking Project, Ambient Air Quality and Noise Consulting, Paso Robles, California, January 2017.

Table 0-1 Summary of Ambient Air Quality Monitoring Data

Pollutant	Monitoring Year		
	2011	2012	2013
Ozone(1)			
Maximum concentration (1-hour/8-hour average)	0.104/0.095	0.102/0.092	0.112/0.103
Number of days state/national 1-hour standard exceeded	15/0	10/0	5/0
Number of days state/national 8-hour standard exceeded	47/82	44/80	23/52
Nitrogen Dioxide (NO_2)(1)			
Maximum concentration (1-hour average)	58	61	62
Annual average	12	12	12
Number of days state/national standard exceeded	0/0	0/0	0/0
Suspended Particulate Matter ($PM_{2.5}$)(3)			
Maximum concentration (state/national)	66.5/68.1	91.3/86.1	114.3/114.0
Annual Average (national/state)	16.0/16.1	14.7/14.8	18.9/18.7
Number of days national standard exceeded (measured/calculated)(4)	9/27.9	7/22.0	14/46.5
Suspended Particulate Matter (PM_{10})(2)			
Maximum concentration (state/national)	76.6/78.1	76.2/75.7	160.0/155.0
Number of days state standard exceeded (measured/calculated)(4)	11/68.8	15/89.3	16/94.0
Number of days national standard exceeded (measured/calculated)(4)	0/0	0/0	1/3.3
ppm = parts per million by volume, µg/m³ = micrograms per cubic meter, NA=Not Available *1 Based on ambient concentrations obtained from the Porterville-1839 Newcomb St. Monitoring Station.* *2 Based on ambient concentrations obtained from the Visalia-N. Church St. Monitoring Station* *3 Measured days are those days that an actual measurement was greater than the standard. Calculated days are estimated days that a measurement would have exceeded the standard had measurements been collected every day.* *Source: ARB 2014*			

Sensitive Receptors

One of the most important reasons for air quality standards is the protection of those members of the population who are most sensitive to the adverse health effects of air pollution, termed "sensitive receptors." This term is described in more detail on page 7 of Appendix B. Sensitive land uses located in the project area consist predominantly of rural residential land uses located at varying distances within the project area.

Regulatory Setting

See **Air *Quality and Greenhouse Gas Impact Analysis*** contained in Appendix B for a complete discussion of applicable air quality regulations. Information provided below is a summary of the more relevant regulatory requirements. Air quality within the SJVAB is regulated by several jurisdictions including the U.S. EPA, ARB, and the SJVAPCD. Each of these jurisdictions develops rules, regulations, and policies to attain the goals or directives imposed upon them through legislation. Although U.S. EPA regulations may not be superseded, both state and local regulations may be more stringent.

Federal

Federal Clean Air Act

The FCAA required the U.S. EPA to establish National Ambient Air Quality Standards (NAAQS), and also set deadlines for their attainment. Two types of NAAQS have been established: primary standards, which protect public health, and secondary standards, which protect public welfare from non-health-related adverse effects, such as visibility restrictions. The list consists of the following six criteria pollutants: sulfur dioxide (SO_2), particulate matter (PM_{10}) and $PM_{2.5}$), nitrogen dioxide (NO_2), carbon monoxide (CO), ozone (O_3), and lead (Pb). The SJVAB is classified as nonattainment by California standards for ozone and particulate matter (PM_{10} and $PM_{2.5}$), and as nonattainment by national standards for ozone and $PM_{2.5.}$ A summary of ambient air quality standards and designations can be found in Table 3 of Appendix B.

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) first authorized the U.S.E.P.A. to regulate asbestos in schools and Public and Commercial buildings under Title II of the law, which is also known as the Asbestos Hazard Emergency Response Act (AHERA). AHERA requires Local Education Agencies (LEAs) to inspect their schools for ACBM and prepare management plans to reduce the asbestos hazard. The Act also established a program for the training and accreditation of individuals performing certain types of asbestos work.

National Emission Standards for Hazardous Air Pollutants

Pursuant to the FCAA of 1970, the U.S. EPA established the National Emission Standards for Hazardous Air Pollutants (NESHAP). These are technology-based source-specific regulations that limit allowable emissions of HAPs.

State

State Implementation Plan[25]

Federal clean air laws require areas with unhealthy levels of ozone, particulates (PM10) inhalable particulate matter (PM 2.5), carbon monoxide (CO), nitrogen dioxide (NO2), and sulfur dioxide (SO2) to develop plans, known as State Implementation Plans (SIPs). The purpose of the SIPs is to establish what air districts must do to demonstrate how they will achieve attainment with NAAQS and CAAQS. The State of California has adopted a statewide SIP. Individual air districts have, in turn, either adopted their own comprehensive regional air quality management plans and/or SIPs that describe how an air district will attain NAAQS and CAAQS. The 1990 amendments to the Federal Clean Air Act set deadlines for attainment based on the severity of an area's air pollution problem.

SIPs currently in place for the San Joaquin Valley Air District are the Air Resources Board's-approved SJVAPCD 2015 PM2.5 Plan, the SJVAPCD 2007 8-hour Ozone Plan, the SJVAPCD 2013 Plan for the Revoked 1-Hour Ozone Standard, the SJVAPCD 2006 PM10 Plan. A more detailed description of these plans is available in Appendix B.

California Air Resources Board

The ARB is the lead agency responsible for all purposes related to the SIP, and for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act of 1988. Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control districts and air quality management districts, establishing California Ambient Air Quality Standards (CAAQS),

[25]California Environmental Protection Agency, Air Resources Board. From website located at: http://www.arb.ca.gov/planning/sip/background.htm

which in many cases are more stringent than the Federal NAAQS, and setting emissions standards for new motor vehicles. The CAAQS and NAAQS are summarized in Table 3 of Appendix B.

California Clean Air Act

The CCAA requires that all air districts in the state endeavor to achieve and maintain CAAQS for Ozone, CO, SO_2, and NO_2 by the earliest practical date. The SJVAD is in attainment for CO, SO_2 and NO_2. As noted above SIP plans are in place for achieving compliance with 1- and 8-hour ozone standards, PM2.5 standards, and PM10 standards. More detailed requirements are available on page 10 of Appendix B.

California Assembly Bill 170

Assembly Bill 170, Reyes (AB 170), was adopted by state lawmakers in 2003 creating Government Code Section 65302.1 which requires cities and counties in the San Joaquin Valley to amend their general plans to include data and analysis, comprehensive goals, policies and feasible implementation strategies designed to improve air quality.

Assembly Bills 1807 & 2588

Toxic Air Contaminants: Within California, TACs are regulated primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics Hot Spots Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. Existing sources of TACs that are subject to the Air Toxics Hot Spots Information and Assessment Act are required to: (1) prepare a toxic emissions inventory; (2) prepare a risk assessment if emissions are significant; (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded and that air quality conditions are maintained in the SJVAB, within which the Project is located. Responsibilities of the SJVAPCD include, but are not limited to, adopting and enforcing rules and regulations concerning sources of air pollution, issuing permits for stationary sources of air pollution, inspecting stationary sources of air pollution and responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing programs and regulations required by the FCAA and the CCAA. The section of the SJVAPCD Rules and Regulations that is most relevant in this case is Regulation VIII, Fugitive Dust Prohibitions. The detailed requirements of Regulation VIII are listed on page 11 of Appendix B.

Regulatory Attainment Designations

Under the CCAA, the ARB is required to designate areas of the state as attainment, nonattainment, or unclassified with respect to applicable standards. An "attainment" designation for an area signifies that pollutant concentrations did not violate the applicable standard in that area. A "nonattainment" designation indicates that a pollutant concentration violated the applicable standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. Depending on the frequency and severity of pollutants exceeding applicable standards, the nonattainment designation can be further classified as serious nonattainment, severe nonattainment, or extreme nonattainment, with extreme nonattainment being the most severe of the classifications. An "unclassified" designation signifies that the data does not support either an attainment or nonattainment designation. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The state and national attainment status designations pertaining to the SJVAB are summarized in Table 3 of Appendix B. The SJVAB is currently designated as a nonattainment area with respect to the state PM10 standard, ozone, and PM2.5 standards. The SJVAB is designated nonattainment for the national 8-hour ozone and PM2.5 standards. On September 25, 2008, the U.S. EPA re-designated the San Joaquin Valley to attainment for the PM10 NAAQS and approved the PM10 Maintenance Plan (SJVAPCD 2011).

Local

Tulare County General Plan Policies

AQ-1: To improve air quality through a regional approach and interagency cooperation.
AQ-2: To improve air quality by reducing air emissions related to transportation.

- AQ-4: To implement the best available controls and monitoring necessary to regulate air emissions.
    - AQ-4.1: Air Pollution Control Technology – The County shall utilize the BACM and RACM as adopted by the County to support SJVAPCD air quality attainment plans to achieve and maintain healthful air quality and high visibility standards.
    - AQ-4.2: Dust Suppression Measures – The County shall require developers to implement dust suppression measures during excavation, grading, and site preparation activities consistent with SJVAPCD Regulation VIII – Fugitive Dust Prohibitions.

IMPACT ASSESSMENT

III-a) Would the Project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact with Mitigation Incorporation.

Implementation of the project would generate both temporary construction and long-term operational emissions which could conflict with or obstruct with air quality attainment and maintenance planning efforts. Consistency with air quality plans is typically conducted based on a comparison of project-generated growth in employment, population, and vehicle miles traveled (VMT) within the region, which is used for development of the emissions inventories contained in the air quality plans. In addition, projects that exceed applicable project-level CEQA significance thresholds would also be considered to have a potentially significant cumulative impact to regional air quality, which could interfere with regional air quality attainment and maintenance planning efforts.

The Project is consistent with current zoning and general plan land use designations. As such, the Project would be considered consistent with employment and VMT growth projections identified in local plans, upon which applicable ambient air quality plans are based. However, as noted in Impact III-b, project-generated emissions would exceed SJVAPCD's project-level significance thresholds. More information can be found in Appendix B.

Implementation of Mitigation Measures AQ-1 would require the project to comply with SJVAPCD Regulation VIII for the control of fugitive dust. Mitigation Measures AQ-2 would include additional measures to reduce emissions of NOX. With implementation of the proposed mitigation measures, project-generated emissions would not exceed SJVAPCD's significance

thresholds and would not conflict with applicable air quality plans. As a result, this impact is considered less than significant with mitigation incorporation.

Mitigation Measures

Mitigation Measure AQ-1: Comply with SJVAPCD's Regulation VIII-Fugitive Dust Prohibitions.
Construction of the Project shall comply with SJVAPCD's *Regulation VIII Fugitive Dust Prohibitions* and implement all applicable control measures. In accordance with SJVAPCD's Regulation VIII, a Dust Control Plan (DCP) shall be prepared for the Project. The DCP shall be submitted to and approved by the SJVAPCD prior to issuance of construction/grading permits. Fugitive dust control measures to be included in the DCP shall include, but are not limited to, the following:

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
- When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
- All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions
- Utilizing sufficient water or chemical stabilizer/suppressant.
- An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall implement measures to prevent carryout and trackout.

Mitigation Measure AQ-2: Implement Measures to Reduce Construction Emissions of NOX below threshold levels.
The following measures shall be implemented to reduce mobile-source emissions of NO_X below threshold levels:

- To the extent locally available, alternative fueled, electrically driven, hybrid, or catalyst construction equipment shall be used.
- Heavy-duty (50 hp, or greater) off-road construction equipment shall, at a minimum, meet U.S. EPA Tier 3 emission standards.
- A minimum of 50% of construction waste materials shall be recycled.
- When not in use, idling of on-site construction equipment and vehicles shall be minimized. Idling of on-site diesel-powered equipment and vehicles shall be limited to no more than 5 minutes when not in use.

III-b) Would the Project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant Impact with Mitigation Incorporation. As noted in Impact III-c, daily construction emissions of NO_X would exceed SJVAPCD's localized significance thresholds of 100 lbs/day. In addition, although emissions of PM would not exceed SJVAPCD's significance thresholds, uncontrolled PM emissions could result in localized increases in pollutant concentrations at nearby residential dwellings. Ground disturbing activities may also result in increased potential for exposure of nearby individuals to Coccidioides spores and contraction of Valley Fever. As a result, this impact is considered potentially significant. (Refer to Impact III-c and III-d for additional discussion of air quality impacts and mitigation measures).

With the implementation of Mitigation Measures AQ-1, AQ-2 and AQ-3 (listed below), the project would comply with SJVAPCD Regulation VIII for the control of fugitive dust. Therefore after mitigation incorporation, the impacts would be less than significant.

Mitigation Measure AQ-3: Minimizing Personnel and Public Exposure

To minimize personnel and public exposure to potential Valley Fever–containing dust both on- and off-site, the following additional control measures shall be included in the DCP to be prepared for this project as required by *Mitigation Measure AQ-1*:

a. Equipment, vehicles, and other items shall be thoroughly cleaned of dust before they are moved offsite to other work locations.
b. Wherever possible, grading and trenching work shall be phased so that earth-moving equipment is working well ahead or down-wind of workers on the ground.
c. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.
d. In the event that a water truck runs out of water before dust is sufficiently dampened, ground workers being exposed to dust are to leave the area until a full truck resumes water spraying.
e. All heavy-duty earth-moving vehicles shall be closed-cab and equipped with a HEP-filtered air system.
f. Workers shall receive training to recognize the symptoms of Valley Fever, and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor.
g. A Valley Fever informational handout shall be provided to all on-site construction personnel. The handout shall, at a minimum, provide information regarding the symptoms, health effects, preventative measures, and treatment.
h. Onsite personnel shall be trained on the proper use of personnel protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health (NIOSH)-approved respirators shall be provided to onsite personal, upon request.

III-c) Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Less Than Significant with Mitigation Incorporation.

Short-term Construction

Short-term increases in emissions would occur during the construction process. Construction-generated emissions are of temporary duration, lasting only as long as construction activities occur, but have the potential to represent a significant air quality impact. The construction of the Project would result in the temporary generation of emissions associated with various activities, including site preparation, grading, and installation of project infrastructure. Emissions of fugitive dust would be primarily associated with ground-disturbing activities and vehicle travel on unpaved surfaces. Emissions of ozone-precursor pollutants (ROG and NO_X) would be largely associated with off-road equipment use and on-road vehicle operations associated with workers commuting to and from the project site and haul truck trips.

Annual Emissions

Estimated annual construction-generated emissions are summarized in **(Table 5 of Appendix B)**. Assuming that construction of the recharge basin, in-lieu banking area, and pipeline installation were to occur simultaneously during the initial year of construction, the Project would generate maximum uncontrolled annual emissions of approximately 0.9 tons/year of ROG, 9.4 tons/year of NO_x, 5.8 tons/year of CO, 0.1 tons/year of SO_X, 1.2 tons/year of PM_{10}, and 0.6 tons/year of $PM_{2.5}$. Construction-generated emissions occurring during the second year of construction would be less. As depicted, annual construction-generated emissions would not exceed the SJVAPCD'S significance thresholds.

Daily Emissions

Estimated daily construction-generated emissions are summarized in **(Table 6 of Appendix B)**. Assuming that construction of the recharge basin, in-lieu banking area, and pipeline installation were to occur simultaneously, daily emissions from onsite sources would total approximately 12.4 lbs/day of ROG and 131.2 lbs/day of NO_X, 80.6 lbs/day of CO, 0.2 lbs/day of SO_X, 17.4 lbs/day of PM_{10}, and 9.5 lbs/day of $PM_{2.5}$ during the initial year of construction. Daily emissions during the second year of construction would total approximately 9.5 lbs/day of ROG and 102.1 lbs/day of NO_X, 68.4 lbs/day of CO, 0.2 lbs/day of SO_X, 17.4 lbs/day of PM_{10}, and 5.8 lbs/day of $PM_{2.5}$. Daily emissions of NO_X would exceed SJVAPCD's localized significance thresholds of 100 lbs/day. In addition, although emissions of PM would not exceed SJVAPCD's significance thresholds, uncontrolled PM emissions could result in nuisance impacts to occupants of nearby residential dwellings. As a result, exposure to localized concentrations of NO_X and PM would be considered a potentially significant impact, prior to mitigation measure implementation.

Long-term Operation

Estimated annual and daily operational emissions are summarized in **(Table 7 and Table 8 of Appendix B)**, respectively. Annual operation of the Project would generate a total of approximately 1.2 tons/year of ROG, 11.3 tons/year of NO_X, 5.6 tons/year of CO, 0.4 tons/year of PM_{10}, and 0.4 tons/year of $PM_{2.5}$. Emissions of SO_X would be negligible, totaling less than 0.1 ton/year. In comparison to existing emissions (refer to **(Table 4 in Appendix B)**), the Project would result in a net increase of approximately 1.0 tons/year of ROG, 9.7 tons/year of NO_X, 4.1 tons/year of CO, 0.3 tons/year of PM_{10}, and 0.3 tons/year of $PM_{2.5}$. Net increases in annual emissions of criteria air pollutants would not exceed SJVAPCD's significance thresholds. It is important to note that existing emissions are conservative and actual net increases in annual operational emissions would likely be less.

As depicted in Table 8, daily operational emissions associated with onsite sources would total approximately 1.7 lbs/day of ROG, 17.5 lbs/day of NO_X, 7.9 lbs/day of CO, <0.1 lbs/day of SO_X, 2.1 lbs/day of PM_{10}, and 0.7 lbs/day of $PM_{2.5}$. Daily onsite emissions would not exceed SJVAPCD's significance thresholds for localized air quality impacts. Because annual and daily emissions would not exceed SJVAPCD's significance thresholds, this impact would be considered less than significant.

To ensure compliance with SJVAPCD Regulation VIII requirements, Mitigation Measure AQ-1 would require the preparation of a DCP to reduce emissions of fugitive dust generated during project construction. Compliance with SJVAPCD Regulation VIII would reduce overall construction-generated PM emissions by approximately 50 percent. In addition, Mitigation Measure AQ-2 includes additional measures that would reduce construction-generated emissions of NO_X. Based on the modeling conducted for this project, implementation of these measures would reduce onsite construction emissions of NO_X to a maximum of approximately 80.9 lbs/day (refer to Table 9). With implementation of Mitigation Measure AQ-2, construction-generated emissions of NO_X would be reduced to below the SJVAPCD's daily significance threshold of 100 lbs/day. It is also important to note that compliance with Mitigation Measure AQ-2 would also result in overall reductions in annual emissions. With implementation of Mitigation Measure AQ-2, annual emissions of ROG and NO_X would be reduced by approximately 65 percent and 40 percent, respectively. Because annual and daily construction-generated emissions would not exceed SJVAPCD's significance thresholds, this impact would be considered less than significant with mitigation incorporation.

III-d) Expose sensitive receptors to substantial pollutant concentrations?

Toxic Air Contaminants

Less Than Significant with Mitigation Incorporation. Pollutants of primary concern commonly associated with construction-related activities include toxic air contaminants (i.e., DPM), asbestos, and fugitive dust. Within the project area, the potential for increased occurrences of Valley Fever is also of concern. Localized air quality impacts associated with these pollutants are discussed in greater detail, as follows:

Toxic Air Contaminants

Construction of the Project, as well as, long-term project operations, may result in temporary increases in emissions of DPM associated with the use of off-road diesel-fueled equipment. Health-related risks associated with diesel-exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer. As such, the calculation of cancer risk associated with exposure of to TACs are typically calculated based on a long-term (e.g., 70-year) period of exposure. Construction activities would occur over an approximate 15-month construction period, which would constitute roughly two percent of the typical 70-year exposure period. The use of diesel-fueled equipment for construction and routine maintenance activities, however, would be episodic and would occur over a relatively large area. It is also important to note that construction-generated emissions of PM would not exceed SJVAPCD's significance thresholds for localized impacts (refer to Impact AQ-3). In addition, implementation of Mitigation Measure AQ-2 would further minimize emissions of DPM from off-road equipment and vehicles. For these reasons and given the relatively high dispersive properties of DPM, exposure to construction-generated DPM would not be anticipated to exceed applicable thresholds (i.e.,

incremental increase in cancer risk of 20 in one million). Exposure to construction-generated DPM would be considered to have a less-than-significant impact.

Naturally Occurring Asbestos

Naturally-occurring asbestos, which was identified by ARB as a TAC in 1986, is located in many parts of California and is commonly associated with ultramafic rock. The project site is not located near any areas that are likely to contain ultramafic rock (DOC 2000). As a result, risk of exposure to asbestos during the construction process would be considered less than significant.

Localized Particulate Concentrations

Construction of the Project would include ground-disturbing activities which would be anticipated to result in increased emissions of airborne particulates. As noted in Impact III-c, onsite PM emissions would be primarily associated with ground-disturbing activities, including site preparation and grading activities.

As previously noted in Impact III-c, short-term construction and long-term operation of the Project would not result in increased daily onsite emissions of particulate matter that would exceed the SJVAPCD's screening thresholds for localized air quality impacts (Appendix B) . However, if uncontrolled, PM emissions could result in nuisance impacts to occupants of nearby residential dwellings. As a result, exposure to localized concentrations of PM would be considered a potentially significant impact, prior to mitigation implementation.

Mitigation Measure AQ-1 includes measures to ensure compliance with SJVAPCD Regulation VIII for the control of construction-generated emissions of fugitive dust, which would reduce nuisance impacts to occupants of nearby land uses. In addition, Mitigation Measure AQ-2 would result in additional reductions of mobile-source PM emissions. With mitigation, this impact would be considered less than significant.

Carbon Monoxide

Localized concentrations of CO are typically associated with the idling of vehicles, particularly in highly congested areas. For this reason, the areas of primary concern are congested roadway intersections that experience high levels of vehicle traffic with degraded levels of service (LOS). With regard to potential increases in CO concentrations that could potentially exceed applicable ambient air quality standards, signalized intersections that are projected to operate at an unacceptable LOS E or F are of particular concern.

Vehicle trips generated by the Project would be primarily associated with routine maintenance activities. In comparison to existing agricultural operations, implementation of the Project is not anticipated to result in overall long-term increases in vehicle trips along area roadways or at nearby intersections. As a result, implementation of the Project would not be anticipated to result in a substantial increase in localized CO concentrations having the potential to exceed applicable ambient air quality standards. This impact would be considered less than significant.

Valley Fever

As noted earlier in this report, Valley Fever is an infection caused by the fungus Coccidioides. Coccidioides spores can become airborne after contaminated soil and dust are disturbed.

Construction activities would include ground-disturbing activities, which could result in an increased potential for exposure of nearby individuals and onsite construction workers to airborne spores. As a result, the potential for increased exposure and contraction of Valley Fever would be considered to have a potentially significant impact, prior to mitigation incorporation.

In addition to the dust control measures specified in Mitigation Measure AQ-1, implementation of Mitigation Measure AQ-3 would require the inclusion of additional measures in the DCP to minimize personnel and public exposure to potential Valley Fever–containing dust. These measures would include a program for the training of onsite personnel and identification of measures to be implemented to minimize the potential for exposure to Valley Fever. With mitigation, this impact would be considered less than significant.

III-e) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. The occurrence and severity of odor impacts depends on numerous factors, including the nature, frequency, and intensity of the source, the wind speed and direction, and the sensitivity of the receptor. Types of land uses that typically pose potential odor problems include agriculture, wastewater treatment plants, food processing and rendering facilities, chemical plants, composting facilities, landfills, waste transfer stations, and dairies. The Project would not result in the installation of major sources of odorous emissions. Therefore, the project would not create objectionable odors that would affect a substantial number of people and odor impacts are considered to be less than significant.

IV. BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

BASELINE CONDITIONS

Appendix C contains a Report of Biological Evaluation prepared by Live Oak Associates, Inc. (LOA). The Report evaluates potential effects to biological resources from construction and operation of the Project. The report includes an analysis of: (1) Literature Search (2) Floristic

Survey (3) Wildlife Survey and (4) Survey for Jurisdictional Waters. Additionally, the report includes the findings of a reconnaissance-level field survey of the Project site which was conducted in October 2 and 11, 2014 and on November 1, 2016, by LOA biologists. This survey consisted of driving the perimeter of the agricultural fields and along the onsite canals, and walking within and around representative habitats of the project site. Information from that report is utilized below in the description of baseline conditions (environmental and regulatory), project-level and cumulative impact analysis and recommended Mitigation Measures.

Environmental Setting

The study area is located at the eastern edge of the Tulare Lake Basin between the foothills of the southern Sierra Nevada and the former location of Tulare Lake. Deer Creek, which originates in the southern Sierra, was one of several tributaries of Tulare Lake.

Like most of California, the Tulare Lake Basin experiences a Mediterranean climate. Warm dry summers are followed by cool moist winters. Summer temperatures commonly exceed 100 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely rise much above 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. Average annual precipitation within the study area varies from about 10 to 12 inches, most of which falls between the months of October and March.

Historically, the broad plain of the Tulare Lake Basin located east of Tulare Lake and west of the Sierra foothills was a mosaic of wetlands, riparian habitats, valley oak savannah, and native grasslands. Rivers tributary to Tulare Lake, as well as their distributary channels and creeks, supported broad corridors of riparian vegetation. Extensive marshes formed around the margins of the lake itself. Between the riparian habitats, marshes, and seasonal wetlands were expansive areas of drier habitats such as perennial grassland and valley oak savannah. These habitats supported a considerable diversity of native wildlife, including large numbers of winter waterfowl, Tule elk, pronghorn, mule deer, grizzly bears, and cougars.

By the beginning of the 20th century, Tulare Lake began to shrink in size due to land reclamation and water diversions. Large dams constructed on the Kings, Kaweah, Tule, and Kern Rivers within the past 60 years now impound water that once flowed into Tulare Lake. Deprived of flows from its major tributaries, the lake no longer exists, although during especially wet winters some vestiges of the lake reappear for brief periods of time (Kenny Phelps pers. comm.). The lakebed now constitutes fertile farmland. The mosaic of wetlands, riparian habitats, oak savannah, and perennial grasslands once occurring to the east of the lake has almost entirely been converted to irrigated agricultural lands. The remaining vestiges of native riparian habitat along the major rivers of the Tulare Lake Basin are nonetheless valuable habitat for many native wildlife species, particularly avian species. Pockets of grassland, wetland, and alkali sink scrub habitat, as well as undisturbed lands around the margins of the Tulare Lake Basin, continue to provide limited habitat for native vertebrate species including various reptiles, many birds, and mammals such

as pocket mice, kangaroo rats, and kit fox. Lands surrounding the study area consist primarily of farmed lands[26].

Regulatory Setting

Federal

Endangered Species Act

The Federal Endangered Species Act (FESA) protects plants and wildlife that are listed as endangered or threatened by the USFWS and National Oceanic and Atmospheric Administration (NOAA) Fisheries. Section 9 of the FESA prohibits the taking of listed wildlife, where taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on Federal land and removing, cutting, digging-up, damaging, or destroying any listed plant on non-Federal land in knowing violation of state law (16USC1538). Pursuant to Section 7 of the FESA, Federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed plant or wildlife species or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to another authorized activity, provided the action will not jeopardize the continued existence of the species. Section 10 of the FESA provides for issuance of incidental take permits to private parties, provided a Habitat Conservation Plan (HCP) is developed.

Migratory Bird Treaty Act

The MBTA implements international treaties devised to protect migratory birds and any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits are in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the CDFG Code.

Federal Clean Water Act

The Federal Clean Water Act's (CWA's) purpose is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into waters of the United States without a permit from the U.S. Army

[26] Appendix C, Live Oak Associates, Inc. Biological Resources Report for the Proposed Pixley Groundwater Bank Project. March 2015. Pages 8-9.

Corps of Engineers (ACOE). The definition of waters of the United States includes rivers, streams, estuaries, the territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3 7b)." The USEPA also has authority over wetlands and may override an ACOE permit. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or Waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the RWQCB.

State

California Endangered Species Act

The California Endangered Species Act (CESA) generally parallels the main provisions of the FESA, but unlike its Federal counterpart, the CESA applies the take prohibitions to species proposed for listing (called candidates by the state). Section 2080 of the CDFG Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the CDFG Code as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The CESA allows for take incidental to otherwise lawful development projects. State lead agencies are required to consult with the CDFG to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered, threatened, or candidate species or result in destruction or adverse modification of essential habitat. The CDFG administers the act and authorizes take through Section 2081 agreements (except for designated fully protected species).

Fully Protected Species

The State of California first began to designate species as fully protected prior to the creation of the CESA and FESA. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians, reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered pursuant to the CESA and/or FESA. The regulations that implement the Fully Protected Species Statute (CDFG Code Section 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, the CDFG prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

Native Plant Protection Act

Regarding listed rare and endangered plant species, the CESA defers to the California Native Plant Protection Act (NPPA) of 1977 (CDFG Code Sections 1900 to 1913), which prohibits importing of rare and endangered plants into California, and the taking and selling of rare and endangered plants. The CESA includes an additional listing category for threatened plants that are not

protected pursuant to NPPA. In this case, plants listed as rare or endangered pursuant to the NPPA are not protected pursuant to CESA, but can be protected pursuant to the CEQA. In addition, plants that are not state listed, but that meet the standards for listing, are also protected pursuant to CEQA (Guidelines, Section 15380). In practice, this is generally interpreted to mean that all species on lists 1B and 2 of the CNPS Inventory potentially qualify for protection pursuant to CEQA, and some species on lists 3 and 4 of the CNPS Inventory may qualify for protection pursuant to CEQA. List 3 includes plants for which more information is needed on Taxonomy or distribution. Some of these are rare and endangered enough to qualify for protection pursuant to CEQA. List 4 includes plants of limited distribution that may qualify for protection if their abundance and distribution characteristics are found to meet the standards for listing.

California Lake and Streambed Alteration Agreement

Sections 1600 through 1616 of the CDFW Code require that a Lake and Streambed Alteration Program Notification Package be submitted to the CDFW for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake." The CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal on which the CDFW and the applicant agree is the Lake and Streambed Alteration Agreement. Often, projects that require a Lake and Streambed Alteration Agreement also require a permit from the ACOE pursuant to Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the Lake and Streambed Alteration Agreement may overlap.

Local

Tulare County General Plan Policies

- ERM-1: To preserve and protect sensitive significant habitats, enhance biodiversity, and promote healthy ecosystems throughout the County.

    - ERM-1.1: Protection of Rare and Endangered Species – The County shall ensure the protection of environmentally sensitive wildlife and plant life, including those species designated as rare, threatened, and/or endangered by State and/or Federal government, through compatible land use development.

    - ERM – 1.2: Development in Environmentally Sensitive Areas – The County shall limit or modify proposed development within areas that contain sensitive habitat for special status species and direct development into less significant habitat areas. Development in natural habitats shall be controlled so as to minimize erosion and maximize beneficial vegetative growth.

    - ERM-1.4: Protect Riparian Areas – The County shall protect riparian areas through habitat preservation, designation as open space or recreational land uses, bank stabilization, and development controls.

- ERM-1.6: Management of Wetlands – The County shall support the preservation and management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats.

- ERM-1.9: Coordination of Management on Adjacent Lands – The County shall work with other government land management agencies (such as the Bureau of Land Management, US Forest Service, National Park Service) to preserve and protect biological resources, including those within and adjacent to designated critical habitat, reserves, preserves, and other protected lands, while maintaining the ability to utilize and enjoy the natural resources in the County.

- ERM-1.12: Management of Oak Woodland Communities – The County shall support the conservation and management of oak woodland communities and their habitats.

- ERM-1.16: Cooperate with Wildlife Agencies – The County shall cooperate with State and Federal wildlife agencies to address linkages between habitat areas.

- ERM-1.17: Conservation Plan Coordination – The County shall coordinate with local, State and Federal habitat conservation planning efforts to protect critical habitat areas that support endangered species and other special-status species.

IMPACT ASSESSMENT

IV-a) Will the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 1.1, state and Federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and Federal endangered species legislation. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own lists of native plants considered rare, threatened or endangered (CNPS 2014). Collectively, these plants and animals are referred to as "special status species."

Special status plants and wildlife occurrences within the project vicinity, and their potential for occurrence on the study area, have been identified in Table 1-2. Sources of information for Table 1-2 included the *California Natural Diversity Data Base* (CNDDB) (CDFW 2014), *USFWS List of Endangered, Threatened, and Proposed Species* (USFWS 2014) (see Appendix C), *Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants* (CDFG 2014),

The California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California (CNPS 2014), and *California's Wildlife, Volumes I, II, and III* (Zeiner et. al. 1988).

The CNDDB was used to search the nine U.S.G.S. 7.5 minute quadrangles containing and immediately surrounding the study area (*Sausalito School, Ducor, Richgrove, Delano East, Delano West, Pixley, Tipton, Woodville, and Porterville*) for special status plant and animal species and natural communities of special concern. The same nine quadrangles were queried for Federally listed species and designated critical habitat using the Sacramento USFWS office's Endangered Species List Generator.

Table 0-2 List of Special Status Species that Could Occur in the Tulare Basin and Their Potential to Occur Within the Study Area27

Common Name	Scientific Name	Status	Occurrence on the Study Area
PLANTS			
California jewel-flower	*Caulanthus californicus*	FE, CE, CNPS 1B.1	Absent
Kern mallow	*Eremalche kernensis*	FE	Absent
Springville Clarika	*Clarkia springvillensis*	FT, CE, CNPS 1B.2	Absent
Striped Adobe Lily	*Fritillaria striata*	CT, CNPS 1B.1	Absent
San Joaquin Adobe Sunburst	*Pseudobahia peirsonii*	FT, CE, CNPS 1B.1	Absent
Earlimart Orache	*Atriplex cordulata* var. *erecticaulis*	CNPS 1B.2	Absent
Lost Hills Crownscale	*Atriplex coronata* var. *vallicola*	CNPS 1B	Absent
Brittlescale	*Atriplex depressa*	CNPS 1B.2	Absent
Vernal Pool Smallscale	*Atriplex persistens*	CNPS 1B.2	Absent
Subtle Orache	*Atriplex subtilis*	CNPS 1B.2	Absent
Alkali Mariposa-Lily	*Calochortus striatus*	CNPS 1B.2	Absent
Recurved Larkspur	*Delphinium recurvatum*	CNPS 1B.2	Unlikely
Spiny-Sepaled Button Celery	*Eryngium spinosepalum*	CNPS 1B.2	Absent
ANIMALS			
Conservancy Fairy Shrimp	*Branchinecta conservatio*	FE	Absent
Vernal Pool Fairy Shrimp	*Branchinecta lynchi*	FT	Absent
Valley Elderberry Longhorn Beetle	*Desmocerus californicus dimorphus*	FT	Absent
Delta Smelt	*Hypomesus transpacificus*	FT	Absent
California Red-Legged Frog	*Rana aurora draytonii*	FT	Absent
Blunt-Nosed Leopard Lizard	*Gambelia silus*	FE, CE, CFP	Absent
Giant Garter Snake	*Thamnophis gigas*	FT	Absent
Swainson's Hawk	*Buteo swainsoni*	CT	Possible
Tipton Kangaroo Rat	*Dipodomys nitratoides nitratoides*	FE, CT	Absent

[27] Appendix C, Live Oak Associates, Inc. Biological Resources Report for the Proposed Pixley Groundwater Bank Project. March 2015. Table 2, pages 19-23.

Common Name	Scientific Name	Status	Occurrence on the Study Area
San Joaquin Kit Fox	*Vulpes macrotis mutica*	FE, CT	Unlikely
Kern Brook Lamprey	*Entosphenus hubbsi*	CSC	Unlikely
Western Spadefoot	*Scaphiopus hammondii*	CSC	Absent
Coast Horned Lizard	*Phrynosoma blainvillii*	CSC	Unlikely
San Joaquin Coachwhip	*Masticophis flagellum ruddocki*	CSC	Absent
Western Pond Turtle	*Actinemys marmorata*	CSC	Unlikely
White-tailed Kite – nesting	*Elanus leucurus*	CFP	Possible
Northern Harrier – nesting	*Circus cyaneus*	CSC	Possible
Burrowing Owl	*Athene cunicularia*	CSC	Possible
Loggerhead Shrike	*Lanius ludocicianus*	CSC	Possible
Tricolored Blackbird	*Agelaius tricolor*	CSC	Possible
Pallid Bat	*Antrozous pallidus*	CSC	Possible
Townsend's Western Big-Eared Bat	*Corynorhinus townsendii*	CSC	Possible
American Badger	*Taxidea taxus*	CSC	Unlikely
Occurrence Designations: Present: Species observed on the study area at time of field surveys or during recent past. Likely: Species not observed on the study area, but it may reasonably be expected to occur there on a regular basis.	Possible: Species not observed on the study area, but it could occur there from time to time. Unlikely: Species not observed on the study area, and would not be expected to occur there except, perhaps, as a transient. Absent: Species not observed on the study area, and precluded from occurring there because habitat requirements not met.	Status Codes: Federal: FE = Federally Endangered, FT = Federally Threatened, FPE = Federally Endangered (Proposed), FC = Federal Candidate, California: CE = California Endangered, CT = California Threatened, CR = California Rare, CFP = California Fully Protected, CSC = California Species of Special Concern	CNPS: 1A = Plants Presumed Extinct in California, 1B = Plants Rare, Threatened, or Endangered in California and Elsewhere CNPS Threat Ranks: 0.1 = Seriously Threatened in California, 0.2 = Fairly Threatened in California, 0.3 = Not Yet Threatened in California

A study of the project site found that thirteen special status vascular plant species are known to occur in the vicinity of the project site. These species include the California Jewel-Flower (*Caulanthus californicus*), Kern Mallow (*Eremalche kernensis*), Springville Clarkia (*Clarkia springvillensis*), Striped Adobe Lily (*Fritillaria striata), San Joaquin Adobe Sunburst (Pseudobahia peirsonii),* Earlimart Orache (*Atriplex cordulata var. Erecticaulis*), Lost Hills Crownscale (*Atriplex coronata var. vallicola*), Brittlescale (*Atriplex depressa*), Vernal Pool Smallscale (*Atriplex persistens*), Subtle Orache (*Atriplex subtilis*), Alkali Mariposa-Lily (*Calochortus striatus*), Recurved Larkspur (*Delphinium recurvatum*), and Spiny-Sepaled Button Celery (*Eryngium spinosepalum*). It was determined that habitat for these species is absent from the study area, due to decades of agricultural disturbance and yearly discing of the fields. As these species are absent, future development of the project site will not result in a significant or adverse effect on any candidate, sensitive, or special status species.

Of the 23 special status animal species potentially occurring in the region, 14 species would be absent or unlikely to occur on the site due to unsuitable habitat conditions. These include the conservancy fairy shrimp (*Branchinecta conservatio*), vernal pool fairy shrimp (*Branchinecta*

lynchi), valley elderberry longhorn beetle (*Desmocerus californicus* ssp. *dimorphus*), Delta smelt (*Hypomesus transpacificus*), California red-legged frog (*Rana aurora draytonii*), blunt-nosed leopard lizard (*Gambelia silus*), giant garter snake (*Thamnophis gigas*), Kern brook lamprey (*Entosphenus hubbsi*), western spadefoot (*Scaphiopus hammondii*), western pond turtle (*Actinemys marmorata*), coast horned lizard (*Phrynosoma blainvillii*), San Joaquin coachwhip (*Masticophis flagellum* ssp. *ruddocki*), Tiptons kangaroo rat (*Dipodomys nitratoides nitratoides*) and American badger (*Taxidea taxus*). Loss of habitat as a result of future development of the project site will not result in a significant or adverse effect on these species, because there is little or no likelihood that they are present.

Endangered, threatened, or special status plant and animal species meriting further discussion include the Swainson's hawk, burrowing owl, the San Joaquin kit fox and roosting bats.

Swainson's hawk (Buteo swainsoni). Federal Listing Status: None; State Listing Status: Threatened.

Potential to occur onsite: Some potential foraging habitat for the Swainson's hawk is available within open alfalfa fields and marginal foraging habitat is available in one fallow field of the study area; however, the majority of the study area comprises orchards and other cover types incompatible with this species' foraging strategies. A few mature trees suitable for Swainson's hawk nesting do occur within the study area, including the Deer Creek corridor upstream and downstream of the project stream crossing, within trees of the industrial/residential areas, and within a single atlas cedar (*Cedrus atlantica*) along Road 184 within the in-lieu service area (Appendix B).

Potential Impacts: Trees located within the larger study area and adjacent to the study area provide potential nesting habitat for Swainson's hawks. Project-related activities occurring at or near potential nest trees could result in the abandonment of active Swainson's hawk nests or direct mortality to these birds, should they be nesting in them at the start of construction.

Construction activities conducted during the nesting season (February 1-August 31) that adversely affect the nesting success or result in mortality of Swainson's hawks would constitute a violation of state and Federal laws (see Section 3.2.4) and would constitute a significant impact of the project as defined by CEQA.

Mitigation Measures:

MM BIO-1: Prior to the construction of the project the applicant will implement the following measure(s) as necessary.

> ***MM BIO-1a (Avoidance):*** In order to avoid impacts to Swainson's hawks from Project construction, construction shall occur between September 1st and January 31st, outside the Swainson's hawk nesting season to the extent feasible.

***MM BIO-1b* (*Pre-construction Surveys*).** If construction must occur between February 1st and August 31st, a qualified biologist will conduct a pre-construction survey for Swainson's hawk nests on the project site and on lands within a half-mile from the project site within no more than 10 days before the onset of these activities. Survey shall follow the methodology developed by the Swainson's hawk Advisory Committee (SWHA TAC, 2000).

***MM BIO-1c* (*Establish Buffers*).** Should any active nests be discovered in or near proposed construction zones, the biologist will establish a half-mile no disturbance buffer, unless a smaller buffer can adequately protect the nest as determined by the biologist, pending the nature of disturbance and the presence or absence of disturbance barriers between the nest and construction. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.[28]

Implementation of these measures will reduce potentially significant project impacts to the Swainson's hawk to a "less than significant" level under CEQA.

Burrowing owl (Athene cunicularia). Federal Listing Status: None; State Listing Status: Species of Special Concern.

Potential to occur onsite: The majority of the study area is marginal to unsuitable as foraging habitat for the burrowing owl due to intensive agricultural practices and/or incompatible vegetative cover type, which limit prey availability and accessibility for this species. Burrowing owls would not forage in orchard or vineyard habitats, and would only be expected to use corn fields seasonally, when the crop isn't prohibitively high. Burrowing owls may, however, forage in the study area's fallow field or alfalfa fields, and could possibly roost or nest around the margins of these fields. The Deer Creek corridor offers only marginal foraging and nesting habitat due to the disturbed nature of surrounding lands and the general high density of vegetation along the upper banks. Nonetheless, a few California ground squirrel burrows were present. An inspection of the few burrows that existed along the stretch of Deer Creek within the project footprint found no evidence of burrowing owl habitation. The CNDDB lists several occurrences of burrowing owls approximately 11 miles west of the study area in the Pixley National Wildlife Refuge (CDFW 2016a).

Potential Impacts: The study area provides some suitable nesting/denning habitat in the form of a few scattered California ground squirrel burrows, primarily located along the banks of Deer Creek. Foraging habitat is extremely limited. These small raptors are protected under the Federal Migratory Bird Treaty Act and California Fish and Game Code. Project-related grading activities have the potential to bury owls that may retreat to burrows ahead of heavy equipment. Mortality of individual birds would be a violation of state and Federal law and would constitute a significant impact of the project as defined by CEQA.

[28] Appendix C, Live Oak Associates, Inc. Biological Resources Report for the Proposed Pixley Groundwater Bank Project. March 2015. Page 37-38.

Mitigation:

MM BIO-2. Prior to ground disturbance activities, the following measure(s) adapted from the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) will be implemented as necessary:

> ***MM BIO-2a (Take Avoidance Survey).*** A take avoidance survey for burrowing owls shall be conducted by a biologist who meets the qualifications to perform burrowing owl surveys as set forth in the Staff Report on Burrowing Owl Mitigation (CDFW2012). The surveys shall be conducted between 14 and 30 days prior to the start of construction. This take avoidance survey shall be conducted according to methods described in the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). The survey area shall include all suitable habitats on and within 200 meters of Project impact areas, where accessible.
>
> ***MM BIO-2b (Avoidance).***–Burrowing owl surveys of the recharge basins shall be conducted by a biologist who meets the qualifications to perform burrowing owl surveys as set forth in the Staff Report on Burrowing Owl Mitigation (CDFW2012). The surveys shall be conducted prior to the inundation of the recharge basins. The purpose of these surveys is to ensure that burrowing owl have not moved into the area. Surveys shall only occur in years when flooding of the recharge basins shall occur. The need for these surveys shall be reassessed in coordination with the USFWS and CDFW after seven years of surveys have been completed. A burrowing owl survey report shall be submitted to CDFW and the USFWS by December 31 of each year in which surveys are conducted.
>
> ***MM BIO-2c (Avoidance of Active Nests).*** If Project activities are undertaken during the breeding season (February 1-August 31) and active nest burrows are identified within or near Project impact areas, a 200-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented by the Authority in consultation with CDFW. The buffers shall be enclosed with temporary fencing or flagging to prevent construction equipment and workers from entering the setback area. Buffers shall remain in place for the duration of the breeding season, unless otherwise arranged with CDFW. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.
>
> ***MM BIO-2d (Passive Relocation of Resident Owls).*** During the non-breeding season (September 1-January 31), resident owls occupying burrows in Project impact areas may either be avoided, or passively relocated to alternative habitat. If the Authority chooses to avoid active owl burrows within the impact area during the non-breeding season, a 50-meter disturbance-free buffer shall be established around these burrows, or alternate avoidance measures implemented in consultation with CDFW. The buffers shall be enclosed with temporary fencing, and shall remain in place until a qualified biologist determines that the burrows are no longer active. If the Authority chooses to passively relocate owls during the non-breeding season, this activity shall be conducted in accordance with a relocation plan prepared by a qualified biologist. Passive relocation may include one or more of the following elements: 1) establishing a minimum 50-foot buffer around all active burrowing owl burrows, 2) removing all suitable burrows outside the 50-foot buffer and up to 50 meters outside of the impact areas as necessary, 3)

installing one-way doors on all potential owl burrows within the 50-foot buffer, 4) leaving one-way doors in place for 48 hours to ensure owls have vacated the burrows, and 5) removing the doors and excavating the remaining burrows within the 50-foot buffer.

Implementation of these measures will reduce potentially significant project impacts to burrowing owls to a "less than significant" level under CEQA and ensure compliance with state and Federal laws protecting these species.[29]

San Joaquin kit fox (Vulpes macrotus mutica). Federal Listing Status: Endangered; State Listing Status: Threatened.

Potential to occur on site: The study area is generally of low habitat value for kit fox due to intensive agricultural practices and resultant limited prey base. Surrounding lands consisting of agricultural fields and urban areas provide similar low habitat value. Suitable denning habitat for kit foxes was observed within several burrows along the banks of the Deer Creek channel during the November 2016 field surveys. No evidence of use by the San Joaquin kit fox was observed during reconnaissance surveys. The burrows did not have a dirt berm or matted vegetation near the entrance, or prey remains in the vicinity. As the San Joaquin kit fox is not typically associated with use of riparian habitat as a movement corridor, the Deer Creek channel does not provide particularly valuable habitat for the kit fox.

Of primary interest for the assessment are kit fox records from the vicinity of the study area. According to the CNDDB there have been 45 documented sightings within ten miles of the study area (see Figure 6 of Appendix C) (CDFW 2016a). These sightings occurred north, east, south and west of the study area between 1971 and 2004. Only one of these sightings occurred in the 21st century (2004) and it was 9 miles southwest of the study area. An additional five sightings were in the 1990s (between 1992 and 1997), with all remaining sightings greater than 25 years old. None of these sightings occurred within the study area itself.

In summary, based on the poor quality of habitats on and adjacent to the study area and the lack of recent documented occurrences, the San Joaquin kit fox is unlikely to be present on the study area. However given its presence in the region, it could conceivably pass through the study area from time to time.

Potential Impacts: If one or more kit foxes were present on the project site at the time of construction, then they would be at risk of construction-related mortality. As discussed, this species is listed as both federally and state endangered. In the absence of incidental take authorization by the USFWS and CDFW, construction mortality of the San Joaquin kit fox would constitute a violation of the state and Federal Endangered Species Acts. Construction mortality of the San Joaquin kit fox would also constitute a significant impact of the project as defined by CEQA.

[29] Appendix C, Live Oak Associates, Inc. Biological Resources Report for the Proposed Pixley Groundwater Bank Project. March 2015. Pages 39-40..

Mitigation:

MM BIO-3. Prior to construction, the following measures adapted from the U.S. Fish and Wildlife Service 2011 *Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance* (Appendix G of Biological Evaluation contained in Appendix C of this document) will be implemented.

MM BIO 3a (Pre-construction Surveys). A Service-approved biologist shall conduct pre-construction surveys no fewer than 14 days and no more than 30 days prior to the onset of any ground disturbing activity. The primary objective is to identify kit fox habitat features (e.g. potential dens and refugia) on the project site. If San Joaquin kit fox are detected at any time, all activities associated with the project shall be halted immediately. The project shall be placed on hold until consultation with the SERVICE and CDFW is completed.

MM BIO-3b (Employee Education Program). The Authority shall conduct an employee education program prior to the start of construction. The Authority shall retain a Service-approved biologist to conduct one brief presentation on the San Joaquin kit fox to train any and all construction staff that shall be involved with the Project. This training shall include:

- A description of the San Joaquin kit fox and its habitat needs;
- Information on the San Joaquin kit fox occurrence within the Project vicinity;
- An explanation of the status of the species and its protection under the Endangered Species Act; and
- A list of the measures being taken to reduce impacts to the species during construction.
- A "fact sheet" conveying all of the training information prepared and distributed to all construction personnel in attendance at the initial training and to be used by construction manager to train any additional construction staff that was not in attendance at the first meeting, prior to starting work on the Project.
- The Authority shall provide a summary of the training provided, including a list of personnel attending to Reclamation and the USFWS within 7 days of the training.

MM BIO-3c (Avoidance).
San Joaquin kit fox surveys of the recharge basins shall be conducted by a USFWS approved biologist prior to the inundation of the recharge basins. The purpose of these surveys is to ensure that San Joaquin kit fox have not moved into the area. Surveys shall only occur in years when flooding of the recharge basins shall occur. The need for these surveys shall be reassessed in consultation with the USFWS and coordination with CDFW after seven years of surveys have been completed. A San Joaquin kit fox survey report shall be submitted to CDFW and the USFWS by December 31 of each year in which surveys are conducted.

MM BIO 3d (Minimization).

Construction activities shall be carried out in a manner that minimizes adverse effects to San Joaquin kit foxes, should they occur in the action area. Minimization measures shall include:

- Project-related vehicles shall observe a daytime speed limit of 15-mph throughout the site in all project areas, except on state and federal highways Night-time work, such as equipment maintenance shall be minimized to the extent possible. However, if work does occur after dark, the speed limit shall be reduced to 10-mph.
- Off-road project-related construction traffic outside of designated Project Area shall be prohibited.
- Construction work at night (half hour after sunset to half-hour before sunrise) shall not be allowed.
- To prevent inadvertent entrapment of San Joaquin kit fox or other animals during construction, all excavated, steep-walled holes or trenches more than 1 foot deep shall be covered with plywood or similar materials at the end of each workday. If the trenches cannot be closed, one or more escape ramps constructed of earthen fill or wooden planks shall be installed. Before such holes or trenches are filled, they shall be inspected for trapped animals.
- All construction pipes, culverts, or similar structures with a diameter of four inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for San Joaquin kit fox before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a San Joaquin kit fox is discovered inside a pipe, that section of pipe shall not be moved until the Service has been consulted and CDFW contacted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.
- Before the start of work each day, the work site will be checked for animals under any equipment to be used that day, such as vehicles or stockpiles of items such as pipes. If a San Joaquin kit fox is found it will be allowed to leave on its own volition. Work will be halted and Reclamation contacted. Reclamation will notify the Service and CDFW within 48 hours.
- All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a day from a construction or project site.
- No firearms shall be permitted on the project site.
- No pets shall be permitted on the project site.
- Use of rodenticide in the project areas shall not be allowed.

- Upon completion of the project, all areas subject to temporary ground disturbances, including staging areas, temporary roads, and borrow sites shall be re-contoured if necessary and revegetated with native seed to promote restoration of the area to pre-project conditions.
- Sightings of San Joaquin kit fox shall be reported to California Natural Diversity Data Base.[30]
- The contractor will be required to keep their equipment in good working condition in order to prevent leaks and spills of petroleum products or other fluids into waters of the U.S.
- All equipment will be washed prior to arriving at the Project site to remove soil and seeds and to prevent spread of noxious weeds.

Implementation of these measures will reduce potentially significant project impacts to the San Joaquin kit fox to a "less than significant" level under CEQA.

Roosting bats. Federal Listing Status: None; State Listing Status: Special Species of Concern.

Potential to occur on site: Mature orchard and native riparian trees and roadway bridges within the study area provide potential roosting habitat for several species of bat.

Potential Impacts:

Riparian trees, structures, and roadway bridges within the study area provide potential roosting habitat for several species of bat. Development of the project could result in removal of trees potentially supporting maternal roosting bats. Structures within the industrial/residential areas could serve as roosting habitat for both pallid bat and Townsend's big-eared bat, and will likely be removed for the construction of recharge basins. Impacts to riparian trees or structures with maternal roosts have the potential to result in the mortality of many juvenile bats and would be considered a significant impact of the project as defined by CEQA and NEPA. No modifications are proposed to the bridge over Deer Creek, which could serve as roosting habitat for both pallid bat and Townsend's big-eared bat.

Mitigation:

MM BIO 4. In order to minimize construction disturbance to maternal roosting bats in onsite riparian trees or structures, the applicant will implement the following measures:

> ***MM BIO-4a (Temporal Avoidance).*** Riparian tree removal and/or structure demolition will occur after September 30, and before April 1, outside the roosting bat season.

[30] Appendix C of Attachment 1, Live Oak Associates, Inc. Biological Resources Report for the Proposed Pixley Groundwater Bank Project. March 2015. Page 35-36.

MM BIO-4b (Preconstruction Surveys). If removal of riparian trees and/or structure demolition must occur between April 1 and September 30 (general maternity bat roost season), a qualified biologist shall survey affected trees for the presence of bats within 30 days prior to these activities. The biologist shall look for individuals, guano, and staining, and shall listen for bat vocalizations. If necessary, the biologist shall wait for nighttime emergence of bats from roost sites. If no bats are observed to be roosting or breeding, then no further action would be required, and construction would proceed.

MMBIO-4c (Minimization). If a non-breeding bat colony is detected during pre-construction surveys, the individuals will be humanely evicted via partial dismantlement of trees prior to full removal under the direction of a qualified biologist to ensure that no harm or "take" of any bats occurs as a result of construction activities.

MM BIO-4d (Avoidance of Maternity Roosts). If a maternity colony is detected during preconstruction surveys, a disturbance-free buffer will be established around the colony and remain in place until a qualified biologist deems that the nursery is no longer active. The disturbance-free buffer will range from 50 to 100 feet as determined by the biologist. Implementation of these measures will reduce potentially significant project impacts to roosting bats to a "less than significant" level under CEQA

MM BIO-4e (Consultation if Maternity Roosts Cannot be Avoided). If roosts are determined to be present and must be removed, the bats will be excluded from the roosting site before the tree is removed. A mitigation program addressing compensation, exclusion methods, and roost removal procedures will be developed in consultation with CDFW before implementation. Exclusion methods may include use of one-way doors at roost entrances or sealing roost entrances when a site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g. during hibernation or while females in maternity colonies are nursing young).

MM BIO-4f (Compensation for Habitat Loss). The loss of each roost will be replaced, in consultation with CDFW, and may include construction and installation of bat boxes suitable to the bat species and colony size excluded from the original roosting site(s). Roost replacement will be implemented before bats are excluded from the original roost site(s). Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost sites, the tree(s) may be removed.[31]

IV-b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. Riparian habitat within the study area is limited to Deer Creek; no other sensitive habitats are present. A number of large riparian trees are present within the study area; many of them have died from drought. Temporary impacts will

[31] Appendix C, Live Oak Associates, Inc. Biological Resources Report for the Proposed Pixley Groundwater Bank Project. March 2015. Page 41.

occur to approximately 1,400 sf of Deer Creek from trenching the pipeline crossing. The pipeline crossing location appears to lack woody vegetation. Woody riparian vegetation within the project footprint is not anticipated to be impacted.

Deer Creek also meets the criteria of a stream, regulated by CDFW under section 1602 of the Fish and Game Code. CDFW requires that an application for a Streambed Alteration Agreement be prepared and submitted, prior to commencing any activity that may do one or more of the following: Substantially divert or obstruct the natural flow of any river, stream or lake; Substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or Deposit debris, waste or other materials that could pass into any river, stream or lake.

Mitigation.

MM BIO-5. In order to minimize impacts to riparian habitat, the applicant will implement the following measures:

> ***MM BIO-5a (Revegetation of Disturbed Areas).*** After construction, all disturbed areas within Deer Creek will be restored to the original contours. The small area of Deer Creek to be disturbed is anticipated to revegetate naturally.
>
> ***MM BIO-5b (Replacement Planting).*** Should avoidance of riparian trees not be possible, the SVWBA will provide compensation. Replacement planting will be implemented at a ratio of 3:1 for trees between 4-24 inches in diameter at breast height (DBH), and at a ratio of 10:1 for trees greater than 24 inches in DBH. Species chosen for the plant pallet will include native riparian trees such as valley oaks, Oregon ash and Fremont's cottonwoods. Seed and cuttings will be gathered from its lands fronting the Deer Creek watershed, if possible. These trees will be planted as container plants and cuttings. All planting material will be installed in the late fall or early winter. All plantings will be monitored annually for a minimum of five years. A revegetation plan pursuant to the Lake and Streambed Alteration Agreement with the CDFW will be completed for the project which will detail the maintenance, monitoring, performance criteria and success rate for trees planted within the project site.

Implementation of these measures will reduce potentially significant project impacts to riparian habitat to a "less than significant" level under CEQA.

IV-c) Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant Impact. Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Game (CDFG), and the California Regional Water Quality Control Board (RWQCB).

The Friant-Kern Canal is regulated under the Clean Water Act as a Water of the U.S. The Friant-Kern Canal is a 152-mile long aqueduct managed by the U.S. Bureau of Reclamation that conveys water to augment irrigation capacity in Fresno, Tulare and Kern Counties. Since it originates in the San Joaquin River and terminates in the Kern River, it has been claimed as jurisdictional water by the USACE. The project will result in approximately 1,000 sf of permanent impact to the FKC, a ruderal feature consisting of a concrete-lined banks and paved levee roads. Impacts to the ruderal habitats of the canal will have no measurable effect on the value or function of waters of the U.S., and will not result in a significant or adverse effect of the project.

Deer Creek flows through the study area and currently terminates into the east bank of the Homeland Canal in the San Joaquin Valley, just east of the Tulare – Kings County border. The Corps previously issued an approved jurisdictional determination (AJD) on May 27, 2015, (SPK-2015-00265) and verified the presence of approximately 2.040 acres of waters of the United States (Friant-Kern Canal) within the original 4,222-acre Study Area. The Corps also determined that the 3.086 acres of waters identified as "Deer Creek," the 1.122 acres of water identified as "Tail Water Pond/Ditch," and the 9.568 acres of water identified "Irrigation Holding Pond" on the original delineation map dated April 2015 are intrastate isolated waters with no apparent interstate or foreign commerce connection (Appendix D).

A request for verification of the 4,577-acre Revised Pixley Groundwater Bank Study Area, which contains approximately 26.079 acres of water features, was submitted to the Corps on November 21, 2016. As of March 21, 2017, the Corps' updated AJD for the Modified Proposed Project is still pending; however, it is anticipated that the Corps will classify the new water features (ID1, ID2, IP15, and the expanded reach of Deer Creek) as intrastate isolated waters as they also lack an interstate or foreign commerce connection.

Based on the findings of the jurisdictional delineation report completed for the project, irrigation ponds and ditches within the study area would not be considered jurisdictional, since these artificial ponds were created by excavating or diking dry land to collect and retain water which is used exclusively for irrigation purposes[32]. Therefore, impacts would be less than significant.

IV-d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant Impact with Mitigation Incorporated. The study area consists of and is surrounded by developed or highly disturbed agricultural lands; however, Deer Creek does provide some movement opportunities for wildlife species through the study area. The trenching of the pipeline through Deer Creek will not result in any new barriers to wildlife movements. Therefore, this project will not result in a significant or adverse effect on regional wildlife movements.

[32] Appendix C, Live Oak Associates, Inc. Biological Resources Report for the Proposed Pixley Groundwater Bank Project. March 2015. Pages 42-43.

Active Raptor and Migratory Bird Nests

Potential to occur on site: In addition to the Swainson's hawk discussed in Impact IV-a, other raptor species such as white-tailed kites, red-tailed hawks and American kestrels likely forage over the study area and could potentially nest in large trees within the study area or directly adjacent to the site. Additionally, the site provides nesting habitat for a number of migratory bird species. Even the most disturbed habitats of the study area could be used by loggerhead shrike, killdeer (*Charadrius vociferous*) or other disturbance-tolerant birds protected by the Federal Migratory Bird Treaty Act and related state laws.

Potential Impacts:

If birds were to nest on the project site prior to construction, project-related activities could result in the abandonment of active nests or direct mortality to these birds. If Construction activities adversely affect the nesting success of raptors or result in mortality of individual birds, this would be a violation of state and Federal laws and would constitute a significant impact of the project as defined by CEQA.

Mitigation:

MM BIO-6. In order to minimize construction disturbance to active raptor and other bird nests, the applicant will implement the following measure(s), as necessary, prior to project construction:

***MM BIO-6a* (*Avoidance*).** In order to avoid impacts to nesting raptors and migratory birds, applicable activities will occur, where possible, outside the nesting season, or between September 1st and January 31st.

***MM BIO-6b* (*Pre-construction Surveys*).** If applicable activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct preconstruction surveys for active raptor and migratory bird nests no more than 10 days before the onset of these activities. Surveys for raptors will include areas on and within 500 feet, and migratory birds on and within 250 feet of the site, where accessible. If no active nests are found within the survey area, no further mitigation is required.

***MM BIO-6c* (*Establish Buffers*).** Should any active nests be discovered in or near proposed construction zones, the biologist will identify a suitable construction-free buffer around the nest in coordination with the District, Reclamation, CDFW and/or the USFWS. This buffer will be identified on the ground with flagging or fencing, and will be maintained until the biologist has determined that the young have fledged.

Implementation of these measures will reduce potentially significant project impacts to nesting raptors and migratory birds to a "less than significant" level under CEQA and ensure compliance with state and Federal laws protecting these species.[33]

IV-e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The Project proponent will comply with County general plan environmental resource management policies for protecting biological resources and therefore the project will not be in conflict with said policies. The only policy or ordinance of the County specifically addressing tree preservation is Co. General Plan Policy ERM 1.12-Management of Oak Woodland Communities. There are no oak woodland communities within the Project site or area, therefore the Project will not be in conflict with said Policy. Therefore, the Project will have no impact.

IV-f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The Recovery Plan for Upland Species in the San Joaquin Valley identifies 94 public and conservation lands within their planning area. The closest conservation land to the Project site is the Pixley Vernal Pools Preserve; a private land area located approximately 2 miles north of the Project site[34]. The project will not conflict with any adopted habitat conservation plans or natural community conservation plans as there are none which include the Project Area. Therefore, there would be no impact.

[33] Appendix C, Live Oak Associates, Inc. Biological Resources Report for the Proposed Pixley Groundwater Bank Project. March 2015. Pages 38-39.
[34] U.S. Fish and Wildlife Service, Region 1. Recovery Plan for Upland Species in the San Joaquin Valley, Figure 04. http://esrp.csustan.edu/gis/rp/lom.html Accessed March 5, 2015.

V. CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

BASELINE CONDITIONS

Appendix E contains a cultural evaluation report of the Project entitled *Class III Inventory/Phase I Cultural Resources Survey*. This report was prepared by AMS Affiliates[35] to evaluate potential effects to cultural and paleontological resources from construction and operation of the Project. Information from that report is utilized below in the description of baseline conditions (environmental and regulatory), project-level and cumulative impact analysis and recommended Mitigation Measures.

Environmental Setting

The Project Site includes approximately 1,056 acres of which 500-800 acres will be disturbed by construction of project facilities and appurtenances. The Project will construct a new turn-out from the west bank of the concrete lined Friant-Kern Canal; a 4.5 mile, 48 to 60-in diameter main concrete pipeline, depending on final engineering design, running along the north side of Avenue 80 and crossing Deer Creek; other interconnect pipelines and control facilities to various grower turn-outs off the main pipeline, up to five groundwater recovery wells in existing agricultural fields in the in-lieu service area adjacent to both sides of Avenue 80; a regulating basin and associated pump; and an approximately 500-800 acres within the 1,012 acre study area will be recharge basins including up to sixteen new wells (for no more than a maximum of 16 wells total) Construction of these facilities could directly impact surface and subterranean cultural resources. Maximum depth of disturbance is estimated to be approximately 6 feet.

The Project area is located in the southeastern portion of the Central Valley, known as the San Joaquin Valley, between the California Coastal Ranges to the west and the Sierra Nevada to the east. Historically and currently, the majority of the land use within the survey area has been agricultural, and has been previously used for agricultural cultivation and animal raising. As a result of agricultural practices, much of the top layers of the soils have been disturbed on an ongoing basis. However, previously unknown cultural and paleontological resources beyond the agricultural disturbance layers may exist.

[35] AMS Affiliates was hired as a sub-consultant under a contractual agreement between Authority and Petra Resource Management.

Regulatory Setting

Federal

The Project requires compliance with the California Environmental Quality Act (CEQA) as well as the National Historic Preservation Act (NHPA) of 1966, as amended. Both the NHPA and CEQA essentially mandate that government agencies take into consideration the effects of their actions on cultural resources listed on or eligible for inclusion in the California Register of Historical Resources (CRHR) (defined as historical resources at 14 CCR § 15064.5[a]) and the National Register of Historic Places (NRHP) (defined as historic properties at 36 CFR § 800.16[l]). A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. While the NRHP and CRHR significance criteria are similar, the former is given precedence in this analysis because cultural resources eligible for the NRHP are also eligible for inclusion in the CRHR, but the reverse is not necessarily true (PRC 5024.1[c]). Therefore, employing the Federal standards will be applicable in both Federal and state regulatory contexts.

National Historic Preservation Act (NHPA) of 1966

The NHPA of 1966, as amended (16 United States Code 470 *et seq*.), is the primary Federal legislation that outlines the Federal government's responsibility to consider the effects of its actions on historic properties and affords the Advisory Council on Historic Preservation a reasonable opportunity to comment. Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800 describes the process that the Federal agency shall take to identify cultural resources and assess the level of effect that the proposed undertaking will have on historic properties. An undertaking is defined as a "…project, activity or program funded in whole or in part, under the direct or indirect jurisdiction of a Federal agency." This includes projects that are carried out by, or on behalf of, the agency; those carried out with Federal assistance; those requiring a Federal permit, license, or approval; and those subject to state or local regulation administered pursuant to a delegation, or approval by, a Federal agency [Section 301(7) 16 U.S.C. 470w(7)].

A cultural resource is a broad term that includes prehistoric, historic, architectural, and traditional cultural properties. Those cultural resources that are listed on, or are eligible for inclusion in, the National Register of Historic Places (NRHP) are referred to as historic properties. The criteria for NRHP eligibility are outlined at 36 CFR Part 60. Other applicable Federal cultural resources laws and regulations that could apply include, but are not limited to, the Native American Graves Protection and Repatriation Act (NAGPRA), and the Archaeological Resources Protection Act (ARPA).

Compliance with Section 106 of the NHPA (36 CFR Part 800) follows a series of steps that are designed to identify and consult with interested parties, determine the area of potential effects (APE), determine if historic properties are present within the APE, and assess the effects the undertaking will have on historic properties. Figure 1-2 of the NEPA Environmental Assessment depicts the APE boundaries. Section 106 requires consultation with Indian Tribes concerning the identification of sites of religious or cultural significance and with individuals or groups who are entitled, or requested, to be consulting parties. The regulations at 36 CFR Part 800.5 requires Federal agencies to apply the criteria of adverse effect to the historic properties identified within the APE. The criteria of adverse effect, defined at 36 CFR Part 800.5(a)(1), states that:

> "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association."

The 36 CFR Part 800 regulations include consultation with the State Historic Preservation Officer (SHPO) to provide an opportunity to comment on, and concur with, the Reclamations' determinations. If the undertaking would result in adverse effects to historic properties, these adverse effects must be resolved in consultation with the SHPO and other parties identified during the Section 106 process before the undertaking can proceed to implementation.

National Register Criteria for Evaluation

The criteria for evaluation of NRHP eligibility are outlined at 36 CFR Part 60.4. A district, site, building, structure, or object must generally be at least 50 years old to be eligible for consideration as a historic property. That district, site, building, structure, or object must retain integrity of location, design, setting, materials, workmanship, feelings, and association as well as meet one of the following criteria to demonstrate its significance in American history, architecture, archeology, engineering, and culture. A district, site, building, structure, or object must:

(A) be associated with events that have made a significant contribution to the broad patterns of history; or
(B) be associated with the lives of people significant in our past; or
(C) embody the distinct characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
(D) have yielded, or may be likely to yield, information important in prehistory or history.

A site must have integrity and meet one of the four criteria of eligibility to demonstrate its historic associations in order to convey its significance. A property must be associated with one or more events important in the history or prehistory in order to be considered for listing under Criterion A. Additionally, the specific association of the property, itself, must also be considered significant. Criterion B applies to properties associated with individuals whose specific contributions to the history can be identified and documented. Properties significant for their physical design or construction under Criterion C must have features with characteristics that exemplify such elements as architecture, landscape architecture, engineering, and artwork. Criterion D most commonly applies to properties that have the potential to answer, in whole or in part, important research questions about human history that can only be answered by the actual physical materials of cultural resources. A property eligible under Criterion D must demonstrate the potential to contain information relevant to the prehistory and history (National Register Bulletin 15).

A district, site, building, structure, or object may also be eligible for consideration as a historic property if that property meets the criteria considerations for properties generally less than 50 years old, in addition to possessing integrity and meeting the criteria for evaluation.

State

The project is subject to CEQA which requires public or private projects financed or approved by public agencies to assess their effects on historical resources. CEQA uses the term "historical resources" to include buildings, sites, structures, objects or districts, each of which may have historical, prehistoric, architectural, archaeological, cultural, or scientific importance. CEQA states that if implementation of a project results in significant effects on historical resources, then alternative plans or mitigation measures must be considered; however, only significant historical resources need to be addressed (CCR 15064.5, 15126.4). For the purposes of this CEQA document, a significant impact would occur if project implementation:

Causes a substantial change in the significance of a historical resource
Causes a substantial adverse change in the significance of an archaeological resource
Disturbs any human remains, including those interred outside of formal cemeteries

Therefore, before impacts and mitigation measures can be identified, the significance of historical resources must be determined. CEQA guidelines define three ways that a property may qualify as a historical resource for the purposes of CEQA review:

If the resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR). If the resource is included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the PRC unless the preponderance of evidence demonstrates that it is not historically or culturally significant
The lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record (CCR, Title 14, Division 6, Chapter 3, Section 15064.5(a))

Each of these ways of qualifying as a historical resource for the purpose of CEQA is related to the eligibility criteria for inclusion in the CRHR (PRC 5020.1(k), 5024.1, 5024.1(g)).

A historical resource may be eligible for inclusion in the CRHR if it:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- Is associated with the lives of persons important in our past
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
- Has yielded, or may be likely to yield, information important in prehistory or history Properties that area listed in or eligible for listing in the National Register of Historic Places are considered eligible for listing in the CRHR, and thus are significant historical resources for the purpose of CEQA (PRC Section 5024.1(d)(1)).
- Public Resources Code §5097.5: California Public Resources Code §5097.5 prohibits excavation or removal of any "vertebrate paleontological site…or any other archaeological, paleontological or historical feature, situated on public lands, except with express permission of the public agency having jurisdiction over such lands." Public lands are defined to include lands owned by or under the jurisdiction of the state or any city, county, district, authority or public corporation, or any agency thereof. Section 5097.5 states that any unauthorized disturbance or removal of

archaeological, historical, or paleontological materials or sites located on public lands is a misdemeanor.

- California Health and Safety Code § 7050.5: Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.
- Paleontological Resources: Paleontological resources are the fossilized remains of plants and animals and associated deposits. The Society of Vertebrate Paleontology has identified vertebrate fossils, their taphonomic and associated environmental indicators, and fossiliferous deposits as significant nonrenewable paleontological resources. Botanical and invertebrate fossils and assemblages may also be considered significant resources36. CEQA requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (CEQA Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (CCR Title 14(3) §15126.4 (a)(1)). California Public Resources Code §5097.5 (see above) also applies to paleontological resources.

Local

The existing Tulare County General Plan 2030 Update was adopted in August of 2012. The following General Plan policies regarding cultural resources that are applicable to the survey area are as follows:

- ERM-6: To manage and protect sites of cultural and archaeological importance for the benefit of present and future generations.
    - ERM-6.1: Evaluation of Cultural and Archaeological Resources – The County shall participate in and support efforts to identify its significant cultural and archaeological resources using appropriate State and Federal standards.
    - ERM-6.2: Protection of Resources with Potential State or Federal Designations – The County shall protect cultural and archaeological sites with demonstrated potential for placement on the National Register of Historic Places and/or inclusion in the California State Office of Historic Preservation's California Points of Interest and California Inventory of Historic Resources. Such sites may be of Statewide or local significance and have anthropological, cultural, military, political, architectural, economic, scientific, religious, or other values as determined by a qualified archaeological professional.

[36] Society of Vertebrate Paleontology. Conformable Impact Mitigation Guidelines Committee Policy Statements. http://www.vertpaleo.org/ConformableImpactMitigationGuidelinesCommittee.htm.

- ERM-6.3: When planning any development or alteration of a site with identified cultural or archaeological resources, consideration should be given to ways of protecting the resources. Development can be permitted in these areas only after a site specific investigation has been conducted pursuant to CEQA to define the extent and value of resource, and mitigation measures proposed for any impacts the development may have on the resource.

- ERM-6.4: Mitigation – If preservation of cultural resources is not feasible, every effort shall be made to mitigate impacts, including relocation of structures, adaptive reuse, preservation of facades, and thorough documentation and archival of records.

- ERM-6-6: Historic Structures and Sites – the County shall support public and private efforts to preserve, rehabilitate, and continue the use of historic structures, sites, and parks. Where applicable, preservation efforts shall conform to the current Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.

- ERM-6.7: Cooperation of Property Owners – The County should encourage the cooperation of property owners to treat cultural resources as assets rather than liabilities, and encourage public support for the preservation of these resources.

- ERM-6.8: Solicit Input from Local Native Americans – The County shall continue to solicit input from the local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American activity and/or to sites of cultural importance.

- ERM-6.9: Confidentiality of Archaeological Sites – The County shall, within its power, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal or artifacts.

- ERM-6.10: Grading Cultural Resources Sites – The County shall ensure all grading activities conform to the County's Grading Ordinance and California Code of Regulations, Title 20, §2501 et. Seq.

IMPACT ASSESSMENT

V-a) Would the Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less Than Significant with Mitigation Incorporated. ASM Affiliates conducted an intensive Class III Inventory/Phase I Cultural Resources Survey over 2 of the 3 added areas for recharge of the proposed modified Project. Due to a lack of access, one 160-acre portion of the Project modification for recharge was not surveyed for cultural resources. This parcel may be subject to further CEQA and Section 106 analysis at a later date should the property be acquired for the Project. The purpose of the inventory and survey investigation was to assist with compliance with Section 106 of the National

Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470; 36 CFR Part 800), and the California Environmental Quality Act (CEQA). The investigation was undertaken, specifically, to ensure that no significant adverse effects or impacts to historical resources occur as a result of the construction of this project. The study included:

- A background records search and literature review to determine if any known archaeological sites were present in the project zone and/or whether the area had been previously and systematically studied by archaeologists;
- A search of the NAHC *Sacred Lands File* to determine if any traditional cultural places or cultural landscapes have been identified within the area;
- An on-foot, intensive inventory of the study area to identify and record previously undiscovered cultural resources and to examine known sites; and
- A preliminary assessment of any such resources found within the subject property.

The records search at the California State University, Bakersfield, Southern San Joaquin Valley Archaeological Information Center (AIC) indicated that seven previous archaeological surveys had been completed that covered portions of the study area (See Appendix E, Class III Inventory/Phase I Survey). No historic or prehistoric cultural resources were identified within the study area. The NAHC Sacred Lands File did not indicate the presence of any cultural places within the project area

The Class III inventory/Phase I survey fieldwork for the Modified Project area of consideration/study area was conducted in October and November 2016. The Empire property was not analyzed during the field survey, due to lack of access. If the District decides to pursue recharge basin development on this property, a field survey would be required prior to construction. The study area was examined with the field crew walking parallel transects along the pipeline route and recharge basin area spaced at 15 meter intervals, in order to identify surface artifacts, archaeological indicators (e.g., shellfish or animal bone), and/or archaeological deposits (e.g., organically enriched midden soil); tabulation and recording of surface diagnostic artifacts; site sketch mapping; preliminary evaluation of site integrity; and site recording, following the California Office of Historic Preservation Instructions for Recording Historic Resources, using DPR 523 forms. A buffer 50 feet wide was included on each side of the pipeline. Because the route primarily follows existing paved and unpaved roads, this resulted in survey on both sides of these roads.

The APE consists the area of potential ground surface disturbance resulting from the construction of these features and improvements, including access and staging areas. The vertical APE, based on maximum depth of proposed grading in the recharge basin, is 6-feet. The study area for the initial (2014 – 2015) cultural resources inventory consisted of the project APE and buffers, with the total study area about 724-acres in size. The area of consideration for the (2016) Modified Project involved three 160-acres properties resulting in a 480-acres total study area.

Special attention was paid to rodent burrow back dirt piles, in the hope of identifying sub-surface soil conditions that might be indicative of archaeological features or remains. No cultural resources were collected during the survey.

Three historical cultural resources were identified and documented during the survey:

- Portions of Deer Creek,
- Friant-Kern Canal, and

- Pixley-1 Bridge.

After documentation and evaluation of Deer Creek, the Friant-Kern Canal, and the Pixley-1 Bridge, and careful consideration of their ability to reflect the historic contexts with which they are associated, the Friant-Kern Canal is recommended individually eligible for the NRHP and the CRHR under Criteria A/1 and C/3. The Pixley-1 Bridge and Deer Creek are not recommended as eligible either individually or as contributors to a potential historic district for the NRHP nor the CRHR under any of the criteria. As such, only the Friant-Kern Canal qualifies as a CEQA historical resource pursuant to Section 15064.5 as well as a historic resource under NHPA.

No significant visual impacts were identified as a result of the evaluation of indirect impacts on the Friant-Kern Canal, the only built-environment resource within the Project APE recommended eligible for listing in the NRHP/CRHR or as a CEQA historical resource. The canal will not be subject to a visual intrusion by the project. Therefore, no intrusion would affect the qualities or values that would qualify the Friant-Kern Canal for listing on the NRHP and would not be an adverse effect under 36 CFR 800 or a significant impact under CEQA.

Mitigation Measures:

During the course of all ground disturbing activities of construction the following mitigation measure shall be implemented:

MM CUL-1: In the unlikely event that unanticipated buried archaeological deposits are encountered during construction, work in the immediate vicinity of the discovery must cease until the find can be evaluated by Reclamation and managed pursuant to the requirements of 36 CFR 800.13 and other applicable Federal laws and regulations. If human remains are inadvertently discovered, Reclamation will comply fully with Native American Graves Protection and Repatriation Act of 1990 NAGPRA as outlined at 43 CFR Part 10, and other Federal laws and regulations as appropriate.

V-b) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less Than Significant with Mitigation Incorporated. No prehistoric archaeological resources were found within the survey area. Given the disturbances from modern agricultural activities and the lack of previously identified resources, the study area is considered to be low sensitivity for archaeological sites within the agricultural disturbance layer of the soil. However, construction activities related to the subsurface basin are likely to surpass historical disturbance levels. With implementation of the Mitigation Measure **MM CUL-1** any impacts will be less than significant.

V-c) Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact with Mitigation Incorporated. An archival records search was conducted at the AIC, by AIC staff members to determine: (i) if prehistoric or historical archaeological sites had previously been recorded within the study area; (ii) if the project area had been systematically surveyed by archaeologists prior to the

initiation of this field study; and/or (iii) whether the region of the field project was known to contain archaeological sites and to thereby be archaeologically sensitive. Additionally, a search of the NAHC Sacred Lands File was conducted in order to ascertain whether traditional cultural places or cultural landscapes had been identified within the APE. The records search at the AIC indicated that seven previous archaeological surveys had been completed that covered portions of the study area. No historic or prehistoric cultural resources were identified within the study area. The NAHC Sacred Lands File did not indicate the presence of any cultural places within the project area[37]. While no records exist, there is a potential for previously unknown resources to be discovered during the construction of the subsurface basins. With implementation of the Mitigation Measure MM CUL-1 any impacts will be less than significant.

V-d) Would the Project disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant Impact. No formal cemeteries or other places of human internment are known to exist within the survey area; however, in accordance with State Health and Safety Code Section 7050.5 and Public Resource Code Section 5097.98, if human remains are unearthed during project construction, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition of such remains. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC). The NAHC would then identify the person(s) thought to be the most likely descendent of the deceased Native American, who will then help determine what course of action should be taken in dealing with the remains. As such, any impacts will be less than significant.

[37] Draft Class III Inventory/Phase I Survey, Pixley Groundwater Banking Project, Pixley, Tulare County, California

VI. GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☒	☐

BASELINE CONDITIONS

Appendix G contains a technical study entitled *Geology and Soils Impacts Analysis.* This study was prepared by Amec Foster Wheeler Environment & Infrastructure, Inc. to evaluate potential effects to geologic and soil resources from construction and operation of the Project. Unless noted otherwise by different footnoted sources, information from that report is utilized below in the description of baseline conditions (environmental and regulatory), project-level and cumulative impact analysis and recommended Mitigation Measures.

Environmental Setting

The Project is located in southern Tulare County, within California's Great Valley Geomorphic Province, or Central Valley, a large, elongate, northwest-trending trough extending more than 430 miles. The Sacramento Valley makes up the northern third and the San Joaquin Valley makes up the southern two-thirds of the geomorphic province. Both valleys are watered by large rivers flowing west from the Sierra Nevada Range, with smaller tributaries flowing east from the Coast Ranges. Most of the surface of the Great Valley is covered by several thousand feet of marine and non-marine sedimentary rock derived from Mesozoic through recent age erosion of the Coast Ranges and Sierra Nevada Mountains. The Project area is underlain by part of the Great Valley Sequence, primarily younger unconsolidated Quaternary age (present day to 1.6 million years ago) alluvial fan deposits derived from the Sierra Nevada. The sedimentary formations are steeply upturned along the western margin due to the uplifted Sierra Nevada Range[38].

Land use within the Central Valley is dominated by agricultural use. The Project is located in a low-density, scattered, rural residential development area, where vineyards, pistachios, almonds, alfalfa, and cotton are grown. The alluvial fan deposits that comprise the soils of the Project area create a relatively flat (about 0.3 percent slope) surface. This nearly flat surface extends throughout the floor of the Central Valley. The soil types within the Project area share moderate to well-drained characteristics, with the exception of the Centerville Clay, which is approximately 4 percent of the Project area.

Topography

The Project area is characterized by flat gently sloped topography bounded 15 miles to the east by the western slope of the Sierra Nevada foothills and to the west by the San Joaquin Valley. The Project area consists predominantly of graded farmland. Elevation ranges from 280 ± feet above mean sea level on the west side to 350 ± feet above mean sea level on the east. The primary slope across the area is approximately 0.3 percent, dipping in a westward direction.

Faulting and Seismicity

The Central Valley is an area of relatively low tectonic activity bordered by mountain ranges on either side.

There are no known earthquake faults within the project area. The nearest active faults identified by the Alquist-Priolo Earthquake Fault Zone map are an unnamed fault located 6.7 miles east/northeast of the Project and the Pond-Poso Creek Fault located 15.5 miles south/southwest of the Project area.

The Pond-Poso Creek fault consists of a 2/3 mile-wide zone of northwesterly trending normal faults, downthrown to the southwest and dipping approximately 50 to 70 degrees. Visible fault scarps suggest that a 2-mile segment of the fault is active. Subsurface data indicate that repeated movement has occurred along this fault since the Eocene and possibly the Paleocene. An upper limit to historic offset (as of 1974) was established with a fault trench. At a depth of approximately 10 feet from ground surface, 9 inches of vertical offset was observed (LADWP, 1974). From borehole data, approximately 50 feet of vertical offset is interpreted at a depth of 875 feet (Holzer, 1980). The Los Angeles Department of Water and Power identified several small epicenters, none greater than 4.0

[38] Harden, D.R. 1998,Californina Geology, Prentice Hall, 479 pages

magnitude, near the Pond-Poso Creek Fault. Groundwater withdrawal and subsequent ground subsidence have been proposed as the cause of historical offset (Holzer, 1980).

The Alquist-Priolo Earthquake Fault Zone map identifies three other faults, the Kern Front, New Hope, and Premier faults, within 30 miles of the Project area. The Kern Front, New Hope, and Premier faults have been identified as active, northwest striking, westerly dipping, normal faults that cut Quaternary deposits. They are located between 24 and 30 miles southeast of the Project area along the western flank of the Sierra Nevada foothills. None of these faults are considered major faults, and none show evidence of pre-historic Holocene displacement (Smith, 1983). It has been determined that reactivation of these faults are a result of fluid withdrawal from the Kern Front oil field (Smith, 1983).

Additionally, the San Andreas (approximately 53 miles southwest from Project area), Owens Valley (approximately 70 miles east from Project area), White Mountains fault zone (approximately 80 miles east from Project area), Ortigalita, Nunez (approximately 110 miles northeast from Project area), and White Wolf (approximately 75 miles south from Project area) faults are considered active. The portion of the San Andreas Fault closest to the Project area was last active in 1966 and has produced magnitude earthquakes varying from 6.0 to 7.9. In 1872, the Owens Valley fault ruptured the ground surface for about 60 miles producing a magnitude 7.4 earthquake. The White Mountains fault zone was last active in 1986 and produced a magnitude 6.4 earthquake. The Nunez fault was last active in 1983 and produced a magnitude 6.4 earthquake event. The White Wolf fault produced a magnitude 7.3 earthquake in 1952 (Jennings and Saucedo, 1999). The Ortigalita fault historically ruptures by fault creep, meaning that it migrates continually at a slower rate (USGS, 2007). There is no known damage in the Project area from these earthquakes.

Ground shaking is the primary seismic hazard in the valley portion of Tulare County, including the Project area. Earthquake damage caused by ground shaking is determined by the magnitude of an earthquake, the depth of focus, the distance from the fault, the intensity and duration of shaking, the local groundwater and soil conditions, topography, and the design and quality of materials and workmanship in construction.

The California Integrated Seismic Network (CISN) is a partnership among Federal, state, and university agencies involved in California earthquake monitoring. CISN publishes maps and data that track the frequency and magnitude of ground shaking events throughout California. The peak ground acceleration, which is the measure of how hard the earth shakes in a given geographic area, has been identified by the California Geological Survey for the Project area to have a 10 to 20 percent probability of exceeding 6 percent of the acceleration of gravity in 50 years (USGS, 2008). Tulare County is characterized as Severity Zone “Nil” and “Low” for ground shaking events (Tulare County, 2012).

Soils

Permeable soils are essential in recharge basins to allow percolation from surface water into groundwater. Locations with a high capacity for recharge, based on the saturated hydraulic conductivity of the soils, provide suitable conditions for significant recharge. The Akers-Akers saline Sodic complex soil that comprises 65.9 percent of the proposed recharge basins possess moderately slow to rapid saturated hydraulic conductivity, while the Hanford sandy loam that is found in 31.5 percent of the proposed recharge basins possesses moderately rapid to very rapid saturated hydraulic conductivity. The soils of the in-lieu area possess saturated hydraulic conductivity values

that range from very slow to very rapid, with the majority of the area (69 percent) being characterized by moderately slow to very rapid hydraulic conductivity. Saturated hydraulic conductivity values for all soils found within the Project area are summarized in Table 1 of Appendix G, and a distribution of the soil types is shown on Figure 2 of Appendix G.

Expansive soils are characterized by the ability to significantly swell or shrink as a result of variation in soil moisture content. Soil moisture content can vary due to circumstance, including, perched water, agricultural irrigation, and rainfall. Hazards to the Project associated with expansive soils include the potential for damage to levees, wells, and pipeline connections constructed on soils that can significantly expand or contract with changes in soil water content. The Project area contains three soil types that are considered to have low "shrink-swell" potential, five soil types considered to have moderate shrink-swell potential, one soil type considered to have high shrink-swell potential, and one soil type that is too variable to categorize. The majority of the soil types in the Project area (95 percent) are considered to have moderate to low shrink-swell potential. The majority (97 percent) of recharge basins have soils types that are considered to have low shrink-swell potential. Soils and their shrink-swell potential is summarized in Table 1 of Appendix G.

The Centerville clay, located in the northeastern portion of the in-lieu area, and on an approximate 1,750 foot section of Avenue 80 where the proposed main trunk pipeline is proposed to be constructed, is considered to have high shrink-swell potential (Figure 2, Appendix G). Expansion and contraction of soils with high shrink-swell characteristics, including the Centerville clay, could damage buildings, foundations, and infrastructure including pipelines due to settlement and uplift.

Regulatory Setting

Federal

Historic Sites Act of 1935
This Act became law on August 21, 1935 (49 Stat. 666; 16 U.S.C. 461-467) and has been amended eight times. This Act establishes as a national policy to preserve for public use historic sites, buildings and objects, including geologic formations.

National Earthquake Hazards Reduction Program
The National Earthquake Hazards Reduction Program (NEHRP), which was first authorized by Congress in 1977, coordinates the earthquake-related activities of the Federal Government. The goal of NEHRP is to mitigate earthquake losses in the United States through basic and directed research and implementation activities in the fields of earthquake science and engineering. Under NEHRP, FEMA is responsible for developing effective earthquake risk reduction tools and promoting their implementation, as well as supporting the development of disaster-resistant building codes and standards. FEMA's NEHRP activities are led by the FEMA Headquarters (HQ), Federal Insurance and Mitigation Administration, Risk Reduction Division, Building Science Branch, in strong partnership with other FEMA HQ Directorates, and in coordination with the FEMA Regions, the States, the earthquake consortia, and other public and private partners.

State

California Alquist-Priolo Earthquake Fault Zoning Act
The Alquist-Priolo Earthquake Fault Zoning Act (originally enacted in 1972 and renamed in 1994) is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The

statute prohibits the location of most types of structures intended for human occupancy across the traces of active faults and regulates construction in the corridors along active faults.

California Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Earthquake Fault Zoning Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including ground shaking, liquefaction, and seismically induced landslides. The state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones.

Uniform Building Code

The California Code of Regulations (CCR) Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. The California Building Code incorporates by reference the Uniform Building Code with necessary California amendments. The Uniform Building Code is a widely adopted model building code in the United States published by the International Conference of Building Officials. About one-third of the text within the California Building Code has been tailored for California earthquake conditions. In addition, this project is being evaluated pursuant to CEQA.

- *Regulation VIII (Fugitive Dust Prohibitions). Regulation VIII (Rules 8011-8081).* This regulation is a series of rules designed to reduce particulate emissions generated by human activity, including construction and demolition activities, carryout and trackout, paved and unpaved roads, bulk material handling and storage, unpaved vehicle/traffic areas, open space areas, etc. If a non-residential area is 5.0 or more acres in area, a Dust Control Plan must be submitted as specified in Section 6.3.1 of Rule 8021. Additional requirements may apply, depending on total area of disturbance.

Local

Tulare County General Plan Policies

- ERM-7: To preserve and protect soil resources in the County for agricultural and timber productivity and protect public health and safety.
- ERM-7.2: Soil Productivity – The County shall encourage landowners to participate in programs that reduce soil erosion and increase soil productivity. To this end, the County shall promote coordination between the Natural Resources Conservation Service, Resource Conservation Districts, UC Cooperative Extension, and other similar agencies and organizations.
- HS-2: To reduce the risk to like and property and governmental costs from seismic and geologic hazards.
- HS-2.1: Continued Evaluation of Earthquake Risks – The County shall continue to evaluate areas to determine levels of earthquake risk.
- HS-2.2: Landslide Areas – The County shall not allow development on existing unconsolidated landslide debris.

- HS2.4: Structure Siting – The County shall permit development on soils sensitive to seismic activity only after adequate site analysis, including appropriate siting, design of structure, and foundation integrity.
- HS-2.7: Subsidence – The County shall confirm that development is not located in any known areas of active subsidence.

IMPACT ASSESSMENT

VI-a) Would the Project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. Seismically induced ground failures occur when ground movements are substantial enough to result in severe distress or infrastructure failure. Ground failure includes surface rupture of faults, sediment-stability failure due to soil liquefaction, lateral spreading, seismically induced landslides, and differential settlement. Fault rupture occurs when fault displacement extends upward to the ground surface creating a visible offset. Ruptures may occur suddenly with earthquake events, or slowly over time due to fault creep. Fault ruptures have potential to damage structures, both above and below ground surface, and pose a threat of injury that could result in the loss of life. Fault ruptures are likely to occur along known faults. Surface fault rupture within the Project area is highly unlikely, as no faults have been identified (see Section 4.1 of Appendix G). The Project would not substantially increase human or environmental exposure to risk of loss, injury, or death as a result of fault ruptures, therefore, the impact of fault ruptures is considered less than significant.

VI-a-ii) Strong seismic ground shaking?

Less Than Significant Impact. The Project is expected to experience minimal effects from earthquake ground shaking due to the Project's distance of greater than 50 miles from any major fault, and the lack of any known faulting in the Project area (see Section 4.1). The Project would not substantially increase human or environmental exposure to risk of loss, injury, or death as a result of ground shaking, therefore, the impact of ground shaking is considered less than significant.

VI-a-iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction is a process by which water-saturated sediments briefly lose strength and behave as a viscous fluid rather than a solid. Soils with poor drainage characteristics and soils where groundwater levels are at or near (30 feet) ground surface are at the greatest risk of liquefaction. Liquefaction-induced lateral spreading is a lateral movement of gradually sloping ground as a result of liquefaction in near-surface soils during an earthquake.

Liquefaction-induced lateral spreading is a lateral movement of gradually sloping ground as a result of liquefaction in near-surface soils during an earthquake. The application of surface

water during recharge conditions will raise groundwater elevations and increase soil saturation at or near ground surface. However, as described above in Section 3.0, soils within the Project area are moderately well, to well-drained, and groundwater levels average approximately 300 feet below ground surface. The ground surface at the project area is relatively flat exhibiting average slopes of less than 1 percent (see Section 3.0).

Settlement can occur in loose unsaturated sandy soils during periods of strong seismic ground shaking. Settlement of sufficient magnitude to cause significant structural damage is normally associated with rapidly deposited alluvial soils or improperly founded or poorly compacted fill. These areas are known to undergo extensive settling with the addition of irrigation water. The soils of the Project area are alluvial fan deposits that have been slowly deposited over the last several 100,000 years (see Section 2.0). Therefore, the Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving ground failure or liquefaction. The impact of seismic related ground failure including liquefaction at the Project area is considered less than significant.

VI-a-iv) Landslides?

Less Than Significant Impact. Seismically induced landslides can occur in hillside areas and along creeks. The likelihood of seismically induced landslides in the Project area is highly unlikely due to the relatively low chance of significant ground shaking and nearly flat ground surface. The Project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides, therefore, the impact of landslides is considered less than significant (see Sections 3.0 and 4.1).

***Mitigation Measure*:** No Mitigation is required

VI-b) Would the Project result in substantial soil erosion or the loss of topsoil?

Less Than Significant with Mitigation Incorporated. Erosion occurs as bare soils are worn away and transported to another area when exposed to water or wind. Construction of the recharge basins would require minor grading and compaction of soils on the relatively flat ground surface. Surface erosion and loss of topsoil can follow disturbances caused by grading, which could loosen soil and activate or hasten the loss of soils. Erosion and sediment control measures, if properly prescribed, implemented, and maintained, including a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the Clean Water Act, are expected to reduce erosion rates during and after construction. By implementing the appropriate requirements of a SWPPP, substantial soil erosion or the loss of topsoil is considered less than significant.

Mitigation Measures:

MM GEO-1: The District shall complete a Storm Water Pollution Prevention Plan (SWPPP) prior to any ground moving activities. As part of the SWPPP, the Authority will be required to incorporate any of the following Best Management Practices (BMPs), as deemed appropriate for the Project by the design engineer, Qualified SWPPP Practitioner (QSP) and the SWRCB, for the Project's construction-specific needs to further protect the topsoil:

- *Grading and Preservation of Existing Vegetation*

Existing vegetation shall be preserved to the maximum extent practicable. Clearing and grubbing shall only be performed in areas where new foundations, utilities, or internal access drives are planned.

- *Soil Compaction*
  All soil compaction and subgrade preparation specifications will be per the site-specific recommendations of a California-licensed Geotechnical Engineer, and will be based on his field exploration prior to construction. Typically, trench backfill and subgrade compaction consists of either hand-held vibratory, rolled-drum equipment, or tracked equipment. Compaction would be 90 percent of maximum density as calculated by ASTM D1557 Modified Proctor.

- *Hydroseeding*
  Disturbed areas will be seeded upon completion of construction in order to protect exposed soils from erosion by wind and water. Upon completion of an earth disturbance activity, disturbed areas shall be covered with a minimum uniform 70 percent perennial vegetative cover, with a density capable of resisting accelerated erosion and sedimentation. The vegetative cover will also be chosen to be appropriate for sheep grazing activities in the event that continued farming concept is chosen. *(Note: Sheep grazing is not proposed.)*

- *Straw Mulch*
  Straw mulch will be used to temporarily stabilize disturbed areas until soil can be prepared for revegetation. Straw mulch will be anchored immediately after application to prevent being windblown. Straw or hay will be "crimped" into the soils by running tracked machinery across the surface.

- *Non-Vegetative Stabilization*
  A non-combustible surface will surround the project site to function as a fire break as well as provide a stabilized surface for post-construction access. Non-vegetative stabilization methods, such as gravel mulch, will be used to provide stabilized access to construction areas.

- *Stabilized Construction Entrance/Exit*
  A stabilized construction entrance/exit will be maintained at each construction site entrance/exit to reduce tracking of sediment as a result of construction traffic. The entrance/exit will be constructed per the detail included with the Erosion and Sediment Control Drawings (ESCDs).

- *Stabilized Construction Roadway*
  The construction access route into the site will also be maintained to prevent erosion and to control tracking of mud and soil material onto adjacent roads. The ESCDs will specify the construction access locations. A regular maintenance program will be conducted to replace sediment-clogged stabilization material with new stabilization material as required.

- *Entrance/Outlet Tire Wash*
  Tire wash racks will be installed if soil and/or traffic conditions on-site require washing the construction vehicle wheels prior to exiting the site to avoid excessive tracking of mud onto the roadway.

- *Street Sweeping and Vacuuming*
  Road sweeping and vacuuming will occur as necessary during construction to keep street surfaces clear of soil and debris. Washing sediment onto streets will not occur.

- *Dust Control*
  During windy conditions (forecast or actual wind conditions of approximately 25 mph or greater), dust control will be applied to disturbed areas, including construction access roads, to adequately control wind erosion. Water will be applied to disturbed soil areas of the project site

using water trucks as required by weather conditions to control dust. Water application rates will be minimized as necessary to prevent runoff and pooling from excess water.

VI-c) Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. Ground failures including landslide, lateral spreading, subsidence, and liquefaction occur in geologic units where strong ground shaking may occur. The relatively seismically stable setting of the Project area, the depth to groundwater of approximately 300 feet, the relatively flat ground surface, and the moderately well to well-drained characteristics of the soil create an environment where ground failure is unlikely to occur (see Section 4.1). The Project will not be located on a geologic unit or soil that is unstable or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse (Figure 2 of Appendix G). Therefore, the impact is considered less than significant.

***Mitigation Measure*:** No Mitigation is required.

VI -d) Would the Project be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code creating substantial risks to life or property?

Less Than Significant Impact. The Centerville clay, a soil type with high shrink-swell potential, is present in a small portion (3.8 percent of the Project area) of the in-lieu service area (Figure 2 of Appendix G). Special engineering considerations should be taken in the construction of any structure or pipeline in the northeastern portion of the proposed in-lieu area as shown in referenced Figure 2 of Appendix G. A small portion of the in-lieu service area will be located on an expansive soil. However, because expansive soils at the Project would not create a substantial risk to humans and the use of proper construction and engineering techniques will eliminate the possibility of damage to structures, the impact of expansive soils is considered less than significant.

Mitigation Measure: No Mitigation is required**.**

VI-e) Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

Less Than Significant Impact. The approximately 1,012-acres of recharge basins would be incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems during operation of the Project. The high permeability of the soils surrounding the Project site and located a distance of 50 feet or greater from the recharge basins, would remain capable of adequately supporting the use of septic tanks or alternative waste water disposal systems during construction and operation of the Project. This impact is less than significant.

Mitigation Measure: No Mitigation is required.

VII GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

BASELINE CONDITIONS

Appendix B contains a technical study entitled Air Quality and Greenhouse Gas Impact Analysis. This study was prepared by Ambient Air Quality and Noise Consulting to evaluate potential effects to air quality and greenhouse gas from construction and operation of the Project. Information from that report is utilized below in the description of baseline conditions (environmental and regulatory), project-level and cumulative impact analysis and recommended Mitigation Measures.

Environmental Setting

The earth's climate has been warming for the past century. It is believed that this warming trend is related to the release of certain gases into the atmosphere. Greenhouse gases (GHG) absorb infrared energy that would otherwise escape from the earth. As the infrared energy is absorbed, the air surrounding the earth is heated. An overall warming trend has been recorded since the late 19th century, with the most rapid warming occurring over the past two decades. The 10 warmest years of the last century all occurred within the last 15 years. It appears that the decade of the 1990s was the warmest in human history [NOAA 2010]. Human activities have been attributed to an increase in the atmospheric abundance of greenhouse gases. The following is a brief description of the most commonly recognized GHGs.

Greenhouse Gases

Commonly identified GHG emissions and sources include the following:

- *Carbon dioxide (CO_2)* is an odorless, colorless natural greenhouse gas. CO_2 is emitted from natural and anthropogenic sources. Natural sources include the following: decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic out gassing. Anthropogenic sources are from burning coal, oil, natural gas, and wood.

- *Methane (CH_4)* is a flammable greenhouse gas. A natural source of methane is from the anaerobic decay of organic matter. Geological deposits, known as natural gas fields, also contain methane, which is extracted for fuel. Other sources are from landfills, fermentation of manure, and ruminants such as cattle.

- *Nitrous oxide (N_20)*, also known as laughing gas, is a colorless greenhouse gas. Nitrous oxide is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (fossil fuel-fired power plants, nylon production, nitric acid production, and vehicle emissions) also contribute to its atmospheric load.

- *Water vapor* is the most abundant, important, and variable greenhouse gas. It is not considered a pollutant; in the atmosphere, it maintains a climate necessary for life.

- *Ozone* is known as a photochemical pollutant and is a greenhouse gas; however, unlike other greenhouse gases, ozone in the troposphere is relatively short-lived and, therefore, is not global in nature. Ozone is not emitted directly into the atmosphere but is formed by a complex series of chemical reactions between volatile organic compounds, nitrogen oxides, and sunlight.

- *Aerosols* are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat and can cool the atmosphere by reflecting light.

- *Hydrofluorocarbons (HFCs)* are synthetic chemicals that are used as a substitute for CFCs. Of all the greenhouse gases, HFCs are one of three groups (the other two are perfluorocarbons and sulfur hexafluoride) with the highest global warming potential. The global warming potential is the potential of a gas to contribute to global warming; it is based on a reference scale with CO_2 at one. HFCs are human-made for applications such as air conditioners and refrigerants.

- *Chlorofluorocarbons (CFCs)* are nontoxic, nonflammable, insoluble, and chemically unreactive in the troposphere (the level of air at the earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. CFCs destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol in 1987. The project would not emit CFCs.

- *Perfluorocarbons (PFCs)* have stable molecular structures and do not break down through the chemical processes in the lower atmosphere; therefore, PFCs have long atmospheric lifetimes, between 10,000 and 50,000 years. The two main sources of PFCs are primary aluminum production and semiconductor manufacture. The project would not emit PFCs.

- *Sulfur hexafluoride (SF6)* is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest global warming potential of any gas evaluated. Sulfur hexafluoride is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection. The project would not emit SF6.

Effects of Climate Change

There are uncertainties as to exactly what the climate changes will be in various local areas of the earth, and what the effects of clouds will be in determining the rate at which the mean temperature will increase. There are also uncertainties associated with the magnitude and timing of other consequences of a warmer planet: sea level rise, spread of certain diseases out of their usual geographic range, the effect on agricultural production, water supply, sustainability of ecosystems,

increased strength and frequency of storms, extreme heat events, air pollution episodes, and the consequence of these effects on the economy.

Emissions of GHGs contributing to global climate change are largely attributable to human activities associated with industrial/manufacturing, utility, transportation, residential, and agricultural sectors. About three-quarters of human emissions of CO_2 to the global atmosphere during the past 20 years are due to fossil fuel burning. Atmospheric concentrations of CO_2, CH_4, and N_2O have increased 31 percent, 151 percent, and 17 percent respectively since the year 1750 (CEC 2008). GHG emissions are typically expressed in carbon dioxide-equivalents (CO_2e), based on the GHG's Global Warming Potential (GWP). The GWP is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. For example, one ton of CH_4 has the same contribution to the greenhouse effect as approximately 21 tons of CO_2. Therefore, CH_4 is a much more potent GHG than CO_2.

Regulatory Setting

Federal

U.S. Environmental Protection Agency (EPA)

Although climate change and GHG reduction is a concern at the Federal level; currently there are no regulations or legislation that have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the U.S. EPA nor the Federal Highway Administration (FHWA) has promulgated explicit guidance or methodology to conduct project-level GHG analysis. However, the FHWA recommends that climate change impacts and strategies to reduce GHG emissions should considered and integrated throughout the transportation decision-making process. Such strategies include implementation of improved transportation system efficiency, use of cleaner fuels and cleaner vehicles, and a reduction in the growth of vehicle hours travelled. Climate change and its associated effects are being addressed through various efforts at the Federal level to improve fuel economy and energy efficiency, such as the "National Clean Car Program" and EO 13514 - Federal Leadership in Environmental, Energy and Economic Performance (Caltrans 2013).

Executive Order 13514

Executive Order 13514 is focused on reducing greenhouse gases internally in Federal agency missions, programs and operations, but also direct Federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change (Caltrans 2013).

On April 2, 2007, in Massachusetts v. EPA, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision (Caltrans 2013).

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act (Caltrans 2013):

- Endangerment Finding: The Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide (CO_2), methane (CH_4), nitrous oxide

(N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations.

- Cause or Contribute Finding: The Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's Proposed Greenhouse Gas Emission Standards for Light-Duty Vehicles, which was published on September 15, 2009. On May 7, 2010 the final Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards was published in the Federal Register.

U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a Presidential Memorandum on May 21, 2010.

The final combined U.S. EPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile, (the equivalent to 35.5 miles per gallon if the automobile industry were to meet this CO_2 level solely through fuel economy improvements). Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016). On November 16, 2011, U.S. EPA and NHTSA issued their joint proposal to extend this national program of coordinated greenhouse gas and fuel economy standards to model years 2017 through 2025 passenger vehicles (Caltrans 2013).

State

Assembly Bill 1493

Assembly Bill (AB) 1493 (Pavley) of 2002 (Health and Safety Code Sections 42823 and 43018.5) requires the California Air Resources Board (ARB) to develop and adopt the nation's first GHG emission standards for automobiles. These standards are also known as Pavley I. The California Legislature declared in AB 1493 that global warming is a matter of increasing concern for public health and the environment. It cites several risks that California faces from climate change, including a reduction in the state's water supply, an increase in air pollution caused by higher temperatures, harm to agriculture, an increase in wildfires, damage to the coastline, and economic losses caused by higher food, water, energy, and insurance prices. The bill also states that technological solutions to reduce GHG emissions would stimulate California's economy and provide jobs. In 2004, the State of California submitted a request for a waiver from Federal clean air regulations, as the State is authorized to do under the Clean Air Act, to allow the State to require reduced tailpipe emissions of CO_2. In late 2007, the USEPA denied California's waiver request and declined to promulgate adequate Federal regulations limiting GHG emissions. In early 2008, the State brought suit against the USEPA related to this denial.

In January 2009, President Obama instructed the USEPA to reconsider the Bush Administration's denial of California's and 13 other states' requests to implement global warming pollution standards for cars and trucks. In June 2009, the USEPA granted California's waiver request, enabling the State to enforce its GHG emissions standards for new motor vehicles beginning with the current model year.

Also in 2009, President Obama announced a national policy aimed at both increasing fuel economy and reducing GHG pollution for all new cars and trucks sold in the US. The new standards would cover model years 2012 to 2016 and would raise passenger vehicle fuel economy to a fleet average of 35.5 miles per gallon by 2016. When the national program takes effect, California has committed to allowing automakers who show compliance with the national program to also be deemed in compliance with state requirements. California is committed to further strengthening these standards beginning in 2017 to obtain a 45 percent GHG reduction from the 2020 model year vehicles.

Executive Order No. S-3-05

Executive Order No. S-3-05 was signed on June 1, 2005, by former Governor Arnold Schwarzenegger. The goal of this EO is to reduce California's GHG emissions to: 1) year 2000 levels by 2010, 2) year 1990 levels by the 2020, and 3) 80 percent below the year 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Executive Order S-6-06

Executive Order S-6-06 (State of California), signed on April 25, 2006, established two primary goals related to the use of biofuels within California, including: (1) by 2010, 20 percent of its biofuels need to be produced within California; increasing to 40 percent by 2020 and 75 percent by 2050; and (2) by 2010, 20 percent of the renewable electricity should be generated from biomass resources within the state, maintaining this level through 2020.

Assembly Bill 32 - California Global Warming Solutions Act of 2006

AB 32 (Health and Safety Code Sections 38500, 38501, 28510, 38530, 38550, 38560, 38561–38565, 38570, 38571, 38574, 38580, 38590, 38592–38599) requires that statewide GHG emissions be reduced to 1990 levels by the year 2020. The gases that are regulated by AB 32 include CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride. The reduction to 1990 levels will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs ARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then ARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that ARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap, institute a schedule to meet the emissions cap, and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

Climate Change Scoping Plan

In October 2008, ARB published its Climate Change Proposed Scoping Plan, which is the State's plan to achieve GHG reductions in California required by AB 32. The Scoping Plan contains the main strategies California will implement to achieve reduction of 169 million metric tons (MMT) of CO_2e, or approximately 30 percent from the state's projected 2020 emissions level of 596 $MMTCO_2e$ under a business-as-usual scenario (this is a reduction of 42 $MMTCO_2e$, or almost 10 percent, from 2002–2004 average emissions). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. The largest proposed GHG reduction recommendations are from improving emissions standards for light-duty vehicles (estimated reductions of 31.7 $MMTCO_2e$), implementation of the Low Carbon Fuel Standard (15.0 $MMTCO_2e$) program, energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 $MMTCO_2e$), and a renewable portfolio standard for electricity production (21.3 $MMTCO_2e$). The Scoping Plan identifies the local equivalent of AB 32 targets as a 15 percent reduction below baseline GHG emissions level, with baseline interpreted as GHG emissions levels between 2003 and 2008.

A key component of the Scoping Plan is the Renewable Portfolio Standard, which is intended to increase the percentage of renewable energy sources in California's electricity mix to 33 percent by year 2020, resulting in a reduction of 21.3 $MMTCO_2e$. Sources of renewable energy include, but are not limited to, biomass, wind, solar, geothermal, hydroelectric, and anaerobic digestion. Increasing the use of renewable energy sources will decrease California's reliance on fossil fuels, thus reducing GHG emissions.

The Scoping Plan states that land use planning and urban growth decisions will play important roles in the state's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions. (Meanwhile, ARB is also developing an additional protocol for community emissions.) ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emissions sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects approximately 5.0 $MMTCO_2e$ will be achieved associated with implementation of Senate Bill 375, which is discussed further below. The Climate Change Proposed Scoping Plan was approved by ARB on December 11, 2008.

The First Update of the Scoping Plan was approved by the ARB on May 22, 2014, which looked past 2020 to set mid-term goals (2030-2035) on the road to reaching the 2050 goals. ARB's Key Action for the Waste Sector focused on eliminating organics from the landfill starting in 2016 and financing the in-state infrastructure development of composting and anaerobic digestion facilities. ARB's Key Action for Short-lived Climate Pollutants such as methane is to develop a comprehensive strategy by 2015 which will focus on methane generated at landfills from the disposal of organic wastes.

Senate Bill 97 - CEQA: Greenhouse Gas Emissions

Senate Bill 97, signed in August 2007, acknowledges that climate change is an important environmental issue that requires analysis under CEQA. This bill directs the Governor's Office of Planning and Research to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, by July 1, 2009. The Resources Agency is required to certify or adopt those guidelines by January 1, 2010. Amendments to the CEQA guidelines took effect March 18, 2010. The revisions include a new section (Sec. 15064.4) that specifically addresses the potential significance of GHG emissions. Section 15064.4 calls for a "good-faith effort" to "describe, calculate or estimate" GHG emissions; Section 15064.4 further states that the analysis of the significance of any GHG impacts should include consideration of the extent to which the project would increase or reduce GHG emissions; exceed a locally applicable threshold of significance; and comply with "regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions." The guidelines also state that a project may be found to have a less-than-significant impact on GHG emissions if it complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (Sec. 15064(h)(3)). However, the guidelines do not require or recommend a specific analytical methodology or provide quantitative criteria for determining the significance of GHG emissions.

This bill also protected projects until January 1, 2010 that were funded by the Highway Safety, Traffic Reduction, Air Quality and Port Security Bond Act of 2006, or the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1B or 1E) from claims of inadequate analysis of GHG as a legitimate cause of action. Thus, this "protection" is highly limited to a handful of projects and for a short time period (CAPCOA 2008).

Senate Bill 1368

Senate Bill (SB) 1368 (codified at Public Utilities Code Chapter 3) is the companion bill of AB 32. SB 1368 required the California Public Utilities Commission (CPUC) to establish a greenhouse gas emissions performance standard for base-load generation from investor-owned utilities by February 1, 2007. The bill also required the California Energy Commission (CEC) to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards cannot exceed the greenhouse gas emission rate from a base-load combined-cycle natural-gas-fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the CPUC and the CEC.

Senate Bill 1078 and Governor's Order S-14-08 (California Renewables Portfolio Standards)

Senate Bill 1078 (Public Utilities Code Sections 387, 390.1, 399.25 and Article 16) addresses electricity supply and requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide a minimum 20 percent of their supply from renewable sources by 2017. This Senate Bill will affect statewide GHG emissions associated with electricity generation. In 2008, Governor Schwarzenegger signed Executive Order S-14-08, which set the Renewables Portfolio Standard target to 33 percent by 2020. It directed state government agencies and retail sellers of electricity to take all appropriate actions to implement this target. The Project area would receive energy service from the investor-owned Pacific Gas and Electric Company.

Prior to the Executive Order, the CPUC and the CEC were responsible for implementing and overseeing the Renewables Portfolio Standard. The Executive Order shifted that responsibility to ARB, requiring it to adopt regulations by July 31, 2010. ARB is required by current law, AB 32 of 2006, to regulate sources of greenhouse gases to meet a state goal of reducing greenhouse gas emissions to 1990 levels by 2020 and an 80 percent reduction of 1990 levels by 2050. The CEC and CPUC are expected to serve in advisory roles to help ARB develop the regulations to administer the 33 percent

by 2020 requirement. Additionally, the CEC and CPUC will continue their implementation and administration of the 20 percent requirement. The Executive Order also stipulates that ARB may delegate to the CPUC and CEC any policy development or program implementation responsibilities that would reduce duplication and improve consistency with other energy programs. ARB is also authorized to increase the target and accelerate and expand the time frame.

The general definition under the State Renewables Portfolio Standard for biomass is any organic material not derived from fossil fuels, including agricultural crops, agricultural wastes and residues, waste pallets, crates, dunnage, manufacturing, and construction wood wastes, landscape and right-of-way tree trimmings, mill residues that result from milling lumber, rangeland maintenance residues, sludge derived from organic matter, and wood and wood waste from timbering operations. Biomass feedstock from state and national forests is allowable under the definition.

Executive Order S-13-08: The Climate Adaptation and Sea Level Rise Planning Directive
On November 14, 2008, Governor Schwarzenegger issued Executive Order S-13-08 in order to reduce and assess California's vulnerability to climate change and sea level rise. The Executive Order initiated four major actions:

- Initiate California's first statewide climate change adaptation strategy that will assess the state's expected climate change impacts, identify where California is most vulnerable, and recommend climate adaptation policies by early 2009.
- Request the National Academy of Sciences establish an expert panel to report on sea level rise impacts in California to inform state planning and development efforts.
- Issue interim guidance to state agencies for how to plan for sea level rise in designated coastal and floodplain areas for new projects.
- Initiate a report on critical existing and planned infrastructure projects vulnerable to sea level rise. This report was released in 2009 as the California Adaptation Strategy (CNRA 2009).

Mandatory Reporting of Greenhouse Gas Emissions
Reporting of greenhouse gases by major sources is required by the California Global Warming Solutions Act (AB 32, 2006). Revisions to the existing ARB mandatory GHG reporting regulation were considered at the board hearing on December 16, 2010. The revised regulation was approved by the California Office of Administrative Law and became effective on January 1, 2012. The revised regulation affects industrial facilities, suppliers of transportation fuels, natural gas, natural gas liquids, liquefied petroleum gas, andCO_2, operators of petroleum and natural gas systems, and electricity retail providers and marketers.

Cap-and-Trade Regulation
The cap-and-trade regulation is a key element in California's climate plan. It sets a statewide limit on sources responsible for 85 percent of California's greenhouse gas emissions, and establishes a price signal needed to drive long-term investment in cleaner fuels and more efficient use of energy. The cap-and-trade rules came into effect on January 1, 2013 and apply to large electric power plants and large industrial plants. In 2015, they will extend to fuel distributors (including distributors of heating and transportation fuels). At that stage, the program will encompass nearly 85 percent of the state's total greenhouse gas emissions.

GHG emissions addressed by the cap-and-trade regulation are subject to an industry-wide cap on overall GHG emissions. The cap-and-trade regulation sets a firm limit or cap on GHGs, which declines approximately 3 percent each year beginning in 2013. Any growth in emissions must be accounted

for under the cap, such that a corresponding and equivalent reduction in emissions must occur to allow any increase. The cap-and-trade regulation will help California achieve its goal of reducing GHG emissions to 1990 levels by the year 2020, and ultimately achieving an 80% reduction from 1990 levels by 2050. As such, the ARB has determined that the cap-and-trade regulation meets the requirements of AB 32.

SJVAPCD Climate Change Action Plan

On August 21, 2008, the SJVAPCD Governing Board approved the District's Climate Change Action Plan with the following goals and actions:

Goals:

- Assist local land-use agencies with California Environmental Quality Act (CEQA) issues relative to projects with GHG emissions increases.
- Assist Valley businesses in complying with mandates of AB 32.
- Ensure that climate protection measures do not cause increase in toxic or criteria pollutants that adversely impact public health or environmental justice communities.

Actions:

- Authorize the Air Pollution Control Officer to develop GHG significance threshold(s) or other mechanisms to address CEQA projects with GHG emissions increases. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in the spring of 2009.
- Authorize the Air Pollution Control Officer to develop necessary regulations and instruments for establishment and administration of the San Joaquin Valley Carbon Exchange Bank for voluntary GHG reductions created in the Valley. Begin the requisite public process, including public workshops, and develop recommendations for Governing Board consideration in spring 2009.
- Authorize the Air Pollution Control Officer to enhance the District's existing criteria pollutant emissions inventory reporting system to allow businesses subject to AB32 emission reporting requirements to submit simultaneous streamlined reports to the District and the state of California with minimal duplication.
- Authorize the Air Pollution Control Officer to develop and administer voluntary GHG emission reduction agreements to mitigate proposed GHG increases from new projects.
- Direct the Air Pollution Control Officer to support climate protection measures that reduce GHG emissions as well as toxic and criteria pollutants. Oppose measures that result in a significant increase in toxic or criteria pollutant emissions in already impacted area.

SJVAPCD CEQA Greenhouse Gas Guidance.

On December 17, 2009, the SJVAPCD Governing Board adopted "Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA" and the policy, "District Policy—Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency." The SJVAPCD concluded that the existing science is inadequate to support quantification of the impacts that project specific greenhouse gas emissions have on global climatic change. The SJVAPCD found the effects of project-specific emissions to be cumulative, and without mitigation, that their incremental contribution to global climatic change could be considered cumulatively considerable. The SJVAPCD found that this cumulative impact is best addressed by requiring projects to reduce their greenhouse gas emissions, whether through project design elements or mitigation.

The SJVAPCD's approach is intended to streamline the process of determining if project-specific greenhouse gas emissions would have a significant effect. Projects exempt from the requirements of

CEQA, and projects complying with San Joaquin Valley APCD's approved plans or mitigation programs (such as the Climate Change Action Plan discussed above) would be determined to have a less than significant cumulative impact. Such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources and have a certified final CEQA document.

Best performance standards (BPS) to address operational emissions of a project would be established according to performance-based determinations. Projects complying with BPS would not require specific quantification of GHG emissions and would be determined to have a less than significant cumulative impact for GHG emissions. Projects not complying with BPS would require quantification of GHG emissions and demonstration that operational greenhouse gas emissions have been reduced or mitigated by 29 percent, as targeted by ARB's AB 32 Scoping Plan. Furthermore, quantification of GHG emissions would be required for all projects for which the lead agency has determined that an Environmental Impact Report is required, regardless of whether the project incorporates BPS.

CEQA Determinations of Significance for Projects Subject to ARB's Cap-and-Trade Regulation (ARB 2025)

The purpose of this policy is to provide guidance for the determination of significance for increases of GHG emissions associated with projects that are subject to ARB's cap-and-trade regulation. The SJVAPCD recognizes that the ARB's Cap-and-Trade Regulation is an adopted state-wide plan for reducing or mitigating GHG emissions from targeted industries. GHG emissions addressed by the Cap-and-Trade regulation are subject to an industry-wide cap on overall GHG emissions. As such, any growth in emissions must be accounted for under that cap, such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions. Therefore, the SJVAPCD concluded that GHG emissions increases subject to ARB's Cap-and-Trade regulation would have a less than significant individual and cumulative impact on global climate change. This policy applies to projects for which the SJVAPCD is the lead agency, but is also useful for evaluation of other CEQA related projects for which the SJVAPCD may not be the lead agency.

IMPACT ASSESSMENT

VII-a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact.

Short-term Construction

Construction of the Project would result in the temporary generation of emissions associated with various activities, including site preparation, grading, and the construction of project infrastructure. GHG emissions would be largely associated with off-road equipment use, as well as on-road vehicle operations associated with workers commuting to and from the project site and haul truck trips. Estimated increases in GHG emissions associated with construction of the Project are summarized in Table 10. As depicted, annual emissions of GHGs associated with construction of the Project would total approximately 1,469.2 MTCO2*e*. Amortized construction-generated GHG emissions, when Air Quality & GHG Impact Analysis AMBIENT Air Quality & Noise Consulting South Valley Water Bank Project January 2017 45 averaged over the assumed minimum 25-year life of the project, would total

approximately 58.8 MTCO2*e*/year. There would also be a small amount of GHG emissions from waste generated during construction; however, this amount is speculative.

The SJVAPCD has not adopted guidance that would apply to project-generated construction emissions. For the purposes of this analysis, construction-generated emissions were amortized over a 25-year period and included with the operational emissions. Because there is no separate GHG threshold for construction generated GHGs, the evaluation of significance is discussed in the analysis of operational GHG emissions.

Table 0-3: Short-term Construction-Generated GHG Emissions

Construction Activity	GHG Emissions (MT CO_2e)(1)
Recharge Basin Construction (Year 1)	877.7
Recharge Basin Construction (Year 2)	273.5
In-Lieu Banking Area	27.5
Pipeline Installation	290.5
Total:	*1,469.2*
Amortized(2):	*58.8*
1. *Emissions were quantified using CalEEMod, version 2016.3.1. Refer to **Appendix B** for modeling results and assumptions. Totals may not sum due to rounding.*	2. *Amortized emissions were quantified based on an approximate 25-year project life.*

Long-term Operation

Estimated operational GHG emissions are summarized in **Table 1-4**. With the inclusion of amortized construction emissions, the Project would generate approximately 66.4 MTCO2*e*/year in year 2020, excluding emissions from stationary sources. GHG emissions would be primarily associated with the operation of off-road equipment and on-road worker commute vehicles. With the removal of existing GHG emission sources, net increases in mobile source emissions would total approximately 60.6 MTCO2*e*/year. Operational emissions from these sources would not exceed the threshold of 1,100 MTCO2*e*/year. In addition, stationary source GHG emissions would total approximately 2,796.1 MTCO2*e*/year and would not exceed the numerical threshold of 10,000 MTCO2*e*/year. GHG emissions in future years, beyond year 2020, would be lower due to improvements in vehicle emission rates and the increased use of renewable energy sources.

The proposed booster and well pumps would be electrically powered, consistent with SJVAPACD's Best Available Control Technology requirements for pumps with engines of at least 50 horsepower, or greater. In addition, implementation of Mitigation Measure AQ-2 includes various measures that would reduce project-generated GHG emissions, including limitation on construction vehicle and equipment idling, the use of newer lower-emission equipment, and the recycling of construction-generated waste. The use of newer lower-emission equipment and idling limitations for off-road equipment and on-road vehicles would further reduce GHG emissions, including emissions of black carbon. Furthermore, it is important to recognize that project-generated GHG emissions would be predominantly associated with electricity use and fuel combustion. GHG emissions associated with electricity use and fuel combustion would be subject to the State's Cap and Trade regulations. In accordance with SJVAPCD's recommendations for the evaluation of GHG emissions, emissions that are subject to the State's Cap and Trade regulations would be considered to be mitigated through

compliance with the Cap and Trade regulatory requirements and would, therefore, be considered to have a less-than-significant impact (SJVAPCD 2014). For these reasons, GHG emissions would be considered to have a less than significant impact.

Table 1-0-4: Long-Term Operational GHG Emissions

Source	Annual Emissions (MT CO_2e)[1]
Mobile Sources	
Operational Maintenance Activities (On-Road Vehicles & Off-Road Equipment)	7.6
Amortized Construction Emissions	58.8
Total:	66.4
Existing Emissions to be Removed:	5.8
Net Increase:	60.6
Significance Threshold:	1,100
Exceed Thresholds?	No
Stationary Sources	
Stationary Sources (Booster Lift & Well Pumps)	2,796.1
Existing Emissions to be Removed:	367.6
Net Increase:	2,428.5
Significance Threshold:	10,000
Exceed Thresholds?	No
1. Emissions were quantified using CalEEMod, version 2016.3.1. Totals may not sum due to rounding. *2. Existing emissions include emissions associated with the use of off-road equipment, worker commute trips. To be conservative, existing emissions do not include mobile-source emissions associated with the transport of agricultural products.*	*3. Includes the operation of existing stationary sources (water pumps).* *Refer to Appendix B for modeling results and assumptions.*

VII-b) Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact.

In accordance with SJVAPCD's CEQA thresholds for the evaluation of GHG impacts, a project would not have a significant GHG impact if it is consistent with an applicable GHG-reduction plan. Applicable GHG reduction plans include Tulare County Association of Government's *2014 Regional Transportation Plan/Sustainable Communities Strategy* (*2014 RTP/SCS*) and ARB's *Climate Change Scoping Plan*.

The Project is consistent with the projected land use development patterns identified in the 2014 RTP/SCS, would not interfere to implementation of these strategies, and would not result in a substantial increase in motor vehicle use. As a result, the Project would be consistent with the *2014 RTP/SCS*. The Project's consistency with the action items contained in the *Climate Change Scoping Plan* is summarized in Appendix B. The Project would not conflict with the provisions of the *Climate*

Change Scoping Plan. The Project would be consistent with the *Climate Change Scoping Plan*. Therefore, the impact would be less than significant.

VIII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☒	☐

BASELINE CONDITIONS

Environmental Setting

The Project area has historically and is currently being used predominately as agricultural land. The application of agricultural chemicals, including but not limited to herbicides and pesticides, is anticipated to have occurred at portions of the survey area. The routine and appropriate application of agricultural chemicals is not considered a recognized environmental condition.

The surrounding area is primarily agricultural fields, with the exception of Deer Creek, which bisects the Project area. Irrigation canals, ponds and scattered rural residences are located in the general vicinity in the Project site.

The closest airstrip is the Porterville Airport, a public airport located approximately 7.45 miles to the northeast of the Project site.

The Teapot Dome Landfill is approximately 5.9 miles north/northeast of the Project site.

The nearest school is Saucelito Elementary School, located approximately 2.08 miles northeast of the site.

Regulatory Setting

Federal

United States Environmental Protection Agency (USEPA)
The USEPA provides leadership in the nation's environmental science, research, education, and assessment efforts with the mission of protecting human health and the environment. The USEPA works to develop and enforce regulations that implement environmental laws enacted by Congress. It is also responsible for researching and setting national standards for a variety of environmental programs and delegates to states the responsibility for issuing permits and for monitoring and enforcing compliance. The agency also performs environmental research, sponsors voluntary partnerships and programs, provides direct support through grants to state environmental programs, and advances educational efforts regarding environmental issues. The USEPA develops and enforces regulations per Title 40 of the U.S. Code of Federal Regulations (CFR) that span many environmental categories, including hazardous materials. Specific regulations include those regarding asbestos, brownfields, toxic substances, underground storage tanks, and Superfund sites, as discussed below.

Resource Conservation and Recovery Act (RCRA)
The RCRA (codified 42 United States Code 6901 et seq.) gives the USEPA the authority to control hazardous waste from — including the generation, transportation, treatment, storage, and disposal of hazardous waste. The RCRA also sets forth a framework for the management of nonhazardous solid wastes. The 1986 amendments to the RCRA enabled the Environmental Protection Agency to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances.

The Federal Hazardous and Solid Waste Amendments (HSWA) are the 1984 amendments to the RCRA that focused on waste minimization and phasing out land disposal of hazardous waste as well as corrective action for releases. Some of the other mandates of this law include increased

enforcement authority for the USEPA, more stringent hazardous waste management standards, and a comprehensive underground storage tank program[39].

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
The CERCLA (codified 42 United States Code 9601-9675) provides a Federal superfund to clean up uncontrolled or abandoned hazardous-waste sites as well as accidents, spills, and other emergency releases of pollutants and contaminants into the environment. Through CERCLA, the United States Environmental Protection Agency was given power to seek out those parties responsible for any release and assure their participation in the cleanup. The USEPA is authorized to implement CERCLA in all 50 states and in U.S. territories. Superfund site identification, monitoring, and response activities in states are coordinated through the state environmental protection or waste management agencies. The Superfund Amendments and Reauthorization Act (SARA) of 1986 reauthorized CERCLA to continue cleanup activities around the country. Several site-specific amendments, definition clarifications, and technical requirements were added to the legislation, including additional enforcement authorities[40].

This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA has established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and, established a trust fund to provide for cleanup when no responsible party could be identified.

The law authorizes two kinds of response actions: Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response. Long-term remedial response actions, that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. These actions can be conducted only at sites listed on EPA's National Priorities List (NPL).

CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the NPL.

Occupational and Safety Health Act (OSHA)
Congress passed the OSHA in 1970 (codified 29 United States Code Section 651 – 678) to ensure worker and workplace safety. The goal was to ensure that employers provide their workers a place of employment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. OSHA is a division of the U.S. Department of Labor that oversees the administration of the act and enforces standards in all 50 states.

U.S. Department of Transportation (US DOT)
Federal Hazardous Materials Transportation Law and Hazardous Materials Regulations The Federal hazardous materials transportation law (Federal hazmat law), 49 U.S.C. Section 5101 et seq., is the

[39] USEPA. Summary of the Resource Conservation and Recovery Act. http://www2.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act . Accessed August 2014.
[40] USEPA. Summary of the Resource Conservation and Recovery Act. http://www.epa.gov/tribalportal/laws/cercla.htm. Accessed August 2014.

basic statute regulating hazardous materials transportation in the United States. Section 5101 of the Federal hazmat law states that the purpose of the law is to protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce.

The Hazardous Materials Regulations (HMR), which implements the Federal hazmat law, governs the transportation of hazardous materials by highway, rail, vessel, and air. The HMR address hazardous materials classification, packaging, hazard communication, emergency response information, and training. The Pipeline and Hazardous Material Safety Administration (PHMSA) also issues procedural regulations, including provisions on registration and public sector training and planning grants (49 CFR Parts 105, 106, 107, and 110). The Pipeline and Hazardous Material Safety Administration issues the HMR[41].

Clean Water Act/SPCC Rule

The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq., formerly the Federal Water Pollution Control Act of 1972), was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. As part of the Clean Water Act, the U.S. EPA oversees and enforces the Oil Pollution Prevention regulation contained in Title 40 of the CFR, Part 112 (Title 40 CFR, Part 112) which is often referred to as the "SPCC rule" because the regulations describe the requirements for facilities to prepare, amend and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans. A facility is subject to SPCC regulations if a single oil storage tank has a capacity greater than 660 gallons, or the total above ground oil storage capacity exceeds 1,320 gallons, or the underground oil storage capacity exceeds 42,000 gallons, and if, due to its location, the facility could reasonably be expected to discharge oil into or upon the "Navigable Waters" of the United States.

Other Federal regulations overseen by the U.S. EPA relevant to hazardous materials and environmental contamination include Title 40, CFR, Chapter 1, Subchapter D – Water Programs and Subchapter I – Solid Wastes. Title 40, CFR, Chapter 1, Subchapter D, Parts 116 and 117 designate hazardous substances under the Federal Water Pollution Control Act. Title 40, CFR, Part 116 sets forth a determination of the reportable quantity for each substance that is designated as hazardous. Title 40, CFR, Part 117 applies to quantities of designated substances equal to or greater than the reportable quantities that may be discharged into waters of the United States.

State

California Environmental Protection Agency (CalEPA)

The California Environmental Protection Agency (CalEPA) was created in 1991 by Governor's Executive Order. The six boards, departments, and office were placed under the CalEPA umbrella to create a cabinet-level voice for the protection of human health and the environment and to assure the coordinated deployment of State resources. The mission of CalEPA is to restore, protect, and enhance the environment to ensure public health, environmental quality, and economic vitality under Title 22 of the California Code of Regulations (CCR)[42]

Department of Toxic Substances Control

[41] Pipeline and Hazardous Materials Safety Administration. Hazmat Law Overview. http://www.phmsa.dot.gov/pv_obj_cache/pv_obj_id_D18F206030FED6A51FBE327BDB6C2301C03C0500/filename/Hazmat%20Law%20Overview.pdf. Accessed August 6, 2014.
[42] California Environmental Protection Agency, Site accesses: August 2013, http://www.calepa.ca.gov

DTSC is a department of Cal/EPA and is the primary agency in California that regulates hazardous waste, cleans-up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. Government Code Section 65962.5 (commonly referred to as the Cortese List) includes DTSC listed hazardous waste facilities and sites, DHS lists of contaminated drinking water wells, sites listed by the SWRCB as having UST leaks and which have had a discharge of hazardous wastes or materials into the water or groundwater, and lists from local regulatory agencies of sites that have had a known migration of hazardous waste/material.

Division of Oil, Gas, and Geothermal Resources

DOGGR is a State agency and responsible for supervising the drilling, operation, maintenance, plugging, and abandonment of oil, gas, and geothermal wells. DOGGR's regulatory program promotes the sensitive development of oil, natural gas, and geothermal resources in California through sound engineering practices, pollution prevention, and the implementation of public safety programs. DOGGR requires any construction above or near plugged or abandoned oil and gas wells to be avoided and the remediation of wells to current DOGGR standards.

Unified Program

The Unified Program (codified CCR Title 27, Division 1, Subdivision 4, Chapter 1, Sections 15100-15620) consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the following six environmental and emergency response programs[43]:

- Hazardous Waste Generator (HWG) program and Hazardous Waste On-site Treatment activities;
- Aboveground Storage Tank (AST) program Spill Prevention Control and Countermeasure Plan requirements;
- Underground Storage Tank (UST) program;
- Hazardous Materials Release Response Plans and Inventory (HMRRP) program;
- California Accidental Release Prevention (CalARP) program;
- Hazardous Materials Management Plans and Hazardous Materials Inventory Statement (HMMP/HMIS) requirements.

The Secretary of CalEPA is directly responsible for coordinating the administration of the Unified Program. The Unified Program requires all counties to apply to the CalEPA Secretary for the certification of a local unified program agency. Qualified cities are also permitted to apply for certification. The local Certified Unified Program Agency (CUPA) is required to consolidate, coordinate, and make consistent the administrative requirements, permits, fee structures, and inspection and enforcement activities for these six program elements in the county. Most CUPAs have been established as a function of a local environmental health or fire department.

Hazardous Waste Management Program

The Hazardous Waste Management Program (HWMP) regulates hazardous waste through its permitting, enforcement, and Unified Program activities in accordance with California Health and Safety Code Section 25135 et seq. The main focus of HWMP is to ensure the safe storage, treatment, transportation, and disposal of hazardous wastes.

[43] California Environmental Protection Agency, Site accesses: August 2013, http://www.calepa.ca.gov/cupa/

State Water Resources Control Board (SWRCB)

The State Water Resources Control Board (SWRCB) was created by the California legislature in 1967. The mission of SWRCB is to ensure the highest reasonable quality for waters of the State, while allocating those waters to achieve the optimum balance of beneficial uses. The joint authority of water allocation and water quality protection enables SWRCB to provide comprehensive protection for California's waters.

California Department of Industrial Relations – Division of Occupational Safety and Health (Cal OSHA)

In California, every employer has a legal obligation to provide and maintain a safe and healthful workplace for employees, according to the California Occupational Safety and Health Act of 1973 (per Title 8 of the CCR). The Division of Occupational Safety and Health (Cal/OSHA) program is responsible for enforcing California laws and regulations pertaining to workplace safety and health and for providing assistance to employers and workers about workplace safety and health issues. Cal/OSHA regulations are administered through Title 8 of the CCR. The regulations require all manufacturers or importers to assess the hazards of substances that they produce or import and all employers to provide information to their employees about the hazardous substances to which they may be exposed.

Local

Tulare County Health and Human Services Agency, Environmental Health Division

The Unified Hazardous Waste and Hazardous Management Regulatory Program (SB 1082, Health and Safety Code section 25260 et seq) is a State and local effort to consolidate, coordinate, and make consistent existing programs regulating hazardous waste and hazardous materials management. The Unified Program is implemented at the local level by a Certified Unified Program Agency (CUPA). The Tulare County Health and Human Services Agency (TCHHSA), Environmental Health Division (EHD) through the County of Tulare is the CUPA for all cities and unincorporated areas within Tulare County[44].

Tulare County Hazardous Waste Management Plan

Tulare County has prepared a Hazardous Waste Management Plan (HWMP) in accordance with California Health and Safety Code Section 24135 et seq. The Tulare County HWMP was developed in May 1989 and identifies hazardous waste generators within the County, amounts and types of waste produced and projected waste generation. The major goal of the HWMP is to reduce the need for new hazardous waste facilities by reducing waste at its source through recycling, reduced use of hazardous materials, and public education[45.]

Tulare County Multi-Hazard Functional Plan

Tulare County has prepared a Multi-Hazard Functional Plan to serve as the County's emergency response plan. The plan addresses responses to various emergency incidents, responsibilities of various agencies, and sources of outside assistance. The plan also identifies evacuation centers and addresses evacuation routes, which include all freeways, highways, and arterials that are located outside f the 100-year flood plain[46].

[44] County of Tulare. 2010. Recirculated Draft Environmental Impact Report, SCH No. 2006041162. Page 3.8-5
[45] Ibid.
[46] County of Tulare. 2010. Recirculated Draft Environmental Impact Report, SCH No. 2006041162. Page 3.8-5 – 3.8-6

Tulare County General Plan Policies

- HS-3: To minimize the possibility of the loss of life, injury, or damage to property as a result of airport hazards.
    - HS-3.1: Airport Land Use Compatibility Plan – The County shall require that development around airports is consistent with the safety policies and land use compatibility guidelines contained in the adopted Tulare County Comprehensive Airport Land Use Plan (CALUP).
- HS-4: To protect residents, visitors, and property from hazardous materials through their safe use, storage, transport, and disposal.
    - HS-4.1: Hazardous Materials – The county shall strive to ensure hazardous materials are used, stored, transported, and disposed of in a safe manner, in compliance with local, State, and Federal safety standards, including the Hazardous Waste Management Plan, Emergency Operations Plan, and Area Plan.
    - HS-4.2: Establishment of Procedures to Transport Hazardous Wastes – The County shall continue to cooperate with the California highway Patrol (CHP) to establish procedures for the movement of hazardous wastes and explosives within the County.
    - 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.
- HS-6: To Minimize the exposure of County residents, visitors, and public and private property to the effects of urban and wildland fires.
    - HS-6.6: Wildland Fire Management Plans – The County shall require the development of wildland fire management plans for projects adjoining significant areas of open space that may have high fuel loads.
    - HS-6.12: Weed Abatement – The County shall continue to encourage weed abatement programs throughout the County in order to promote fire safety.
- HS-7: To provide effective emergency response to natural or human-made hazards and disasters.
    - HS-7.3: Maintain Emergency Evacuation Plans – The County shall continue to create, revise, and maintain emergency plan for the broad range of natural and human-made disasters and response activities that could foreseeably impact Tulare County.

IMPACT ASSESSMENT

VIII-a) Will the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

And

VIII-b) Will the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. Construction of the Project's components will require the transport and/or use of small quantities of hazardous materials in the form of gasoline, diesel and oil. The Project's permanent elements including a new turnout, pipelines, electric control facilities, recovery wells, and recharge basins construction would not require long-term storage, treatment, disposal or transport of significant quantities of hazardous materials. The hazardous materials anticipated to be used are small volumes of petroleum hydrocarbons and their derivatives (e.g., gasoline, oils, lubricants and solvents) required to operate the construction equipment. These materials would generally be used in excavation equipment, generators, and other construction equipment and would be contained within vessels engineered for safe storage.

However; there is the potential for small leaks or spills due to refueling of the construction equipment. Standard construction and operational Best Management Practices (BMPs) including the installation of regulated spill containment at each tank (HM-1 and HM-2, as identified in Chapter 2, Project Description) will minimize the potential for the release of construction-related fuels and other hazardous materials. These BMPs will also control storm water contamination from spills or leaks, control the amount of runoff from the site, and require proper disposal or recycling of hazardous materials.

The Project would utilize standard construction Best Management Practices (BMPs) and develop a SWPPP as described in Impact VI-b to protect water quality in response to emergency spills to further reduce the potential for the release of construction-related fuels and other hazardous materials to storm water contamination. Therefore, the Project will not create a significant hazard to the public or the environment. The impact will be less than significant.

VIII-c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. No schools are located within one-quarter mile of the Project's boundaries. Additionally, the Project involves construction of groundwater recharge and recovery facilities including a new turnout, pipelines, control facilities, recovery wells and recharge basins which will not emit hazardous levels emissions, involve hazardous materials, or create a hazard to schools in any way. There will be no impact.

VIII-d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The Project does not involve any land that is listed as a hazardous materials site pursuant to Government Code Section 65962.5 and is not included on a list compiled by the Department of Toxic Substances Control per a review of "Identified Hazardous Waste Sites", on EnviroStor, conducted on November 10, 2016 by Provost & Pritchard Consulting Group. The nearest site to the Project entailed a school investigation of Marion Howard Middle school which requires no further action for remediation. There will be no impact.

VIII-e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The Project area is not located within an Airport Influence Area or Land Use Compatibility Zone as identified in the Tulare County Comprehensive Airport Land Use Plan[47]. The nearest public Airport is the Porterville Municipal Airport, located approximately 7.45 miles to the northeast of the Project area. Therefore, there will be no impact.

VIII-f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. There is no private airstrip within the Project area. The nearest private airstrip, Private Airstrip at Kramer and Deer Creek, is located adjacent to the project site. Considering the airstrip is not within the Project area boundary, there would be no impact.

VIII-g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The Project is in a rural area, there are no major routes that bi-sect the survey area. The construction and operation of the Project would not result in the permanent closure of any roadways. Temporary lane closures may be required on the west side of Road 184. Any road or lane closure activities will be temporary and will be scheduled to maintain access to nearby properties. Therefore, the Project would not interfere with implementation of an emergency response plan or evacuation.

The Project area is in a rural area, there are no major routes that dissect the survey area. Therefore, the Project would not interfere with implementation of an emergency response plan or evacuation.

VIII-h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Less than Significant Impact.

According to the California Department of Forestry and Fire Prevention, Fire Hazard Severity Zones Map, the Project area is not located in a Very High Fire Hazard Severity Zone[48]. Additionally, the Project area is not located in a High or Very High Fire Threat Zone, as delineated in Figure 8-2 of the Tulare County General Plan Background Report.[49]Therefore, the Project will not be exposed to risks from wildland fires. Additionally, all recharge and recovery facilities and area will be maintained for weed control. The impact would be less than significant.

[47] Aries Consultants Ltd. Tulare County Comprehensive Airport Land Use Plan. Prepared for the County of Tulare Airport Land Use Commission. December 2012. Figure 1-1.
[48] California Department of Forestry and Fire Prevention. Draft Fire Hazard Severity Zones in LRA: Tulare County. September 2007.
[49] ESA Associates. Tulare County General Plan 2030 Update, Appendix B Background Report. February 2010. Figure 8-2.

IX. HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
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)?	☐	☒	☐	☐
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?	☐	☐	☒	☐
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?	☐	☒	☐	☐
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?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
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?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☒	☐	☐
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?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

BASELINE CONDITIONS

Environmental Setting

Appendix H contains a technical study entitled *Hydrology and Water Quality Impacts Analysis .* This study was prepared by Amec Foster Wheeler and Luhdorff & Scalmanini Consulting Engineers to evaluate potential effects to hydrologic and water resources from construction and operation of the Project. Information from Appendix H is utilized below in the description of baseline conditions (environmental and regulatory), project-level and cumulative impact analysis and recommended Mitigation Measures.

Physiographic Location

The Project is located within the Central Valley physiographic province of California. The Central Valley can be divided into the northern San Joaquin Basin that drains into the Sacramento Delta and the southern Tulare Basin, which is hydrologically closed. The Project is located within the Tule Subbasin (Tule Subbasin) as defined by California Department of Water Resources (DWR) Bulletin 118 (DWR, 2003) (Figure 1 in Appendix H2). The Tule Subbasin occurs within the Tulare Lake Hydrologic Region and comprises approximately 467,000 acres. It is bordered by Kern County to the south, Tulare Lake to the west, Kaweah River to the north, and the foothills to the east. There are three major surface watersheds located within the boundary of the Tule Basin: Tule River, Deer Creek, and White River.[50]

Surface Water Hydrology

There are only two surface waters of significance near the Project: Deer Creek and the Central Valley Project (CVP) FKC (Figure 1 of Appendix H2). Deer Creek is an intermittent stream extending from the Greenhorn Mountains in the Sierra Nevada and terminating in the Lakeland and Homeland Canals near the Tulare/Kings County border. Prior to diversion for agricultural purposes, Deer Creek ran into the former Tulare Lake bed. The United States Geological Survey operates a gauging station (#11200800) on Deer Creek near Fountain Springs where Deer Creek descends onto the valley floor. A chart of monthly Deer Creek flows from 1968 to present shows that Deer Creek has significant seasonal variability (Figure 5 in Appendix H1). Peak flows from 40 to 70 cubic feet per second (cfs) typically occur from January through May (Figure 5 in Appendix H1). The long-term average monthly discharge of Deer Creek is about 30 cfs (60.5 acre-feet per month [af/m]).

The CVP FKC passes within one mile of the eastern edge of the Project (Figure 4 in Appendix H1). The FKC is a Federal water facility operated and maintained by the Friant Water Users Authority and is used to convey water from the San Joaquin River to Kern County. The canal originates at the Friant Dam, which is operated by the United States Bureau of Reclamation. The FKC flows southeasterly along the western flank of the Sierra Nevada foothills through Fresno, Tulare, and Kern Counties. The FKC has a capacity of approximately 5,300 cfs (10,510 af/d), which decreases to about 2,500 cfs (4,959 af/d) as demand decreases toward its end in the Kern River, near Bakersfield, California.

Hydrogeology

As noted above, the Project is located within Tulare Lake Hydrologic Region, within the Tule Sub-Basin number 5-22.13 (Tule Basin) as defined by DWR Bulletin 118. The sediments that comprise the Tule Basin's aquifer are continental deposits of Tertiary and Quaternary age (Pliocene to

[50] Department of Water Resources. California's Groundwater Bulletin 118. San Joaquin Valley Groundwater Basin: Tule Subbasin 5-22.13. February 2004.

Holocene). These deposits include flood-basin deposits, younger alluvium, older alluvium, the Tulare Formation, and undifferentiated continental deposits.

The flood-basin deposits consist of relatively impermeable silt and clay inter-bedded with some moderately to poorly permeable sand layers that inter-finger with the younger alluvium. These deposits are probably not important as a source of water to wells but may yield sufficient supplies for domestic and stock use.

The younger alluvium is a complex of interstratified and discontinuous beds of unsorted to fairly well sorted clay, silt, sand, and gravel, comprising the materials beneath the alluvial fans in the valley and stream channels. Where saturated, the younger alluvium is very permeable, but this unit is largely unsaturated and probably not important as a source of water to wells. The older alluvium consists of poorly sorted deposits of clay, silt, sand, and gravel. This unit is moderately to highly permeable and is a major source of water to wells.

The Tulare Formation consists of poorly sorted deposits of clay, silt, sand, and gravel derived predominately from the Coast Ranges. It contains the Corcoran Clay Member, the major confining bed in the Tule Basin. The formation is moderately to highly permeable and yields moderate to large quantities of water to wells. The Corcoran Clay occurs between depths of about 200 to 300 feet below ground surface (bgs) in the general Project area.

The undifferentiated continental deposits consist of poorly sorted lenticular deposits of clay, silt, sand, and gravel derived from the Sierra Nevada. The unit is moderately to highly permeable and is a major source of ground water in the Tule Basin.

Groundwater Occurrence

The sediments described above comprise the regional aquifer system. Due to the abundance of lenses of fine-grained materials distributed throughout the Tule Basin, two aquifer systems have been developed. In a 1984 report, Poland and Lofgren define the aquifer in the Tule Basin as unconfined or confined based on the absence or presence of the Corcoran Clay (Poland and Lofgren, 1984). In parts of the Tule Basin, the Corcoran Clay separates aquifers with distinctly different water chemistries (USGS, 1959; USGS, 1989). Differences in hydraulic head and water chemistry above and below the Corcoran Clay support the hypothesis that the Corcoran Clay separates the aquifer system into unconfined or semi-confined zones (above the clay) and a confined zone (below the clay). However, in some areas of the Tule Basin, the fine-grained lenses have a combined thickness of several hundred feet. Also, many wells have been perforated above and below the Corcoran Clay, allowing flow through the well casings and gravel packs. In the vicinity of these wells, hydraulic head is equalized. In the eastern areas of the Tule Basin where the Corcoran Clay is absent, head differences between shallow and deeper wells result from restriction of vertical movement by intervening clay layers (USGS, 1989).

The heterogeneous composition of alluvial deposits exhibit classic examples of unconfined and confined aquifers (USGS, 1968). Aquifers in which the heads rises and falls with the water table are defined as unconfined. Aquifers which exhibit a rapid pressure response that do not equilibrate with the water table are defined as confined. Aquifers that respond to changes in pressure over short periods of time, but in which heads adjusts to equilibrium with the water table over long, low stress periods of time, are defined as be semi-confined (USGS, 1968). Beneath most of the Project, the aquifer is unconfined or semi-confined by lenses of fine-grained material. Where the Corcoran Clay is present, the shallow overlying aquifer is unconfined or semi-confined while the aquifer beneath the Corcoran Clay is confined.

An evaluation of the Project hydrogeologic setting is presented in Appendix H and entails a review of over 480 water well drillers' reports and oil and gas electric logs, plus 9 geotechnical borings at the Project site to investigate the upper 100 feet of sediments. Two regional and two site-specific geologic cross sections were constructed to characterize the occurrence of aquifer materials and their stratigraphic relationships. The regional cross sections delineate the edge of the Corcoran Clay west of the Project site and nature and distribution of aquifer units that are targets of water supply wells in the Tule Subbasin. Near the Project site, aquifer materials are grouped stratigraphically, but exhibit variable continuity and are interbedded with finer-grained materials including clay beds.

The conceptualization of the aquifer system in the Project area is of a single aquifer system consisting of sands and interbedded clays typical of alluvial plain deposition. From its configuration, the aquifer system is expected to be leaky, but with impedance to vertical flow of varying degrees. Direct recharge would move vertically and horizontally and accrue to groundwater storage in the manner that streamflow from Deer Creek and irrigation conveyances recharge the underlying aquifer system under existing conditions. This conceptualization is reflected in numerical modeling used to evaluate benefits of recharge and the 10-percent leave-behind components of the Project (see Appendix H).

Groundwater Levels

Groundwater levels near the Project have been measured on a semi-annual basis by the DWR and cooperating agencies. Long-term hydrographs for wells in the vicinity of the Project show that groundwater levels have decreased as much as 100 feet since the 1940s (Figure 7 of Appendix H1). The regional groundwater decline was somewhat arrested by the availability of CVP water starting in the 1960s; however, CVP water is not available in the immediate vicinity of the Project. Groundwater levels continue to decrease inPID.

Ground Water Quality

In the northern portion of the Tule Subbasin, groundwater is characterized as calcium bicarbonate (USGS, 1968), while the southern portion is sodium bicarbonate (USGS, 1963). Concentrations of total dissolved solids (TDS) typically range from 200 to 600 milligrams per liter (mg/L), which is satisfactory for a wide range of agricultural uses. TDS values of shallow groundwater in poorly drained areas are as high as 30,000 mg/L (USGS, 1995), exceeding all beneficial uses. The state Department of Drinking Water, which monitors Title 22 water quality standards for domestic uses, reports TDS values in 65 wells ranging from 20 to 490 mg/L, with an average value of 256 mg/L. The eastern side of the Tule Subbasin, including areas near the Project location, have occurrences of elevated nitrate.

The groundwater quality characteristics of the Deer Creek/White River Watershed vary from east to west. In general, water quality on the east side of the valley floor in this area may be of poor quality where nitrate, phenols, and salts are present in varying concentrations and locales. On the westerly side of the watershed, groundwater quality may also have unfavorable characteristics including elevated arsenic concentrations exceeding the Title 22 Maximum Contaminant Level (MCL) (10 µg/L). Arsenic is naturally occurring and commonly found in drinking water sources in California. More groundwater sources exceeded the Title 22 MCL after the state raised the standard from 50 to 10 µg/L in 2008.

Groundwater quality within the Project area is generally good and complies with Title 22 drinking water standards. Samples of groundwater were obtained from fourteen (14) existing wells in the area of the Project and analyzed for quality constituents of concern and compared

against primary and secondary Title 22 drinking water quality standards (RWQCB, 2016). (Appendix H-1 pages 7-9). The test results demonstrated that groundwater within the Project site met Title 22 standards. Groundwater quality from these wells is considered most representative of the quality of water to be recovered from the Project operations together with recharge water from the FKC. (Appendix H-1, page 8).

Surface Water Quality

Surface water quality in the Tulare Lake Basin is generally good, with excellent quality exhibited by most eastside streams (RWQCB, 2004). Common water quality issues are a result of runoff from direct discharge from industrial and commercial activities, resource withdrawal, leaking sewer infrastructure, and illicit dumping during wet weather conditions. Further potential sources of polluted water within the county include past waste disposal practices, agricultural chemicals, and fertilizers applied to landscaping. Characteristic water pollutant contaminants include: sediments, hydrocarbons and metals, pesticides, nutrients, bacteria, and trash.

Irrigated agriculture accounts for most water used in the Tulare Lake Basin. Agricultural drainage, depending on management and location, carries varying amounts of salts, nutrients, pesticides, trace elements, sediments, and other by-products to surface and ground waters (RWQCB, 2004).
The State Water Resources Control Board (SWRCB), in compliance with the Clean Water Act, Section 303(d) (RWQCB, 2011), prepared a list of impaired water bodies in the State of California. The list was approved by the U.S. Environmental Protection Agency (EPA) in 2011. Deer Creek is listed as a Category 5 water body, impaired by an unknown toxicity (303(d) 2011) (RWQCB, 2011). Category 5 criteria indicate a water segment where standards are not met and a Total Maximum Daily Load is required, but not yet completed (RWQCB, 2011).

The water from the San Joaquin River that is delivered via the FKC is considered of excellent quality. The U.S. Bureau of Reclamation (USBR) maintains guidelines for the quality of any water to be introduced into the FKC that doesn't originate from the San Joaquin River (USBR, 2008). These guidelines specify that any water introduced into the FKC must meet Title 22 State drinking water quality standards (the Domestic Water Quality and Monitoring Regulations specified by the State of California, Health and Safety Code (Sections 4010- 4037), and Administrative Code (Sections 64401 et seq.), as amended). There is allowance in the guidelines for the introduction of water that may exceed these standards for certain constituents (typically inorganic constituents) but they do not allow any impairment that rises to the level of limiting any beneficial use of the water in the FKC.

Overdraft

Over pumping of groundwater and chronic water level declines in the Tule Subbasin and in other parts of the San Joaquin Valley have induced land subsidence due to deep compaction of fine-grained units . Areas most vulnerable to subsidence are where pumping occurs beneath the Corcoran Clay, a widespread and distinctive lacustrine clay unit present beneath much of western and central San Joaquin Valley. Land subsidence beneath portions of the Tule Subbasin of 12 to 16 feet from 1926 to 1970 was reported by the United States Geologic Survey (USGS, 1984).

Between 2007 and 2011, an additional 0.5 to 1 foot of subsidence in the Project area occurred due to reduced availability of surface water supplies (LSCE, 2014). More recently, subsidence measurements taken May of 2015 to September 2016 measured between 15 and 20 inches of subsidence on the FKC at milepost 102.7 near the project area (FWA, 2017). Subsidence is expected to be a continuing problem for the region and a focus of sustainability planning by local agencies, including PID and DEID, under SGMA.

Overdraft for the Tulare Lake Hydrologic Region has been projected at 820,000 AF per year (Tulare County, 2012). The Tule Subbasin is one of six major subbasins in this hydrologic region. The estimated irrigation demand for the DEID is approximately 145,600 AFY. To meet agricultural demand, it is estimated that between 35,000 and 40,000 acre feet is pumped by private landowner wells (P&P, 2008). PIDhas a total irrigated demand of 157,600 AFY, while the District's total water sold to growers averages only 21,600 AFY. The 136,000 AFY deficit is assumed to be pumped from private groundwater wells.

The Tule Subbasin has been identified by DWR as a basin in critical condition of overdraft. As defined in SGMA, a basin is identified as in critical overdraft "when continuation of present water management practices would probably result in significant adverse overdraft-related environmental, social, or economic impacts.[51]" As a consequence, the Tule Subbasin is required to be managed under a groundwater sustainability plan (GSP), or coordinated plans, by January 31, 2020.

Local agencies within the Tule Subbasin have formed Groundwater Sustainability Agencies (GSA) charged with preparation of a GSP, or multiple coordinated plans. A GSP must include "[m]easurable objectives, as well as interim milestones in increments of five years, to achieve the sustainability goal in the basin within 20 years of the implementation of the plan[52]." PID and DEID have been designated as exclusive GSAs for their respective service areas[53] and have the authorities and powers granted under SGMA to conduct a broad range of actions to sustainably manage groundwater resources within the Tule Subbasin.

Flooding

Portions of the Project area are located within the 100-year flood plain of Deer Creek (Figure 1-4). The 100-year flood is defined as a flood flow that has a 1 percent chance of being equaled or exceeded in any given year (FEMA, 2009). 100-year flood zones are located throughout southern Tulare County from a number of waterways, including the White and Tule Rivers, Deer Creek, and the FKC (FEMA, 2009). A portion of the Project area is within the 100-year flood plain of Deer Creek.

Regulatory Framework

Federal

Clean Water Act

The Clean Water Act (CWA) is intended to restore and maintain the chemical, physical, and biological integrity of the nation's waters (33 CFR 1251). The regulations implementing the CWA protect waters of the U.S. including streams and wetlands (33 CFR 328.3). The CWA requires states to set standards to protect, maintain, and restore water quality by regulating point source and some non-point source discharges. Under Section 402 of the CWA, the National Pollutant Discharge Elimination System (NPDES) permit process was established to regulate these discharges.

The National Flood Insurance Act (1968)

[51] California Department of Water Resources. 2003. California's Groundwater Bulletin 118 Update 2003. Bulletin 118-80. 246 p. Oct 2003.
[52] Water Code § 10727.2(b)(1)
[53] DWR Website Accessed December 2016: http://water.ca.gov/groundwater/sgm/gsa_table.cfm

This Act makes available Federal subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRM) that can be used for planning purposes.

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps that identify land areas subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection is established by FEMA, with the minimum level of flood protection for new development determined to be the 1-in-100 annual exceedance probability (AEP) event (i.e., the 100-year flood event). Specifically, where levees provide flood protection, the levee crown is required by FEMA to have 3 feet of freeboard (levee height) above the 1-in-100-AEP water surface elevation, except near a structure such as a bridge, where the levee crown must have 4 feet of freeboard for a distance of 100 feet upstream and downstream from the structure.

Executive Order 11988

Executive Order 11988 (Floodplain Management) addresses floodplain issues related to public safety, conservation, and economics. It generally requires Federal agencies constructing, permitting, or funding a project in a floodplain to:

- avoid incompatible floodplain development,
- be consistent with the standards and criteria of the National Flood Insurance Program, and
- restore and preserve natural and beneficial floodplain values.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) process, established by the CWA, is intended to meet the goal of preventing or reducing pollutant runoff. Projects involving construction activities (e.g., clearing, grading, or excavation) with land disturbance greater than 1 acre must file a Notice of Intent (NOI) with the applicable California Regional Water Quality Control Board (RWQCB) to indicate the intent to comply with the State General Permit for Storm Water Discharges Associated with Construction Activity (General Permit). This permit establishes conditions to minimize sediment and pollutant loading and requires preparation and implementation of a Storm Water Pollution Prevention Plan prior to construction.

State

State Water Resources Control Board

The State Water Resources Control Board (SWRCB), located in Sacramento, is the agency with jurisdiction over water quality issues in the State of California. The SWRCB is governed by the Porter-Cologne Water Quality Act (Division 7 of the California Water Code), which establishes the legal framework for water quality control activities by the SWRCB. The intent of the Porter-Cologne Act is to regulate factors which may affect the quality of waters of the State to attain the highest quality which is reasonable, considering a full range of demands and values. Much of the implementation of the SWRCB's responsibilities is delegated to its nine Regional Boards. The Project site is located within the Central Valley Region.

Sustainable Groundwater Management Act of 2014[1]

The California Legislature recently enacted the Sustainable Groundwater Management Act of 2014 ("Act"). The Act provides authority for local agency management of groundwater, and requires implementation of plans to meet the goal of groundwater sustainability established by the Act within basins of high- and medium-priority which includes the basin underlying the Authority (Groundwater Sub-Basin number 5-22.13 (Tule Basin), within the Tulare Lake Hydrologic Region Tule is considered high priority), The Act's goal of sustainability is met by implementation of sustainability plans that identify and cause implementation of measures targeted to ensure that the applicable basin is operated within its safe yield. (Water Code § 10721(t)). Safe yield is defined as the maximum quantity of water that can be withdrawn annually from the groundwater supply without causing an undesirable result, and includes within the definition of "undesirable result" chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply and significant and unreasonable reduction in groundwater storage. (Water Code § 10721(w)). The Act recognizes that fallowing of agricultural lands and reduction of pumping may be required to achieve groundwater sustainability. (Water Code §§ 10726.2(c), 10726.4(a)).

Regional Water Quality Board

The Regional Water Quality Control Board (RWQCB) administers the NPDES storm water-permitting program in the Central Valley region. Construction activities on one acre or more are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity (General Construction Permit). The General Construction Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The plan will include specifications for Best Management Practices (BMPs) that will be implemented during project construction to control degradation of surface water by preventing the potential erosion of sediments or discharge of pollutants from the construction area. The General Construction Permit program was established by the RWQCB for the specific purpose of reducing impacts to surface waters that may occur due to construction activities. BMPs have been established by the RWQCB in the California Storm Water Best Management Practice Handbook (2003), and are recognized as effectively reducing degradation of surface waters to an acceptable level. Additionally, the SWPPP will describe measures to prevent or control runoff degradation after construction is complete, and identify a plan to inspect and maintain these facilities or project elements. (Stats, 1913, CH. 586): California created a system of appropriating surface water rights (rivers and streams) through a permitting process in 1913 (Stats, 1913, CH. 586) but groundwater has never had any statewide regulation prior to 2014 (see SGMA below). Groundwater management needs are identified at the local level and may be directly resolved at the local level. If groundwater management needs cannot be directly resolved at the local level, additional actions such as enactment of ordinances by local governments, passage of laws by the Legislature, or decisions by the courts may be necessary to resolve the issues.

AB3030 (Stats. 1992, CH. 947)

The most significant legislation regarding groundwater management was passed in 1992. AB3030 (Stats. 1992, CH. 947) greatly increased the number of local agencies authorized to develop a groundwater management plan and detailed a common framework for management by local agencies. AB 3030, codified in Water Code Section 10750 et seq., provides for the formulation and adoption of a plan for an identified groundwater basin. Such plans must include the cooperation and

[1] CA.Gov, California Groundwater website, general information and link to Sustainable Groundwater Management Act found here: http://www.water.ca.gov/cagroundwater/legislation.cfm

involvement of all holders of water rights and the various water users to be adopted. Upon adoption of a plan and with a majority vote in favor of the proposal in a local election, the agency can fix and collect fees and assessments for groundwater management. There is no Tulare Lake Basin Groundwater Plan or other coordinated county-wide effort to manage groundwater resources[54].

Sustainable Groundwater Management Act (SGMA)

On September 16, 2014 Governor Edmund G. Brown Jr. signed historic legislation to strengthen local management and monitoring of groundwater basins most critical to the state's water needs. The three bills, SB 1168 (Pavley) SB 1319 (Pavley) and AB 1739 (Dickinson) together makeup the Sustainable Groundwater Management Act. The Sustainable Groundwater Management Act comprehensively reforms groundwater management in California. The intent of the Act is to place management at the local level under state oversight. Under the Act, the state will have direct oversight of how groundwater basins are managed at the local level and may intervene to manage basins when local agencies fail to take appropriate responsibility. The implementation of the Act will occur over the next several years including management under a groundwater sustainability plan by January 31, 2020 with the goal of achieving sustainability goals within 20 years.[55][56]

California Government Code 65302 (d)

This regulation pertains to the establishment of a local general plan conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, river and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. That portion of the conservation element including waters shall be developed in coordination with any County-wide water agency and with all district and city agencies which have developed, served, controlled or conserved water for any purpose for the County or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or County. The conservation element may also cover:

(1) The reclamation of land and waters.
(2) Prevention and control of the pollution of streams and other waters.
(3) Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.
(4) Prevention, control, and correction of the erosion of soils, beaches, and shores.
(5) Protection of watersheds.
(6) The location, quantity and quality of the rock, sand and gravel resources.
(7) Flood control.

Recycled Water Policy

The Water Recycling Act of 1991 (Water Code section 13575 *et seq.*) established a statewide goal to recycle a total of 700,000 acre-feet of water per year by the year 2000 and 1,000,000 acre-feet of water per year by the year 2010.

In February 2009, the State Water Board adopted its Recycled Water Policy (SWRCB Resolution No. 2009-0011), the purpose of which is to increase the beneficial use of recycled water from municipal wastewater sources in a manner that fully implements state and Federal water quality laws. The

[54] Tulare County General Plan 2030 Update, Page 3.6-8
[55] California Drought. Update September 16, 2014. http://ca.gov/drought/topstory/top-story-13.html Accessed January 28, 2015.
[56] California Drought. Update September 16, 2014. http://ca.gov/drought/topstory/top-story-13.html Accessed January 28, 2015.

policy directs the State to rely less on variable annual precipitation and more on sustainable management of surface waters and groundwater, together with enhanced water conservation, water reuse and the use of stormwater. As a part of the new recycled water policy, the Water Board adopted the following four goals for California:

1. Increase the use of recycled water over 2002 levels by at least one million acre-feet per year (AFY) by 2020 and by at least two million AFY by 2030.
2. Increase the use of stormwater over use in 2007 by at least 500,000 AFY by 2020 and by at least one million AFY by 2030.
3. Increase the amount of water conserved in urban and industrial uses by comparison to 2007 by at least 20 percent by 2020.
4. Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.

In the new policy, the Water Board also discussed several practical impacts of the greater use of recycled water in the state. Those impacts include the following:

- Groundwater salt and nutrient control: The Water Board imposed a requirement that consistent salt and nutrient management plans be prepared for each basin and subbasin in California. Such plans must include a significant stormwater use and recharge component.

- Landscape irrigation: The Water Board discussed issues involving the permitting of landscape irrigation projects that use recycled water, including the control of incidental runoff of recycled water.

- Groundwater recharge: The Water Board addressed site-specific approvals of groundwater recharge projects using recycled water, emphasizing that such projects must not lower the water quality within a groundwater basin.

- Chemicals of emerging concern: The Water Board further addressed chemicals of emerging concern (CEC), knowledge of which is currently "incomplete." An advisory panel will advise the Water Board regarding actions involving CECs, as they relate to the use of recycled water.

The wide-ranging ramifications of using recycled water, coupled with the aggressive goals established by the Water Board for such future use in California, demonstrates that the new Recycled Water Policy will have a significant impact on land use activities within the state for many years to come.

Local

Tulare County Flood Control District

The Tulare County Flood Control District is a countywide special district governed by the County Board of Supervisors and oversees the local flood program. The County's Flood Plain Administrator uses FEMA maps to determine areas that are within the 100-year and 500-year floodplains.

Tulare County General Plan Policies

- HS-5: To minimize the possibility for loss of life, injury, or damage to property as a result of flood hazards.

- HS-5.3: Participation in Federal Flood Insurance Program – The County shall continue to participate in the National Flood Insurance Program (NFIP).

- HS-5.1: 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-5.5: Development in Dam and Seiche Inundation Zones – The County shall review projects for their exposure to inundation due to dam failure. If a project presents a direct threat to human life, appropriate mitigation measures shall be taken, including restriction of development in the subject area.

- 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.

- WR-1: To provide for the current and long-range water needs of the County and for the protection of the quality and quantity of surface and groundwater resources.

  - WR-1.5: Expand Use of Reclaimed Wastewater – To augment groundwater supplies and to conserve potable water for domestic purposes, the County shall seek opportunities to expand groundwater recharge efforts.

  - WR-1.8: Groundwater Basin Management – The County shall take an active role in cooperating in the management of the County's groundwater resources.

  - WR-1.11: Groundwater Overdraft – The County shall consult with water agencies within those areas of the County where groundwater extraction exceeds groundwater recharge, with the goal of reducing and ultimately reversing groundwater overdraft conditions in the County.

- WR-2: To provide for the current and long-range water needs of the County and for the protection of the quality of surface and groundwater resources.

  - 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 effect 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-2.7: Industrial and Agricultural Sources – The County shall work with agricultural and industrial concerns to ensure that water contaminants and waste products are handled in a manner that protects the long-term viability of water resources in the County.

- WR-3: To provide a sustainable, long-term supply of water resources to meet domestic, agricultural, industrial, and recreational needs and to assure that new urban development is consistent with available water resources.

  - WR-3.1: Develop Additional Water Sources – The County shall encourage, support and, as warranted, require the identification and development of additional water sources through the expansion of water storage reservoirs, development of groundwater banking for recharge and infiltration, and promotion of water conservation programs, and support of other projects and programs that intend to increase the water resources available to the County and reduce the individual demands of urban and agricultural users.

  - 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 ASSESSMENT

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

Less Than Significant Impact with Mitigation Incorporated. The Project would result in the construction of, among other appurtenant pumps and control features, a new turnout from the Friant-Kern Canal, 500-800 acres of recharge basins with a well field of 16 recovery wells located within the basins; and a 4.5 mile, 48 to 60-inch diameter concrete pipeline to convey water between the Friant-Kern Canal and the recharge basins.

Surface water applied to the recharge basins and in-lieu lands would be delivered via the FKC. The water quality of these deliveries, because of their similar tributary origins, would be comparable to historic water qualities that have naturally recharged the underlying groundwater. Hence no long-term negative impact on groundwater quality would be expected.

However, residual concentrations of nitrates and other agricultural related chemicals (if present) could be mobilized beneath the recharge basins with initial water applications. This would result in short-term impacts to groundwater quality. Assuming a 20 foot thick zone of impacted soils, with soils possessing 15 percent void space, and 30,000 AFY of applied water, the 20 foot zone would be flushed more than 16 times in the first year of recharge, significantly diluting potential impacts to

groundwater. Additionally water quality sampling before the Project, and continued sampling during the first year of operation, would be conducted to verify lack of impacts by this mechanism.

Samples of groundwater taken from existing wells in the area of the Project were obtained and analyzed for quality constituents of concern and compared against Title 22 drinking water quality standards. Twelve wells in total were sampled. The results have been summarized in Table 1 of Appendix H. There were two incidents of arsenic and one for lead that exceeded minimum concentration levels allowed by Title 22. All other constituents in all of the balance of the wells did not show any other chemicals exceeding maximum allowed concentration levels. Zone sampling of at least one well or test well should be performed before casing any of the Project wells. This will allow the well designer to blank-off the section of the casing (the groundwater layer) where arsenic is likely to be present (if any) in order to reduce the potential of having any arsenic in the extracted groundwater. Additionally, all of the well water being returned to the FKC will be mixed together before introduction into the FKC further reducing the potential that any water returned to the FKC will be of unacceptable water quality.

Mitigation Measures:

MM WAT-1: Project recovery wells will be designed to meet water quality criteria by Reclamation. During the construction phase, zone sampling will be performed at prospective well locations and observation wells will be used to evaluate water quality characteristics of aquifer units underlying the Project site. Based on water quality from each recovery well, a blending protocol will be implemented to meet Reclamation requirements for deliveries via the FKC under WAT-2.

MM WAT-2: Well water returned to the FKC will be commingled in the 48 to 60-inch diameter turnout before being discharged into the FKC. Based on the water quality characteristics of individual wells, a protocol will be developed to ensure that blending and mixing through the 4.5-mile long, 48 to 60-inch diameter conveyance to the FKC meets Reclamation's then-current water quality requirements prior to introduction. Ongoing sampling in accordance with Reclamation's then-current water quality requirements will also be performed to ensure compliance.

IX-b) Would the Project 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)?

Less Than Significant Impact with Mitigation Incorporated. The Project would begin a program of long-term groundwater banking where up to 30,000 AFY of surface water is recharged to groundwater. The Project would provide opportunities for partners to bank water during wet years and recover water in normal and dry years. The Project would operate on a 10 percent "leave behind" fraction, where water recovered would not exceed more than 90 percent of the previously recharged water; thus creating a minimum net benefit of at least 10 percent of the banked groundwater. As a result of the Project, groundwater conditions would improve in and around the Project compared to conditions if the Project did not exist. As a result, the Project would not substantially deplete groundwater storage in the Project setting.

A computer model was constructed to simulate baseline conditions without the Project, and showed a probable continual decline in water level elevations under existing conditions (see Appendix H of this document). Additionally, a scenario was generated in which the impacts of the proposed water

banking Project were simulated. The simulation results indicate that the Project will result in a net benefit (increased aquifer storage and higher groundwater elevations) at the end of the 40-year simulation period compared to a Baseline simulation assuming no Project.

Operation of Project recovery wells for dry-year return has the potential to induce drawdown in groundwater levels and reduce yield in wells owned by other groundwater users in the immediate vicinity of the Project. This is a temporary effect that would only occur when recovery wells are running. Pumping interference occurs in all groundwater settings and can be evaluated with analytical tools and numerical flow models and verified through field testing and water level observations. These approaches are detailed in Appendix H and incorporated in the Project development plan.

Existing wells within the estimated extent of recovery well influences will be monitored to verify or modify the projected radius of impact for mitigation as described in this section. During the construction phase, new recovery wells will be tested to provide updated aquifer parameters and to quantify variations in the actual aquifer system. These data will be used to implement the Project monitoring plan in which a principal objective is to monitor interference drawdown by recovery well operations.

The Project includes implementation of a groundwater monitoring program and formation of a Technical Committee that would be comprised of one staff representative each from PID and DEID, and five representative property owners within the project vicinity appointed by the SVBWA board. The South Valley Water Bank Authority will inform stakeholders and interested parties, as defined under SGMA, including neighboring landowners, and others involved in groundwater resource management in the Tule Subbasin of the Bank operations and monitoring program. The monitoring program will incorporate final Best Management Practices (BMPs) specified under SGMA for measurement of groundwater levels and other related parameters including recharge and extraction quantities. In addition, The Technical Committee will monitor the Project operations and the changes to groundwater conditions created by the Bank and will recommend measures that may be taken by the Authority if any condition is determined to be adverse according to the thresholds described below.

Mitigation Measures:

Mitigation Measures. The Project will include implementation of the following measures to mitigate potential significant adverse impacts during recovery pumping:

- **WAT-3**: Before Project recharge operations begin, a groundwater level monitoring program will be funded, designed and implemented by the Authority to establish a baseline to continue to evaluate potential well interference effects during recovery pumping operations. The program shall be designed by a certified hydrogeologist registered with the State of California and shall include a monitoring well layout and location plan based on stratigraphic conditions in the area of Project's recovery wells, consistent with the California Department of Water Resource's Sustainable Groundwater Management Program (December 2016) -- Best Management Practices (BMPs) for the Sustainable Management of Groundwater: Monitoring Protocols, Standards and Sites for monitoring well programs implemented under the Sustainable Groundwater Management Act (SGMA), which BMPs are found at:

- http://www.water.ca.gov/groundwater/sgm/pdfs/BMP_Monitoring_Protocols_Final_2016-12-23.pdf (as may be updated or amended). The program also shall integrate continuous data collection from manual readings and pressure transducers with data loggers for selected wells in the monitoring well network to identify possible well interference effects from Project recovery well pumping consistent with California Water Code sections 10726.4 and 10727.2.

  Further, monitoring wells at targeted aquifer depths shall be installed as part of the program to identify and avoid potentially significant well interference impacts from recovery pumping to any nearby well completed to within similar depth ranges. Monitoring wells shall be installed consistent with Department of Water Resources Bulletin 74-90, which supplements Bulletin 74-81.

  The monitoring program designed by the certified hydrogeologist shall require:

  - Recordation of water levels in selected monitoring wells on a one (1) hour frequency to provide an accurate determination of Project area water levels before recovery pumping operations begin and by which to detect influences of other nearby operating wells. Transducer data from monitoring wells will be downloaded weekly for a one (1) month period before the start of recovery pumping operations to establish water levels in the area.
  - Recordation of water levels in selected monitoring wells on a fifteen (15) minute frequency during Project recovery pumping to provide an accurate determination of the Project's drawdown effects. Transducer data from monitoring wells will be downloaded weekly during Project recovery pumping operations.
  - Timely preparation of reports by the Authority that shall contain (1) water level hydrographs and tabulated water level data for each monitoring well both in the one (1) month before Project recovery pumping, and during Project recovery pumping operations, (2) tabulated groundwater recovery volumes from each recovery well during Project recovery pumping, and (3) documentation of drawdown effects on groundwater levels at each monitoring well. During recovery pumping, reports shall be prepared by the Authority weekly. Any interested party may request the reports and raw data in hardcopy and/or electronic format and the Authority shall comply within ten (10) business days. In addition to the monitoring data collected as described above, the Authority shall assess and integrate as applicable basin-wide monitoring data from the California Statewide Groundwater Elevation Monitoring Program (CASGEM) for the Tule Subbasin.

  A Technical Committee shall be formed by the Authority upon completion of Project construction and prior to initial recharge operations and shall be comprised of one (1) staff representative each from PID and DEID, and five (5) representative landowners within the Project sphere of influence appointed by the Authority's Board of Directors. The Technical Committee shall adhere to these protocols to (1) insure reasonable and sound data acquisition, (2) the timely review of claims, and (3) further minimization of identified significant well interference effects.

The Technical Committee and Authority shall implement the following procedure for assessing and processing any claim received:

- All such claims shall be submitted in writing to the Authority's Project Manager on behalf of the Technical Committee. At a minimum, a claim submitted to the Technical Committee shall comply with the Government Claims Act and shall provide information about the condition of the well and its casing and pumping equipment, and other information relevant to the claim.

- The Technical Committee shall timely meet to review any submitted claim(s) for the further minimization of identified significant well interference effects. In no event shall the Technical Committee meet more than ten (10) business days after such claim has been received for further minimization to compensate for added lift, or more than three (3) business days after a claim has been submitted for further minimization of any identified inadequate suction head for operation of a well pump.

- The Technical Committee shall evaluate any claim in conjunction with recorded and reported data under the groundwater monitoring program described above, as well as any necessary field verification efforts.

- The Technical Committee shall make recommendations to the Authority Board regarding resolution of such claim and the recommendations to the Authority shall be made in writing no later than five (5) business days after the Technical Committee meets to consider such claim.

- The Authority Board shall meet timely and as soon as reasonably practicable to review the Technical Committee's recommendations for such claim. The Authority Board also can meet and act in a special meeting (upon 24 hours public notice) to provide solutions to further minimize any identified significant well interference effects, if needed to address an exigent claim under the circumstances (such as a claim relating to alleged Project drawdown effects that result in inadequate suction head to operate a nearby well pump), before any Technical Committee recommendation is made for a significant well interference claim.

Thresholds of significance requiring mitigation have been quantified with measures that shall be employed and implemented by the Authority, including through recommendations by the Technical Committee:

Table -0-5: WAT-3 Monitoring Program

Threshold	Discussion	Mitigation
< 10 feet induced drawdown	This degree of influence is considered reliably detectable, but generally not a significant impact for the Project setting.	No action. Continue monitoring to determine whether Project influences may induce drawdown to next threshold level.
>10 feet induced drawdown	This degree of influence may cause significant added cost in operating high capacity wells over an irrigation season.	**Added Lift**: Authority shall timely compensate well owner for added lift no later than thirty (30) days after a claim is approved by the Authority Board. A written protocol for reasonable documentation and review of significant well interference claims will be developed and managed by the Technical Committee and approved by the Authority.
>20 feet induced drawdown	This degree of influence may pose operational problems by reducing the margin between pumping levels and pump setting depths.	**Added Lift or Other Solutions**: Authority shall timely compensate for added lift no later than thirty (30) days after a claim is approved by the Authority Board. Authority shall timely compensate well owner to lower a pump if induced drawdown by Project recovery wells results in inadequate suction head to operate well pump, or shall timely provide other solutions as identified below to reduce any significant well interference effects to a less than significant level.

The Authority shall employ other measures to further minimize a significant adverse well interference impact resulting in inadequate suction head to operate well pump attributed to the Project recovery pumping to a less than significant level. Such measures, at the Authority's discretion, shall include, but are not limited to the following:

1. Reduce recovery pumping volumes or the rate of groundwater withdrawal, or shut off Project recovery wells to reduce well interference impacts to nearby wells, including

reducing Project recovery pumping volumes as needed to avoid an impact resulting in inadequate suction head to operate a well pump, and extending the Project's recovery pumping operations beyond the target eight (8) month pumping period.

2. Supply well owner's parcel with a different source of equivalent quantity and quality water at no greater cost to an affected well owner, including from Project recovery pumping wells connected via above-ground pipes to the owner's parcel;

3. Lower or replace a well pump; and/or

4. Replace a well.

IX-c) Would the Project 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?

Less Than Significant Impact. The Project would construct 4-to 5-foot deep recharge basins with 1-to 2-foot tall berms over an approximate 500-to 800-acre area. The construction of the basins would alter the existing drainage pattern and could increase the rate of erosion at the site during construction. Erosion and sediment control measures specified in the required Stormwater Pollution Prevention Plan (SWPPP) in accordance with the Clean Water Act, are expected to reduce erosion rates during and after construction to less than significant levels. Therefore, the Project would not significantly alter the existing drainage pattern of the site in a manner which would result in substantial erosion or siltation on or off site.

Drainage patterns would change minimally as a result of Project build-out. The Project would consist of excavating the proposed recharge basin while using the excavated materials to construct a berm around the basin. The Project would not introduce any non-permeable areas that would increase localized run-off. Implementation of erosion control measures as mandated in the Stormwater Pollution Prevention Program would minimize potential impacts to less than significant. A SWPPP will be in place during construction, as described in Impact IX-a. Therefore, any impacts regarding the substantial alteration of existing drainage patterns will be less than significant.

IX-d) Would the Project 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?

Less Than Significant Impact with Mitigation Incorporated. The Project would construct 4-to 5 foot deep recharge basins with 1 to 2-foot tall berms over an approximate 500 to 800 acre area.. The Project would not substantially alter the existing drainage pattern of the site or area in a manner which would result in flooding on- or off-site. Pursuant to federal regulations at 44 CFR Section 60.3, FEMA will not allow changes to the flood plain that result in an increase of more than 1 foot above the Base Flood Elevation due to new construction, cumulatively. Any changes to the Base Flood Elevation will require approval from FEMA and the local agency. Therefore, there will be no impact to adjacent, upstream, or downstream property owners. Impacts from surface runoff to result in flooding on or off site are less than significant.

Portions of the Project area, including portions of the recharge basins, fall within a 100-year flood zone. The 100-year flood is defined as a flood flow that has a 1 percent chance of being equaled or exceeded in any given year (FEMA, 2009). Special consideration should be taken in the engineering and construction of the berms such that the recharge basins are constructed in a way to capture flows to the extent that the basins are capable, thereby reducing inundation off-site, and in a manner that protect the berms from failure from a 100-year flood.

Mitigation Measure:

MM WAT-4: Specific engineering techniques will be incorporated into the design of the recharge basin berms as would be recommended by the geo-technical report prepared prior to design to protect the recharge basins from 100-year flood related failure. Techniques may include shallower outside slopes with rock rip-rap, higher level compaction of berms, deeper key-ways at the outside toe of slope or other appropriate equivalent measures.

Therefore, outside of typical groundwater banking operations, the Project would not significantly alter the site's existing drainage pattern in a manner which would result in flooding on or off-site, with mitigation Incorporated.

IX-e) Would the Project 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?

Less Than Significant Impact. The Project would capture and recharge surface water up to 30,000 AFY. Additionally, rain that falls within the proposed recharge basins will be captured and recharged to groundwater. The basins will be constructed using materials, including existing topsoil, which will not provide substantial additional sources of polluted runoff. Therefore, the impacts of the Project are considered less than significant. Any impacts regarding the creation or contribution to runoff water that would potentially exceed the capacity of existing stormwater drainage systems have been discussed in the impact analysis for Impact IX-c. Any impacts would be less than significant.

IX-f) Would the Project otherwise substantially degrade water quality?

Less Than Significant Impact with Mitigation Incorporated. Surface water applied to the recharge basins and in-lieu lands would be delivered via the FKC. The water quality of these deliveries, because of their similar tributary origins, would be comparable to historic water qualities that have naturally recharged the underlying groundwater.

Mitigation Measure:

See WAT-1 and WAT-2. This impact would be less than significant after mitigation. Impacts of the Project to substantially degrade water quality are considered less than significant.

Any impacts to water quality have been discussed in the impact analysis for Impact IX-a. Any impacts would be less than significant.

IX-g) Would the Project 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?

No Impact. No housing will be developed as a direct or indirect result of the project. Therefore, there will be no impact. (See **Figure 1-4 Tulare County Digital Flood Insurance Rate Map**)

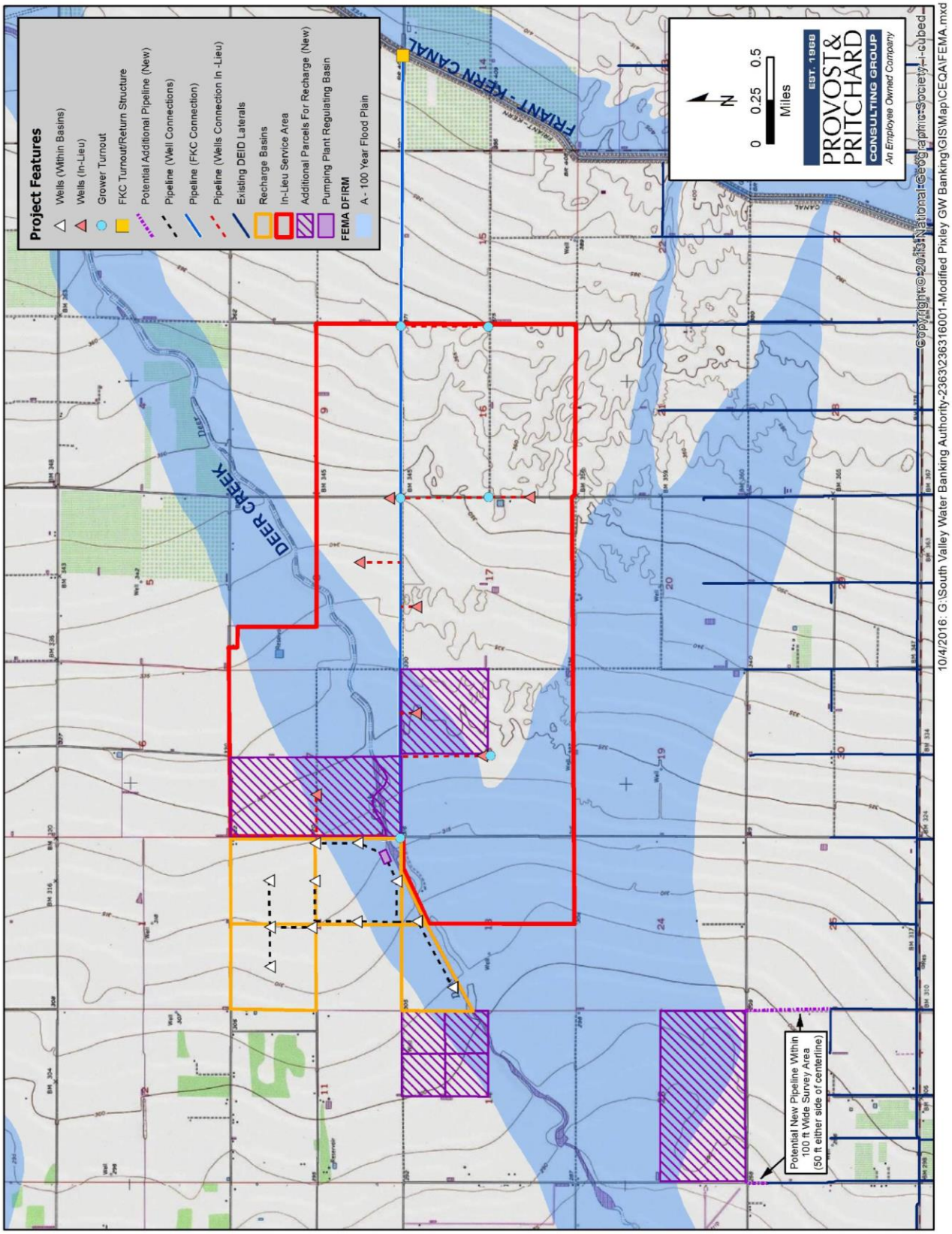


Figure 0-2 Tulare County Digital Flood Insurance Rate Map (DFIRM)

IX-h) Would the Project place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Less Than Significant Impact with Mitigation Incorporated. Portions of the Project area, including portions of the recharge basins, fall within a 100-year flood zone. The 100-year flood is defined as a flood flow that has a 1 percent chance of being equaled or exceeded in any given year (FEMA, 2009). Recharge basins, which consist of 3 to 4 foot deep excavations with 1 to 2-foot tall berms, will be constructed. These structures would be constructed for the purpose of capturing surface water deliveries. The redirection of flood flows into the basins would reduce downstream inundation. Special consideration should be taken in the engineering and construction of the berms such that the recharge basins are constructed to capture flows to the extent that the basins are capable, and in a manner that protect the berms from failure from a 100-year flood.

Mitigation Measure:

See WAT-2. This impact would be less than significant after mitigation.

As discussed in the analysis of Impact IX-g, although a portion of the Project site is located within a 100-year flood hazard area, the Project does not include any structures that would impede or redirect flood flows. Therefore, there would be no impact.

IX-i) Would the Project 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?

No Impact. According to a dam failure inundation map of Tulare County, prepared by the Tulare County Office of Emergency Services, the Project site is not located within an inundation area (Tulare County, 2011). As such the Project would not expose people or structures to a significant risk of loss, injury or death involving flooding. Furthermore, water levels within the excavated recharge ponds will be kept at or below grade, reducing the potential for flooding. Therefore, any impacts would be less than significant.

Figure 3.6-5 (Flood Hazards) of the recirculated Draft EIR for the Tulare County Revised General Plan Update shows that the Project is not located in a Dam Inundation Area[57]. Therefore, there would be no impact.

IX-j) Would the Project expose people or structures to inundation by seiche, tsunami, or mudflow?

No Impact. The Project area is located on nearly flat topography, with no nearby bodies of water, and is separated from the Pacific Ocean by the Coast Range and approximately 100 miles. Therefore, inundation by seiche, tsunami, or mudflow are not significant hazards to the site.

Seiche waves are standing waves created in an enclosed or partially enclosed body of water such as lakes, bays, harbors and bathtubs. Seiche waves are stationary in the horizontal plane and do not progress forward. The waves move up and down, but not forward like wind waves at sea. While the recharge basin may hold up to 5-6 feet of water below existing grade, such would rarely be the

[57] ESA Associates. Environmental Impact Report, Recirculated Draft, Tulare County General Plan 2030 Update. February 2010. Figure 3.6-5

case except for infrequent occasions in a year of above average precipitation. Given this infrequency, the "nil" earthquake sensitivity of Tulare County and given the design of the basin will provide for one foot of freeboard to the top of the levee, it is unlikely that standing waves of significant amplitude would occur causing any water to leave the basin. The nearest other large body of water is Lake Success, a reservoir of Sierra Nevada Mountain run-off created by Success Dam, is located approximately 20 miles to the northeast of the Project area at the base of the foothills east of Porterville. Due to the significant distance and topography of the area between the lake and the Project site, there would be no potential for seiche at the Lake to effect the Project site. Because the Project site is approximately 140 miles inland from the Pacific Coast and separated from the Coast by the Coastal Mountain Range, the potential for a tsunami to affect the site is not likely. There would be no impact.

X. LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

BASELINE CONDITIONS

Environmental Setting

The Project site is located in unincorporated, rural southern Tulare County approximately 7 miles southeast of Pixley, 6.5 miles southwest of Terra Bella, 6 miles northeast of Earlimart and 7 miles northwest of Ducor. The Project Area consists of rural agricultural land and is bisected by Deer Creek and is adjacent to the Friant-Kern Canal. Tulare County lies south of the Sacramento-San Joaquin Delta, and is comprised of 4,189 square miles. The County is bordered by Fresno County to the north, Kings County to the west, Kern County to the south, and Inyo County to the east.

The area has historically been used for agricultural cultivation and associated infrastructure, including irrigation related tail water and regulating ponds. The Project is designated Valley Agricultural within the Rural Valley Lands Plan area, as identified in the Tulare County General Plan[58]. Land uses surrounding the Project site are predominately agricultural and rural residential.

The RVLP utilizes five exclusive agriculture (AE) zones, each requiring a different minimum parcel size (ranging from five to eighty acres). These zones are as follows: AE, AE-10, AE-20, AE-40 and AE-80. The majority of land in the RVLP area is zoned AE-40[59].

The County of Tulare General Plan designates the majority of the Project site as AE-40 Agricultural Zone. The remainder of the project is zoned AE-20.

No forest or timber land is present at the Project site or in the Project vicinity.

[58] Tulare County General Plan 2030 Update, Figure 4-1.
[59] Tulare County General Plan 2030 Update Recirculated Environmental Impact Report, Page 3.1-7

Regulatory Setting

Federal

There are no Federal regulations related to land use that are applicable to this Project because it is not taking place on lands administered by a Federal agency. However, because Federal grant funds are helping to pay for the Project, the Project is subject to the National Environmental Quality Act in addition to CEQA. (See Introduction for further information.)

National Environmental Policy Act
There are no Federal regulations relating to aesthetics that are applicable to the Project or the Project site.

State

This Project is being evaluated pursuant to CEQA; however, there are no state regulations, plans, programs, or guidelines associated with land use planning that are applicable to the Project.

Local

Tulare County General Plan Policies

- PF-1: To provide a planning framework that promotes the viability of communities, hamlets, and cities while protecting the agricultural, open space, scenic, cultural, historic, and natural resource heritage of the County.
- LU-1: To encourage the overall economic and social growth of the County while maintaining its quality of life standards and highly efficient land use.
- LU-2: To provide for the long-term conservation of productive and natural resource lands including agricultural, foothill, mountain, and riparian areas and to accommodate services and related activities that support the continued viability and conservation resource lands.
- LU-2.1: Agricultural Lands – The County shall maintain agriculturally designated areas for agriculture use by directing urban development away from valuable agricultural lands to cities, unincorporated communities, hamlets, and planned community areas where public facilities and infrastructure are available.
- LU-2.5: Agricultural Support Facilities – The County shall encourage beneficial reuse of existing or vacant agricultural support facilities for new businesses (including non-agricultural uses).
- RVLP-1: To sustain the viability of Tulare County's agriculture by restraining division and use of land which is harmful to continued agricultural use of non-replaceable resources.

Tulare County Zoning Ordinance

Section 9.6 "AE-20" Exclusive Agricultural Zone, 20 Acre Minimum

"Purpose: AE-20 Zone is an exclusive zone for intensive agricultural uses and for those uses which are necessary and integral part of the agricultural operation. The purpose of this zone is to protect the general welfare of the agricultural community from encroachments of unrelated agricultural uses which, by their nature, would be injurious to the physical and economic well-being of the agricultural community. It is also the purpose of this zone to prevent or to minimize the negative interaction

between various agricultural uses. A related purpose of this zone is to disperse intensive animal agricultural uses to avoid air, water, or land pollution otherwise resulting from compact distributions of such uses. The minimum parcel size permitted to be created in this zone is, with certain exceptions, twenty (20) acres."

Section 9.7 "AE-40" Exclusive Agricultural Zone, 40 Acre Minimum

"Purpose: The AE-40 Zone is an exclusive zone for intensive and extensive agricultural uses and for those uses which are a necessary and integral part of intensive and extensive agricultural operations. The purpose of this zone is as follows: (1) To protect the general welfare of the agricultural community from encroachments of unrelated agricultural uses which, by their nature, would be injurious to the physical and economic well-being of the agricultural community and the community at large. (2) To prevent or minimize the negative interaction between various agricultural uses. (3) To prevent or minimize land use conflicts or injury to the physical or economic well-being of urban, suburban, or other non-agricultural uses by agricultural uses. (4) To disperse intensive animal agricultural uses to avoid air, water, or land pollution otherwise resulting from compact distributions of such uses. (5) To provide for a minimum parcel standard which is appropriate for areas where soil capability and cropping characterizes are such that a breakdown of land into units of less than forty (40) acres would adversely affect the physical and economic well-being of the agricultural community and community at large. (6) To function as a holding zone within Urban Area Boundaries as designated by the General Plan whereby land may be retained in agricultural use until such time as conditions warrant conversion of such land to urban use. The minimum parcel size permitted to be created in this zone is, with certain exceptions, forty (40) acres."

IMPACT ASSESSMENT

X-a) Would the project physically divide an established community?

No Impact. The 4,706-acre Project Area is located in a predominately agricultural landscape in unincorporated area of southern Tulare County. The nearest established community is Earlimart (Census Designated Place), is located approximately 6 miles to the southwest of the Project area. Other communities including Pixley, Ducor and Terra Bella are located approximately equidistant from the Project site as Earlimart. The Project will not physically divide any established community. There will be no impact.

X-b) Would the project Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

No Impact. The Project area is located within unincorporated Tulare County. Tulare County General Plan and Zoning designates the lands in the Project area as for Exclusive Agriculture (40 and 20 acre minimums). See **Figure 1-1** County Zoning Map.

The proposed groundwater banking infrastructure, including a new turnout from the Friant-Kern Canal, pipelines, control facilities, groundwater recovery wells, recharge basins and "in-lieu" banking acreage, support agriculture in the Project area and vicinity and are consistent with the General Plan designations and zoning for Tulare County found within Project area. The project would not conflict

with any applicable land use plans, policies, or regulations of an agency with jurisdiction over the project. There is no impact.

X-c) Would the project Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The Recovery Plan for Upland Species in the San Joaquin Valley identifies 94 public and conservation lands within their planning area. The closest conservation land to the Project site is the Pixley Vernal Pools Preserve; a private land area located approximately 2 miles north of the Project site[60]. The project will not conflict with any adopted habitat conservation plans or natural community conservation plans. Therefore, there would be no impact.

[60] U.S. Fish and Wildlife Service, Region 1. Recovery Plan for Upland Species in the San Joaquin Valley, Figure 04. http://esrp.csustan.edu/gis/rp/lom.html Accessed March 5, 2015.

XI. MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

BASELINE CONDITIONS

Environmental Setting

Tulare County is divided into two major physiographic and geologic provinces: the Sierra Nevada Mountains encompassing the majority of the eastern portion of the County and the Central Valley encompassing the majority of the western portion. The foothill area of the County lies between these two regions and is essentially a transition area. The Project site is located within the Central Valley region in the southern portion of the County. The central and western parts of the County are underlain by marine and non-marine sedimentary rocks. The Central Valley is basically a flat, alluvial plain, with soil consisting of material deposited by the uplifting of the mountains[61].

Economically, the most important minerals that are extracted n Tulare County are sand, gravel, crushed rock, and natural gas. Aggregate resources are the most valuable mineral resources in the County because they are essential to constructing roads, buildings, and providing for other infrastructure needs. There are three streams that have provided the main source of high quality sand and gravel in Tulare County; the Kaweah River, Lewis Creek and the Tule River. The highest quality deposits are located at the Kaweah and Tule Rivers. Other sources of construction material are also mined in the hard rock deposits of the foothills[62].

The California Department of Conservation, Office of Mine Reclamation (OMR) provides mine information to the public through the Mines Online (MOL) website. The website is an interactive web map designed to provide information such as mine name, operation status, commodities sold, and mine locations. According to the MOL geographic information system (GIS), the closest mine to the Project Site is an active sand and gravel mine (Mine ID: 91-54-0019) located approximately five miles northeast of the pipeline connection to the Friant-Kern Canal[63].

The California Department of Conservation, Division of Oil, Gas & Geothermal Resources (DOGGR) Well Finder provides information on oil wells. The DOGGR Well Finder indicates there are two oil wells within the In-Lieu Service Area. Both wells have been plugged and one well (API: 10720020) is active and the other well (API: 10700275) is inactive. There are also nine oil wells in close proximity to the project site, eight of which have been plugged and are inactive. One well (API: 10700277)

[61] Tulare County General Plan 2030 Update Recirculated Environmental Impact Report, Page 3.7-4
[62] Ibid, Page 3.7-9.
[63] State of California, Department of Conservation, http://maps.conservation.ca.gov/mol/mol-app.html

located approximately one mile east of the pipeline connection to the Friant-Kern Canal has been plugged and is active[64].

Regulatory Setting

Federal

There are no Federal regulations pertaining to mineral resources relevant to the Project.

State

California Surface Mining and Reclamation Act of 1975
Enacted by the State Legislature in 1975, the Surface Mining and Reclamation Act (SMARA), Public Resources Code Section 2710 et seq., insures a continuing supply of mineral resources for the State. The act also creates surface mining and reclamation policy to assure that:

- Production and conservation of minerals is encouraged;
- Environmental effects are prevented or minimized;
- Consideration is given to recreational activities, watersheds, wildlife, range and forage, and aesthetic enjoyment;
- Mined lands are reclaimed to a useable condition once mining is completed; and
- Hazards to public safety both now and in the future are eliminated.

Areas in the State (city or county) that do not have their own regulations for mining and reclamation activities rely on the Department of Conservation, Division of Mines and Geology, Office of Mine Reclamation to enforce this law. SMARA contains provisions for the inventory of mineral lands in the State of California. The State Geologist, in accordance with the State Board's Guidelines for Classification and Designation of Mineral Lands, must classify Mineral Resource Zones (MRZ) as designated below:

- MRZ-1. Areas where available geologic information indicates that there is minimal likelihood of significant resources.
- MRZ-2. Areas underlain by mineral deposits where geologic data indicate that significant mineral deposits are located or likely to be located.
- MRZ-3. Areas where mineral deposits are found but the significance of the deposits cannot be evaluated without further exploration.
- MRZ-4. Areas where there is not enough information to assess the zone. These are areas that have unknown mineral resource significance.

SMARA only covers mining activities that impact or disturb the surface of the land. Deep mining (tunnel) or petroleum and gas production is not covered by SMARA.

The Project site does not fall within any of the State classified Mineral Resource Zones.

[64] State of California, Department of Conservation, http://maps.conservation.ca.gov/doggr/index.html#

California Laws for Conservation of Petroleum and Gas
Division 3 Section 3000 et seq., of the Public Resources Code includes the California Laws for Conservation of Petroleum and Gas. These regulations include laws relating to the conservation, utilization, and supervision of oil and gas resources[65].

Local

Tulare County General Plan Policies

- ERM-2: To conserve, protect, and encourage the development of areas containing mineral deposits while considering values relating to water resources, air quality, agriculture, traffic, biotic, recreation, aesthetic enjoyment, and other public interest values.
    - ERM-2.1: Conserve Mineral Deposits – The County will encourage the conservation of identified and/or potential mineral deposits recognizing the need for identifying, permitting, and maintaining a 50 year supply of locally available PCC grade aggregate.

- ERM-3.1: To protect the current and future extraction of mineral resources that are important to the County's economy while minimizing impacts of this use on the public and the environment.

IMPACT ASSESSMENT

XI-a) Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. According to the California Department of Conservation's MOL website the closest mine to the Project site is an active sand and gravel mine (Mine ID: 91-54-0019) located approximately five miles northeast of the pipeline connection to the Friant-Kern Canal. Additionally, the California Department of Conservation's DOGGR Well Finder indicates there is one plugged active oil well and one inactive oil well within the project In-Lieu Service Area and one plugged active oil well approximately one mile east of the pipeline connection to the Friant-Kern Canal.

According to the Draft Mineral Land Classification Map for the Joint Groundwater Banking Baseline Study for Tulare County the Project Site is not located within a mineral resource zone.

The In-Lieu Service Area and In-Lieu wells would not affect oil production. Therefore, there would be no impacts.

XI-b) Would the Project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. As noted in response XI-a), the Project Site is not located within a mineral resource zone. Furthermore, The In-Lieu Service Area and In-Lieu wells would not affect oil production. Therefore, there would be no impact.

[65] Tulare County General Plan 2030 Update Recirculated Draft Environmental Impact Report, Page 3.7-3.

XII: NOISE

Would the project result in:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

BASELINE CONDITIONS

Environmental Setting

The Project site is designated Valley Agricultural within the Rural Valley Lands Plan policy of the Tulare County General Plan and consists of 4,706 acres of rural agricultural land and Deer Creek. The area has historically been used for agricultural cultivation including vineyards, orchards and other crops and associated infrastructure including wells, pumps, and tail-water and regulating ponds. The Project site is surrounded by rural agricultural land.

Noise levels generated by farm related equipment ranged from 69 to 100 decibels (dB) at a distance of 50 feet from the equipment according to noise measurements conducted by Tulare County[66]. Due to the seasonal nature of the agricultural industry, there are often extended periods of time when no noise is generated at the Project site, followed by short-term periods of intensive mechanical equipment usage and corresponding noise generation. According to Table 3.5-1 Land Use Compatibility for Community Noise Environment in the Tulare County General Plan Recirculated

[66] Tulare County General Plan Background Report, Pages 8-71 through 8-73

Draft EIR normally acceptable noise exposure for agricultural zoned property is between 50 and 75 day/night average noise level (Ldn). Noise from agricultural equipment is common and generally accepted as part of the ambient conditions in agricultural areas.

Regulatory Setting

Federal

Federal Vibration Policies
The Federal Railway Administration (FRA) and the Federal Transit Administration (FTA) have published guidance relative to vibration impacts. According to the FRA, fragile buildings can be exposed to ground-borne vibration levels of 90 VdB without experiencing structural damage[67]. The FTA has identified the human annoyance response to vibration levels as 75 VdB[68].

Federal Highway Administration (FHWA)
The FHWA has developed noise abatement criteria that are used for Federally funded roadway projects or projects that require Federal review. These criteria are discussed in detail in Title 23 Part 772 of the Federal Code of Regulations.

State

There are no State regulations regarding noise applicable to this Project.

Local

In addition to General Plan requirements, some jurisdictions have established noise ordinances in their municipal codes. Noise ordinances establish limits for which penalties or enforcement action may be taken. Therefore, a noise ordinance generally must not be exceeded; whereas, General Plan limits are to be taken into consideration during the development of a project and may or may not be strictly applied, depending on the particular circumstances of the Project. The Tulare County does not have a Noise Ordinance.

In preparing the noise element to a general plan, a city or county must identify local noise sources and analyze and quantify, to the extent practicable, current and projected noise levels for various sources, including highways and freeways; passenger and freight railroad operations; ground rapid transit systems; commercial, general, and military aviation and airport operations; and other ground stationary noise sources.

The Tulare County conducted noise measurements for several types of equipment used in agricultural operations in the County; the results are summarized in the table below and present a range of levels that may be expected[69]:

[67] Federal Railway Administration, High-Speed Ground Transportation Noise and Vibration Impact Assessment, September 2012.
[68] Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.
[69] Tulare County General Plan Background Report, Pages 8-71 through 8-73

Table 0-6: Noise Measurement for Various Agricultural Equipment

Equipment	50 feet	Other Distances
Wind Machine (Ground Power)	91 to 92 dBA	61 to 71 dBA at 350 feet
Wind Machine (Electric)	73 to 87 dBA	56 to 67 dBA at 350 feet
Diesel Engines on Wells	75 to 85 dBA	
Aerial Application Aircraft	97 to 100 dBA	85 to 88 dBA at 600 feet
Cotton Picker		58 dBA at 500 feet
Larger diesel-powered wheel tractor pulling a 20-foot disk		72 to 75 dBA at 150 feet
Smaller diesel-powered wheel tractor pulling a furrowing appliance	69 tp 79 dBA	
Randall weed sprayer with one cylinder diesel engine	74 to 75 dBA	
FMC Bean 267 engine-driven speed sprayer	92 to 97 dBA	
Aerolan 391 speed sprayer		74 to 76 dBA at 100 to 300 feet

Generally a diesel engine will produce noise levels of 75 to 85 A-weighted noise level (dBA) at approximately 50 feet from the source. Although farming operations occasionally generate significant noise levels, such levels generally do not last more than a few hours at a given location unless a stationary piece of equipment such as a pump master (or engine) is involved. For this reason, significant cumulative noise exposure as defined by Ldn would not generally be expected to result from typical farming operations within Tulare County[70].

The Tulare County General Plan identifies the following maximum acceptable noise levels for various land uses, (excluding agricultural):

Table 0-7 Maximum Acceptable Ambient Noise Exposure for Various Land Uses

Land Use	Suggested Maximum Ldn
Residential – low density	60
Residential – high density	65
Transient lodging	65
Schools, libraries, churches, hospitals	65
Playground, parks	65
Commercial	70
Industrial	75

Measuring and reporting noise levels involves accounting for variations in sensitivity to noise during the daytime versus nighttime hours. Noise descriptors used for analysis need to factor in human sensitivity to nighttime noise when background noise levels are generally lower than in the daytime and outside noise intrusions are more noticeable. Common descriptors include the Community Noise Equivalent Level (CNEL) and the Day-Night Average Level (Ldn). Both reflect noise exposure over an average day with weighting to reflect the increased sensitivity to noise during the evening and night. The two descriptors are roughly equivalent. The CNEL descriptor is used in relation to major continuous noise sources, such as aircraft or traffic, and is the reference level for the Noise Element

[70] Tulare County General Plan Background Report, Page 8-73

under State planning law. The following table includes noise and land use compatibility standards for various land uses as provided in the State of California General Plan Guidelines, 2003.

Table 0-8 Land Use Compatibility for Community Noise Environments

	Community Noise Exposure, L_{dn} or CNEL dB			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential – Low density single family, duplex, mobile homes	<60 (<45 Interior)	55 to 70	70 to 75	>75 (>45 Interior)
Residential – Multiple family	<65 (<45 Interior)	60 to 70	70 to 75	>75 (>45 Interior)
Schools, libraries, churches, hospitals, nursing homes	<70	60 to 75	70 to 80	>80
Industrial, manufacturing, utilities, agriculture	<75	70 to 80	75 to 85	No levels identified

Interpretation: Normally acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally acceptable – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally unacceptable – New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly unacceptable – New construction or development should generally not be undertaken.

Tulare County General Plan Policies

- HS-8: To protect County residents and visitors from the harmful effects of excessive noise while promoting the County economic base.
- HS-8.6: Noise Level Criteria – The County shall ensure noise level criteria applied to land uses other than residential or other noise-sensitive uses are consistent with the recommendations of the California Office of Noise Control (CONC)[71].
- HS-8.13: Noise Analysis – The County shall require a detailed noise impact analysis in areas where current or future exterior noise levels from transportation or stationary sources have the potential to exceed the adopted noise policies of the Health and Safety Element, where there is development of new noise sensitive land uses or the development of potential noise generating land uses near existing sensitive land uses. The noise analysis shall be the responsibility of the project applicant and be prepared by a qualified acoustical engineer (i.e., a Registered Professional Engineer in the State of California, etc.) The analysis shall include recommendations

[71] California. Department of Health Services. Office of Noise Control

and evidence to establish mitigation that will reduce noise exposure to acceptable levels (such as those referenced in Table 10-1 of the Health and Safety Element).

- HS-8.18: Construction Noise – The County shall seek to limit the potential noise impacts of construction activities by limiting construction activities to the hours of 7 am to 7 pm, Monday through Saturday when construction activities are located near sensitive receptors. No Construction shall occur on Sundays or national holidays without a permit from the County to minimize noise impacts associated with development near sensitive receptors.
- HS-8.19: Construction Noise Control – The County shall ensure that construction contractors implement best practices guidelines (i.e., berms, screens, etc.) as appropriate and feasible to reduce construction-related noise-impacts on surrounding land uses.

IMPACT ASSESSMENT

XII-a) Would the Project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact. The Project will involve temporary noise sources associated with general construction activity. Typical construction equipment will include scrapers, excavators, front-end loader, a back hoe, a compactor, a crane, a water truck for dust control, an earthmover and miscellaneous equipment (i.e. pneumatic tools, generators and portable air compressors). During the Project construction, noise from construction activities will contribute to the noise environment in the immediate Project vicinity. Activities involved in construction will generate maximum noise levels, as indicated in Table below, ranging from 79 to 91 dBA at a distance of 50 feet, without feasible noise control (e.g., mufflers) and ranging from 75 to 80 dBA at a distance of 50 feet, with feasible noise control.

Table 0-9: Typical Construction Noise Levels[72]

Type of Equipment	dBA at 50 ft	
	Without Feasible Noise Control	With Feasible Noise Control[1]
Dozer or Tractor	80	75
Excavator	88	80
Scraper	88	80
Front End Loader	79	75
Backhoe	85	75
Grader	85	75
Truck	91	75

[1] Feasible noise control includes the use of intake mufflers, exhaust mufflers and engine shrouds operating in accordance with manufacturers specifications.

The noise levels of construction equipment in **Table 0-9** above are at a distance of 50 feet from the listed equipment. According to the Federal Transit Administration, the noise decibel is reduced on average by 5 decibels for each additional 50 feet, for example the truck at 75 decibels would be heard at approximately 55 decibels at the nearest residence 200 feet from the Project site, due to noise divergence, absorption, diffusion and shielding[73]. Typical construction noise levels shown in Table

[72] US Environmental Protection Agency 1971
[73] FTA Noise and Vibration Manual. Page 2-10.

1-8 above are comparable to noise measurements for various agricultural equipment shown in Table 1-8 and therefore are not expected to increase existing noise levels in the area. Additionally, these activities would be restricted to daytime hours and would be short-term in nature. It is anticipated that all related construction activities and Project operations will comply with the standards set forth by the Noise Standards in the Noise Element of the Tulare County General Plan.

Adherence to the County General Plan policies and adopted noise standards would ensure that any potential impacts related to noise levels would remain less than significant.

XII-b) Would the Project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Vibration is the periodic oscillation of a medium or object. Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, ground borne vibrations may be described by amplitude and frequency. Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS), as in RMS vibration velocity. The PPV and RMS (VbA) vibration velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal and is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings[74].

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. As it takes some time for the human body to respond to vibration signals, it is more prudent to use vibration velocity when measuring human response. The vibration velocity level (L_v) is reported in decibels relative to a level of 1x10-6 inches per second and is denoted as VdB. The typical background vibration-velocity level in residential areas is approximately 50 VdB. Ground borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels[75].

Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. Construction vibrations can be transient, random, or continuous. The approximate threshold of vibration perception is 65 VdB, while 85 VdB is the vibration acceptable only if there are an infrequent number of events per day[76].

The Project would involve temporary vibration sources associated with general construction activity. The Table below describes the typical construction equipment vibration levels.

Table 0-10 Typical Construction Equipment Vibration Levels[77]

Equipment	PPV at 25-feet (in/sec)	RMS at 50 feet
Large Bulldozer	0.031	81
Caisson Drilling	0.031	81
Loaded Trucks	0.027	80

[74] U.S. Department of Transportation, Federal Transit Administration, Transit Noise & Vibration Impact Assessment, May 2006, 2-16 to 12-10.
[75] Ibid.
[76] Ibid.
[77] Ibid.

Vibration from construction activities would be temporary and would not exceed the Federal Transit Administration (FTA) threshold for the nearest residence, approximately 600 feet west of the western boundary of the proposed recharge basins. Any impacts will be less than significant.

XII-c) Would the Project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. Upon completion of construction activities, project operation would not generate a substantial increase in ambient noise levels. Potential noise sources resulting from implementation of the project include noise associated with operation of pumps and periodic vehicular trips for site operation and maintenance. Potential noise sources resulting from project implementation include noise associated with vehicular trips for maintenance/repair activities. Maintenance would involve activities such as clearing debris and dredging recharge basins and vegetation management activities. Maintenance activities would occur infrequently and are not expected to substantially increase ambient noise levels in the area above existing levels without the project. The impact would be less than significant.

XII-d) Would the Project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. As discussed in Impact XII-a, the Project will not create a substantial permanent increase in ambient noise levels in the Project's vicinity that would affect the existing environment. During construction phases the Project could temporarily increase noise levels, however construction is temporary in nature and will comply with the Noise Standards of the Noise Element of the Tulare County General Plan. In addition, there will not be any increase in ambient noise levels in the Project vicinity above existing levels. Therefore, impacts to noise levels will be less than significant..

XII-e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. As discussed in impact Section VIII-e, the Project area is not located within an Airport Influence Area or Land Use Compatibility Zone as identified in the Tulare County Comprehensive Airport Land Use Plan[78]. The nearest public airport is the Porterville Municipal Airport, which is located approximately 9.5 miles to the northeast of the Project area. Therefore, there will be no impact.

XII-f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. As discussed in impact section VIII-f above, there are no private airstrips in the vicinity of the project area. The nearest private airstrip is located at Kramer and Deer Creek (Avenue 64) approximately 2 miles southwest of the Project area, in rural Earlimart. It is anticipated that periodic operations personnel would be required for site inspection, security, maintenance and system monitoring purposes. However, the Project does not include onsite full time staff members to operate the facility. There would be no impact.

[78] Aries Consultants Ltd. Tulare County Comprehensive Airport Land Use Plan. Prepared for the County of Tulare Airport Land Use Commission. December 2012. Figure 1-1.

XIII. POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

BASELINE CONDITIONS

Environmental Setting

According to the California Department of Finance (DOF) population estimates, between 1990 and 2000, Tulare County grew by about 18 percent, an average population growth average of 1.7 percent per year. Between 2000 and 2007 the County experienced an average yearly population growth of 2.2 percent for a total population of 429,010 in 2007. The projected average annual growth rate for Tulare County between 2007 and 2030 is expected to be 2.4 percent. Build-out of the 2030 General Plan will accommodate a total County population of approximately 742,970[79].

Regulatory Setting

Federal

There are no Federal regulations, plans, programs or guidelines associated with population or housing that are applicable to the Project.

State

California Housing Element Law

State law requires each city and county to adopt a general plan for future growth. This plan must include a Housing Element that identifies housing needs for all economic segments and provides opportunities for housing development to meet that need. At the State level, the California Department of Housing and Community Development estimates the relative share of California's projected population growth that could occur in each county in the State based on DOF population projections and historic growth trends. Where there is a regional council of governments, as in Tulare County, the California Department of Housing and Community Development provides the regional

[79] Tulare County General Plan Background Report, Page 2-30

housing need to the council. The council then assigns a share of the regional housing need to each of its cities and counties. The process of assigning shares provides cities and counties the opportunity to comment on the proposed allocations.

The California Department of Housing and Community Development oversees the process to ensure that the councils of governments distribute their share of the State's projected housing need.

Each city and county must update its general plan housing element on a regular basis (typically, every five to eight years). Among other things, including incorporating policies, the housing element must identify potential sites that could accommodate the city's share of the regional housing need. Before adopting an update to its housing element, the city or county must submit a draft to the California Department of Housing and Community Development for review. The department advises the local jurisdiction as to whether its housing element complies with the provisions of California housing element law.

The councils of governments are required to assign regional housing shares to the cities and counties within their regions on a similar five-year schedule. At the beginning of each cycle, the California Department of Housing and Community Development provides population projections to the councils of governments, which then allocate shares to their cities and counties. The shares of the regional need are allocated before the end of the cycle so that the cities and counties can amend their housing elements by the deadline.

Local

County of Tulare General Plan
The General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to City officials making decisions affecting development and the resources of the County's jurisdiction. The General Plan helps to ensure that day-to-day decisions conform to long-range policies designed to protect and further the public interest related to the County's growth and development. The General Plan was most recently updated on August 2012.

Tulare County Association of Governments (TCAG)
A council of governments (COG) acts as an area-wide planning agency. COGs assist local governments with multi-jurisdictional issues such as air quality, transportation, water quality, energy, and housing. TCAG serves this purpose for Tulare County. The primary function of the TCAG is to address regional transportation issues, review documents and proposals that affect environmental issues and it also functions as the State designated Census Data Center Affiliate. TCAG and its member agencies include the County of Tulare and the 8 incorporated cities within Tulare County.

IMPACT ASSESSMENT

XIII-a) Would the Project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. No new homes, businesses or roads are planned as part of the Project. The direct purpose of the Project is to facilitate the opportunity to utilize excess CVP surface water in wet years for agricultural irrigation or bank it and other sources of surface water as groundwater and recover that groundwater in normal and dry years when surface water releases are not available or in

restricted supply for agriculture. Further, the Project will also capture and recharge water from FKC and reduce subsurface groundwater outflow from the DEID through improved water supply conditions in the PID, storage of banked water and groundwater replenishment. All such water is intended by the Project proponent to be utilized for agricultural irrigation purposes. However, because the groundwater basin is not confined to the jurisdictional boundary of thePID, adjacent surrounding irrigation or domestic water purveyors could also likely have some indirect benefits from a rising groundwater table. It would be too speculative to attempt to determine the extent and magnitude of any potential indirect growth inducing effects of this additional groundwater basin supply with any reasonable accuracy.

Construction workers will likely be drawn from the local and regional markets. It is anticipated that periodic operations personnel would be required for site inspection, security, maintenance and system monitoring purposes. However, it is anticipated that such personnel would likely be provided by PID staff. Therefore, the Project is not anticipated to induce significant population growth due to short term construction employment or long term operations. Therefore, there would be no impact.

XIII-b) Would the Project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. No housing or people will be displaced by implementation of the Project. There will be no impact.

XIII-c) Would the Project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. Any impacts regarding the displacement of people have been discussed in Impact XIII-b. There will be no impact.

XIV. PUBLIC SERVICES

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

BASELINE CONDITIONS

Environmental Setting

The nearest fire station is Tulare County Fire Department Battalion 2 Earlimart Fire Station 28 located in Earlimart approximately three and a half miles southwest of the Project site. The Tulare County Sheriff's office in Pixley is located approximately four miles northwest of the Project site.

The closest school is the Saucelito Elementary School located approximately two miles northeast of the Project site. The Pixley Elementary School and the Earlimart Elementary School are located approximately four and five miles northwest and southwest of the Project site respectively.

The closest park is Pixley Park located approximately four miles northwest of the Project site.

The Project site is designated Agricultural within the Rural Valley Lands Plan Area as identified in the Tulare County General Plan and consists of 4,706 acres of rural agricultural land and Deer Creek. The area has historically been used for agricultural cultivation including vineyards, orchards and other crops and associated infrastructure including irrigation ponds.

Regulatory Setting

Federal

***National Fire Protection Association*:**
The National Fire Protection Association (NFPA) is an international nonprofit organization that provides consensus codes and standards, research, training, and education on fire prevention and public safety. The NFPA develops, publishes, and disseminates more than 300 such codes and standards intended to minimize the possibility and effects of fire and other risks. The NFPA publishes the NFPA 1, Uniform Fire Code, which provides requirements to establish a reasonable level of fire safety and property protection in new and existing buildings.

State

California Fire Code and Building Code:
The 2013 California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes regulations to safeguard against hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety and assistance to fire fighters and emergency responders during emergency operations. The provision of the Fire Code includes regulations regarding fire-resistance rated construction, fire protection systems such as alarm and sprinkler systems, fire service features such as fire apparatus access roads, fire safety during construction and demolition, and wildland urban interface areas.

Local

Tulare County General Plan Policies

- PFS-7: To provide adequate fire and law enforcement facilities and services to ensure the safety of County residents and the protection of County property.

- PFS-8: To ensure adequate schools and community facilities are provided and are conveniently located for County residents.

IMPACT ASSESSMENT

XIV-a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

No Impact. The Project would not rely on the addition or alteration of any public services. The Project area is within the southern portion of Tulare County approximately six miles southeast of Pixley, and would utilize existing governmental services provided by Tulare County. No residential or office construction is proposed for this Project. No component of the Project would result in effects to the environment in order for the County to maintain acceptable service ratios, response times or other

performance objectives for any of the following public services as more fully described below. Therefore there will be no impacts to public services:

Fire Protection – The project area is located within the Tulare County Fire Department (TCFD) the nearest county station is Station 28 located approximately three and a half miles southwest of the Project site. No residential or commercial development is identified with this project and no change in existing land use is associated with this project, therefore, no additional services would be required from the TCFD. There would be no impact.

Police Protection – The District is located in the Tulare County Sheriff's Department law enforcement service area. There is a Tulare County Sheriff's office approximately four miles northwest of the Project site. No residential or commercial development or change in existing land use is proposed in this project. The project would not impact existing law enforcement services. There would be no impact.

Schools – The closest school is the Saucelito Elementary School located approximately two miles northeast of the Project site with the Pixley Elementary School and the Earlimart Elementary School being located approximately four and five miles northwest and southwest of the site respectively. The Project itself would not include construction of any residential structures, nor change the existing land use. The Project would not result in an increase of population that would impact existing school facility service levels nor require additional need for school facilities to be expanded. There would be no impact.

Parks – The closest park is Pixley Park located approximately four miles northwest of the Project site. The Project does not propose to add any residential population to the survey area and there will be no permanent day-time employees at the recharge basin sites. As the Project would not induce greater population growth, there would be no need for additional park or recreational services or facilities as a result of Project implementation. There would be no impact.

Other public facilities – The Project would serve to recharge the underlying groundwater basin, reduce groundwater outflow from the DEID and improve water supply conditions within the PID. The Project would not require any additional wastewater or water treatment plants. Furthermore, the Project would not induce greater population growth that would require additional need for expanding public facilities. As such, there would be no impact.

XV. RECREATION

		Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

BASELINE CONDITIONS

Environmental Setting

There are a total of 20 parks and recreation facilities within Tulare County totaling approximately 5,701 acres; 13 are owned and operated by the County, two are State facilities and five are Federal facilities. A number of neighborhood parks, play lots, pocket parks and other recreation facilities are also located within the incorporated cities in the County80. The closest park is Tulare County's Pixley Park located approximately four miles northwest of the Project site on the north edge of the unincorporated community of Pixley.

Regulatory Setting

There are no Federal, State or Local policies or plans regarding recreation that are applicable to this project.

IMPACT ASSESSMENT

XV-a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. As discussed in Impact XIII-a and XIV-a, the Project will not increase the demand for recreational facilities nor put a strain on the existing recreational facilities. The Project will not induce population growth or employ on-site permanent staff. Maintenance, repair, and cleaning crews will service the site on an as-needed basis from the existing labor supply including PID staff. As such, the Project would not induce population growth which would increase the use of existing recreational facilities or cause physical deterioration to be accelerated as a result of the Project implementation. Therefore, there will be no impact.

[80] Tulare County General Plan Background Report, Pages 4-3 and 4-4

XV-b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The Project does not include recreational facilities. As there is no population growth associated with the Project, construction or expansion of nearby recreational facilities will not be necessary. There will be no impact.

XVI. TRANSPORTATION/ TRAFFIC	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☒	☐

BASELINE CONDITIONS

Environmental Setting

The Project site is located in southern rural Tulare County southeast of Pixley. Tulare County has three nearby major regional highways, SR 99, SR 190 and SR 65. The Project site is approximately four miles east of SR 99, approximately eight miles west of SR 65 and approximately 8 miles south of SR 190. The Project Area is bounded and bisected variously by County roadways which each carry rural and agricultural-related traffic.

The Tulare County General Plan Circulation Element establishes a Level of Service "D" or better for its roadway system. The Tulare County Regional Bicycle Transportation Plan does not identify any planned bikeways in the Project vicinity. There are no formal pedestrian facilities on any of the surrounding County roadways. There is no known public transit service provided on any of the County roadways within or adjacent to the Project Area. East Terra Bella Avenue (Avenue 90) approximately 2 miles north of the Project Area is the primary roadway interconnecting Pixley at SR 99 easterly to Terra Bella at SR 65.

There are nine public use airports in Tulare County. The nearest public airport is the Porterville Municipal Airport, which is located approximately 7.5 miles to the northeast of the Project area.

The Union Pacific (UP), Burlington Northern and Santa Fe (BN&SF) and San Joaquin Valley Railroad (SJVRR) all provide freight service to Tulare County while AMTRAK provides passenger service. The closest railroad to the Project site is the Union Pacific Railroad which runs along the SR99 corridor approximately four miles west of the site.

Regulatory Setting

Federal

Several Federal regulations govern transportation issues. They include:

- Title 49, CFR, Sections 171-177 (49 CFR 171-177), governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- 49 CFR 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, address safety considerations for the transport of goods, materials, and substances over public highways.
- 49 CFR 397.9, the Hazardous Materials Transportation Act of 1974, directs the U.S. Department of Transportation to establish criteria and regulations for the safe transportation of hazardous materials.

Federal Aviation Administration
The Federal Aviation Administration (FAA) regulates aviation at regional, public, and private airports. The FAA regulates objects affecting navigable airspace.

State

State of California Transportation Department Transportation Concept Reports
Each District of the State of California Transportation Department (Caltrans) prepares a Transportation Concept Report (TCR) for every state highway or segment portion thereof in its jurisdiction. The TCR usually represents the first step in Caltrans' long-range corridor planning process. The purpose of the TCR is to determine how a highway will be developed and managed so that it delivers the targeted LOS and quality of operations that are feasible to attain over a 20-year period, otherwise known as the "route concept" or beyond 20 years, for what is known as the "ultimate concept".

The Caltrans TCR route concept for SR 99 is a minimum six-lane freeway, which is also consistent with the Interregional Transportation Strategic Improvement Plan for Route 99. The ultimate 2025 Concept is for a six-lane freeway plus auxiliary lanes between off-ramps where appropriate. Route

segment 14 of SR 99 nearest the Project Area currently operates at about LOS of C and is projected to be at LOS F by 2025 under current projected conditions. Upon implementation of the 2025 Concept Plan this segment is projected to operate at LOS C[81].

State Route 65 serves as a north-south corridor on the east side of the Valley. State Route 65 is designated as Segment 6 nearest the Project Area. The route concept and ultimate 2025 Concept for SR 65 is a minimum four-lane expressway. This route segment currently operates at about LOS of D. Upon implementation of the 2025 Concept Plan this segment is projected to operate at LOS B[82].

Local

Tulare County General Plan Policies

- TC-1: To promote an efficient roadway and highway system for the movement of people and goods, which enhances the physical, economic, and social environment while being safe, environmentally friendly, and cost-effective.
    - TC-1.1: Provision of an Adequate Public Road Network – The County shall establish and maintain a public road network comprised of the major facilities illustrated on the Tulare County Road Systems to accommodate projected growth in traffic volume.
    - TC-1.3: Regional Coordination – the County shall continue to work with State, regional and local agencies to assess transportation needs and goals and support coordinated transportation planning and programming with the Tulare County Association of Governments and other local agencies.
    - TC-1.5: Public Road System Maintenance – The County shall give priority for maintenance to roadways identified by the Tulare County Pavement System (PMS) and other inputs relevant to maintaining the safety and integrity of the County roadway system.
    - TC-1.14: Roadway Facilities – As part of the development review process, new development shall be conditioned to fund, through impact fees, tonnage fees, and/or other mechanism, the construction and maintenance of roadway facilities impacted by the project. As projects or locations warrant, construction or payment of pro-rata fees for planned road facilities may also be required as a condition of approval.
    - TC-1.15: Traffic Impact Study – The County shall require an analysis of traffic impacts for land development projects that may generate increased traffic on County roads. Typically, applicants of projects generating over 100 peak hour trips per day or where LOS "D" or worse occurs, will be required to prepare and submit this study. The traffic impact study will include impacts from all vehicles, including truck traffic.
    - TC-1.16: County Level of Service (LOS) Standards – The County shall strive to develop and manage its roadway system (both segments and intersections) to meet a LOS of "D" or better in accordance with the LOS definitions established by the highway Capacity Manual.
- TC-2: To improve and enhance current rail services that stimulate economic growth and meet the needs of freight and human transportation.
- TC-3: To enhance airports in the County to meet the County's changing needs and demands while minimizing adverse airport related environmental impacts and safety hazards.

[81] Caltrans Traffic Concept Report, http://www.dot.ca.gov/dist6/planning/tcrs/index.htm. Site accessed March 2015.
[82] Ibid.

- TC-4: To support the development of a public transportation system that provides an alternative to the private automobile and meets the needs of those considered "transit dependent".
- TC-5: to encourage the development of safe, continuous, and easily accessible bicycle and trail systems that facilitate the sue of viable transportation alternatives in a safe and financially feasible manner.
    - TC-5.1: Bicycle/Pedestrian Trail System – The County shall coordinate with TCAG and other agencies to develop a Countywide integrated multi-purpose trail system that provides a linked network with access to recreational, cultural, and employment facilities, as well as offering a recreational experience apart from that available at neighborhood and community parks.

IMPACT ASSESSMENT

XVI-a) Would the Project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Less Than Significant Impact. The Project will not generate significant new traffic or require any permanent operational changes to any existing or planned highways, intersections, pedestrian, bike, or mass transit facilities. Short-term, temporary traffic disturbances may occur during construction of the recharge basins and main trunk pipeline and its undercrossing at County Roads 184 and 160.

Typical construction traffic would be temporary and would potentially generate approximately 30 employee trips per day over the course of about 17 months. Project operations and maintenance would require no permanent on-site personnel.

Once operating, it is anticipated that three maintenance personnel from the PID headquarters in Pixley would perform most maintenance and operations tasks which would include daily site visits. General site maintenance would include levee maintenance, weed abatement, trash removal, periodic sediment removal and water control structure adjustments and maintenance.

There is expected to be virtually no change in the operating conditions of the roadways from what currently exists and the Project will not conflict with any applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of circulation systems. Due to the low number of construction and operations trips, any impact to local roadways will be less than significant.

XVI-b) Would the Project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Less Than Significant Impact. The project does not require construction of any roadways, but would generate temporary traffic during construction. Temporary lane closures may be required on the west side of Road 184. Any road or lane closure activities will be temporary and will be scheduled to maintain access to nearby properties. Therefore, the Project would not interfere with

implementation of an emergency response plan or evacuation here is expected to be virtually no change in the operating conditions of the roadways from what currently exists during the operation and maintenance of the Project. Therefore, the impact to the level of service on surrounding roadways due to Project implementation would be less than significant.

XVI-c) Would the Project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

No Impact. The nearest public airport to the Project site is the Porterville Municipal Airport which is located approximately 7.45 miles northeast of the Project site. The Project would not directly impact any airport facilities; therefore, the project would not cause an increase in air traffic levels or cause a change in air traffic location. There would be no impact.

XVI-d) Would the Project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. No roadway design features are associated with this project and there is no change in the existing land use which would result in an incompatible use. There would be no impact..

XVI-e) Would the Project result in inadequate emergency access?

No Impact. No roads would be modified as a result of this project. Emergency access would remain the same as currently exists; therefore, there would be no impact to any emergency access.

XVI-f) Would the Project conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Less Than Significant Impact. As discussed in Impact XVI-a) the Tulare County Regional Bicycle Transportation Plan does not identify any planned bikeways in the Project vicinity. There are no other adopted alternative transportation policies, plans, or programs in the Project area. Any impacts will be less than significant.

XVII. UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with Federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

BASELINE CONDITIONS

Environmental Setting

There are a multitude of domestic water service providers (both public and private) in Tulare County including community service districts (CSDs), irrigation districts (IDs), public utility districts (PUDs), sanitary districts, County Service Areas (CSAs) and mutual water companies. Demands for irrigation water resources are generally met from groundwater or surface water via the SWP or CVP; either directly or through contractual exchanges. The Project site is located within the PID[83]. PID has historically provided irrigation water only from groundwater supplies.

[83] ESA Associates. Tulare County General Plan 2030 Update, Appendix B Background Report. February 2010. Chapter 7, Public Services and Utilities.

Sanitary sewer services within the County are generally operated and managed by special districts including CSDs, PUDs, sanitary districts, sewer maintenance districts and County Service areas. Some agencies provide sewer collection service only and contract with surrounding agencies for wastewater treatment. Some unincorporated areas lack sanitary sewer infrastructure and are served by individual or community septic systems[84]. There are no public sewer systems, water treatment plants, or wastewater treatment plants in the vicinity of the Project.

The closest landfill to the Project site is the Teapot Dome Landfill, which is located approximately 6 miles northeast of the Project site. This landfill is one of three landfills and seven transfer stations that serve all of Tulare County as well as parts of surrounding counties and they accept wood, green waste, and tires for recycling purposes in addition to solid waste.

Storm drainage infrastructure varies significantly throughout the unincorporated areas of the County. The Project site is located within a rural agricultural area where there is no underground storm drain infrastructure leaving runoff to surface drain.

Regulatory Setting

Federal

National Pollutant Discharge Elimination System
As authorized by the Federal Clean Water Act (CWA), the National Pollutant Discharge Elimination System (NDPES) Permit Program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. In California, it is the responsibility of Regional Water Quality Control Boards (RWQCB) to preserve and enhance the quality of the state's waters through the development of water quality control plans and the issuance of waste discharge requirements (WDRs). WDRs for discharges to surface waters also serve as NPDES permits[85]. Tulare County is within the Central Valley RWQCB's jurisdiction.

Obtaining a NPDES permit requires preparation of detailed information, including characterization of wastewater sources, treatment processes, and effluent quality. Any future development that exceeds one acre in size would be required to comply with NPDES criteria, including preparation of a Stormwater Pollution Prevention Plan (SWPPP) and the inclusion of any appropriate BMPs to control erosion and offsite transport of soils.

State

State Water Resources Control Board (SWRCB)
State regulations pertaining to the treatment, storage, processing, or disposal of solid waste are found in Title 27, CCR, Section 20005 et seq. (hereafter Title 27). In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the

[84] Tulare County General Plan Background Report, Pages 7-38 and 7-39
[85] California State Water Resources Control Board. 2011. National Pollutant Discharge Elimination System (NDPES). Site Available: http://www.waterboards.ca.gov/water_issues/programs/npdes/.

preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to Section 20230 of Title 27[86]. Several programs are administered under the WDR Program, including the Sanitary Sewer Order and recycled water programs.

Department of Resources Recycling and Recovery

The Department of Resources Recycling and Recovery (CalRecycle) is the State agency designated to oversee, manage, and track the 76 million tons of waste generated each year in California. CalRecycle develops laws and regulations to control and manage waste, for which enforcement authority is typically delegated to the local government. The board works jointly with local government to implement regulations and fund programs.

The Integrated Waste Management Act of 1989 (PRC 40050 et seq. or Assembly Bill (AB 939, codified in PRC 40000), administered by CalRecycle, requires all local and county governments to adopt a Source Reduction and Recycling Element to identify means of reducing the amount of solid waste sent to landfills. This law set reduction targets at 25 percent by the year 1995 and 50 percent by the year 2000. To assist local jurisdictions in achieving these targets, the California Solid Waste Reuse and Recycling Access Act of 1991 requires all new developments to include adequate, accessible, and convenient areas for collecting and loading recyclable and green waste materials.

Regional Water Quality Control Board

The primary responsibility for the protection of water quality in California rests with the State Water Resources Control Board (State Board) and nine Regional Water Quality Control Boards. The State Board sets statewide policy for the implementation of state and Federal laws and regulations. The Regional Boards adopt and implement Water Quality Control Plans (Basin Plans) which recognize regional differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities.

Local

Tulare County General Plan Policies:

- PFS-1: To establish and maintain acceptable levels of service, minimize costs, and provide criteria for determining the location, capacity, and timing of existing and future public facilities and services.
    - PFS-1.2: Maintain Existing Levels of Services – The County shall ensure new growth and developments do not create significant adverse impacts on existing County-owned and operated facilities.
- PFS-2: To ensure the provision of a reliable, safe, and adequate supply of high quality water as well as effective distribution and storage facilities to meet the existing and future needs in the County.
- PFS-3: To ensure the provision of adequate wastewater collection, treatment, and disposal within the County.

[86] California State Water Resources Control Board. Land Disposal Program, General Information, Waste Discharge Requirements Program. Site Available: http://www.swrcb.ca.gov/water_issues/programs/land_disposal/waste_discharge_requirements.shtml

- PFS-4: To ensure the management of stormwater in a safe and environmentally sensitive manner through the provision of adequate storm drainage facilities that protect people and property.

    - PFS-4.1: Agency Coordination – The County shall work with the Army Corps of Engineers and other appropriate agencies to develop stormwater detention/retention facilities and recharge facilities that enhance flood protection and improve groundwater recharge.

    - PFS-4.2: NPDES Enforcement – The County shall continue to monitor and enforce provisions to control non-point source water pollution contained in the U.S. Environmental Protection Agency National Pollution Discharge Elimination System (NPDES) program.

- PFS-5: To ensure the safe and efficient disposal and recycling of solid and hazardous waste generated in the County.

IMPACT ASSESSMENT

XVII-a) Would the Project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. The Project would not include permanent restroom facilities, require a sewer hookup, or generate any wastewater. The Project would not result in a change to facilities or operations of the existing wastewater facilities. There would be no impact as a result of Project implementation.

XVII-b) Would the Project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. As discussed in Impact IX-and Impact XVII-a, the Project operation would not generate any continuous wastewater. No new facilities or the expansion of an existing water or wastewater facilities would be needed. As such, there will be no impact.

XVII-c) Would the Project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

No Impact. The project includes the construction of recharge and recovery facilities and would generate no wastewater as discussed in Impact XVII-a and b. Any runoff that does not evaporate would be allowed to percolate into the ground surface. No new storm water drainage facilities would be needed nor would the expansion of an existing facility be required. Therefore, there will be no impact.

XVII-d) Would the Project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact.

The Project is intended to assist with recharging and sustaining local groundwater. The Project would not result in the need for new or expanded entitlements. There would be no impact.

XVII -e) Would the Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. As discussed in Impact XVII-a, the Project would not generate wastewater. There would be no impact.

XVII -f) Would the Project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. The Project will not generate process or solid waste that would require disposal during long-term operation. Waste from construction of the project would be disposed of at one of Tulare County's three Solid Waste Landfills: Visalia, Woodville, and Teapot Dome. These landfills are owned and operated by Tulare County[87]. Any impacts as a result of the Project would be less than significant. Soil would be used onsite.

XVII -g) Would the Project comply with Federal, state, and local statutes and regulations related to solid waste?

No Impact. The Project will comply with all Federal, state, and local regulations for construction material disposal. There is no impact.

[87] ESA Associates. Environmental Impact Report, Recirculated Draft, Tulare County General Plan 2030 Update. February 2010. Pages 3.9-20-21.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

IMPACT ASSESSMENT

XVIII-a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact with Mitigation Incorporated. The analysis conducted in this Initial Study/Mitigated Negative Declaration results in a determination that the Project will have *no impact* to the environmental resources of riparian habitat or other sensitive natural community, Federally protected wetlands, or habitat conservation plans or local policies or ordinances protecting biological resources. . The analysis results in a determination that the Project will have a *less than significant effect* on potential movement of any native or resident or migratory fish or wildlife species. The analysis determines *less than significant effect with mitigation incorporated* for habitat modification for State- and/or Federal-identified candidate, sensitive, or special status species. The analysis determined there would be no unavoidable impacts as a result of the Project.

Accordingly, the Project would have no potential to significantly degrade the quality of the environment, reduce the habitat or population of fish or wildlife, including endangered plants or animals, the elimination of a plant or animal community or example of a major period of California history or prehistory. The impact will be less than significant with mitigation.

XVIII-b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less Than Significant Impact with Mitigation Incorporated. The Project proposes to construct an approximately 500-800 acres of recharge basins with associated appurtenant pumps, wells and delivery pipeline with an in-lieu service area of approximately 3,539 acres within PID. The area of the recharge basin was chosen based on the soil type percolation rate and calculations of recharge capabilities and anticipated recovery needs to the in-lieu service area land owners. An objective of the Project is to recharge the groundwater aquifer in an effort to reduce groundwater overdraft and balance needs with surface water use and create a sustainable supply for the District and in-lieu service area.

The recharge basins will be almost entirely passive and will not result in ongoing impacts that are individually limited or cumulatively considerable. As determined in the SJRRP Programmatic EIS/R[88] (SJRRP 2011, p. 26-47), these potential groundwater banks have been identified as opportunities to take advantage of surplus water. The implementation of the identified Project-specific mitigation measures and compliance with applicable codes, ordinances, laws and other required regulations will reduce the magnitude of any individual or cumulatively considerable impacts associated with construction and operation of the Project to a less than significant level.

XVIII-c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact with Mitigation Incorporated. Based upon all the topical analyses above, the Project will not result in substantial adverse effects on human beings, either directly or indirectly. Mitigation measures are provided in Chapter 3 for Air Quality, Biological Resources, Cultural Resources, Hydrology and Water Resources and Geology and Soils of this environmental document. The implementation of the identified mitigation measures would reduce the Project's potential environmental effects on the public and the environment to less than significant levels. No additional mitigation measures will be required. Adverse effects on human beings resulting from implementation of the Project will be less than significant.

[88] Bureau of Reclamation, *2012 San Joaquin River Restoration Program Programmatic EIS/EIR and Record of Decision*, website accessed January 2016, http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=2940