



McMullin Area Groundwater Sustainability Agency



Aquaterra Water Bank Project Initial Study

PREPARED BY:



MARCH 2024

4.1 AESTHETICS (AES)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
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) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

4.1.1 Environmental Setting

Aesthetic resources include the visual characteristics of the existing natural and human made landscape. Analysis of aesthetic impacts requires the subjective assessment of the changes to visual characteristics resulting from the construction and operation of the proposed project. Aesthetics impact analysis considers project design in relation to the surrounding visual character, including natural landscape features, scenic designations, and existing structure types, as well as the potential for the project to obstruct scenic views or vistas and create new sources of light or glare.

Local visual conditions within the project area are dominated by agricultural production, paved and unpaved roadways, irrigation facilities, overhead utilities, and limited structures that include homes and agricultural facilities. Agricultural production primarily includes perennial crops such as fruit trees, nut trees, and vineyards, with some annual crops. Fallow, or uncultivated lands, are also present on a rotational basis throughout the project area.

Human development in the area includes roads, bridges, buildings, canals, and irrigation facilities. Major road arterials are two-lane paved roads with an extensive network of two-lane dirt roads radiating through farm fields. Along roadways are irrigation ditches, turnouts, reservoirs, culverts, bridges, utility boxes, and pole utility lines. Farming operations include warehouses and barns for dairy farms and the associated storage and maintenance buildings, silos and other storage facilities. The area has few private homes and commercial retail space is limited to Raisin City. The American Avenue landfill is in the central portion of the project area. The San Joaquin Valley has been highly altered from its native grassland condition into intensely farmed agricultural land.

Those experiencing views in the project area include farm owners, operators, and workers, as well as the few homeowners in the area, and those passing through on their way to the cities in the region. Long-range views from the project area may include the Sierra Nevada Mountain Range to the east and the Diablo Range to the west on clear days. Long-range views into the project area from the Sierra Nevada and Diablo ranges are too distant (at approximately 25 miles and 20 miles, respectively) to observe detailed visual characteristics of the project area.

The California Scenic Highway Program, governed by the Streets and Highways Code, §260 et seq., is intended to preserve and protect highway corridors in areas of outstanding natural beauty from changes that would diminish the aesthetic value of the adjacent lands. There are no Caltrans-designated scenic highways in the project area or vicinity (Caltrans 2022). The Fresno County General Plan does not specify any scenic vistas or roadways in the project area; the nearest roadway eligible for scenic designation is SR-198 in the southwestern portion of the county, approximately 18 miles from the project area (Fresno County 2000, Fresno County 2021a).

4.1.2 Regulatory Setting

4.1.2.1 Federal

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

4.1.2.2 State

California Environmental Quality Act. State regulations relating to aesthetics include the 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. 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 percent 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 use district that may be adopted by a local government. The Project is in a rural area, as defined by the 2020 Census, so it is in Lighting Zone 2.

California Scenic Highway Program. The California Scenic Highway Program, governed by the Streets and Highways Code, §260 et seq., is intended to preserve and protect highway corridors in areas of outstanding natural beauty from changes that would diminish the aesthetic value of the adjacent lands. There are no Caltrans-designated scenic highways in the project area or vicinity (Caltrans 2022).

4.1.2.3 County and Regional

Fresno County General Plan. The Fresno County General Plan provides the following policies and goals that apply to scenic and visual character within agricultural areas or along transportation corridors (Fresno County 2000). Although several policies apply to visual resources, they are not specific to the conditions within the project area.

Policy LU-B.11. The County shall require that new development requiring a County discretionary permit be planned and designed to maintain the scenic open space character of rangelands including view corridors of highways. New development shall utilize natural landforms and vegetation in the least visually disruptive way possible, and use design, construction and maintenance techniques that minimize the visibility of structures on hillsides, ridgelines, steep slopes, and canyons.

Policy PF-J.2. The County shall work with local gas and electric utility companies to design and locate appropriate expansion of gas and electric systems, while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on existing and future residents.

Policy OS-A.18. The County shall require that natural watercourses are integrated into new development in such a way that they are accessible to the public and provide a positive visual element and a buffer area between waterways and urban development in an effort to protect water quality and riparian areas.

Goal OS-L. This goal and its associated policies are intended to conserve, protect, and maintain the scenic quality of land and landscape adjacent to scenic roads in Fresno County. There are no designated scenic highways, roads, or vistas in the project area under the General Plan.

4.1.3 Potential Impacts

AES a): Would the proposed project have a substantial adverse effect on a scenic vista?

(Less than Significant Impact) The proposed project would result in a temporary adverse effect on the immediate viewshed during the construction period. Visual impacts would result from the presence of construction equipment and may include equipment that rises near or above surrounding vegetation and the horizon line. Construction equipment would be visible to residents in the immediate area of construction and those passing on nearby roadways. These impacts would be temporary, occurring during the construction period only, and would cease once construction ends. There would be no impacts to scenic vistas. Construction and operation of the project would not be subject to the requirements of the Scenic Highway Program.

AES b): Would the proposed project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

(No Impact) Proposed construction activities and operational conditions would not affect rocky outcrops, as these types of resources do not occur in the impact area. There are no state scenic highways in the project area or vicinity (Caltrans 2022). Similarly, the Fresno County General Plan does not list scenic resources as being present in the project area (Fresno County 2000). Therefore, there would be no impact to scenic resources.

AES c): Would the proposed project, in non-urbanized areas, substantially degrade the existing visual character or quality of the site and its surroundings? If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

(Less Than Significant Impact) Temporary impacts could result to visual resources during the construction of the project. The presence of construction equipment, land clearing and earth moving, and

increased generation of dust from exposed soils could all contribute to diminished aesthetic appeal of the project area. However, ongoing visual conditions of the project area are already similar to the visual components of construction since heavy trucks and machinery are regularly present in project area agricultural lands. Because visual impacts due to construction would be temporary and would only be incrementally more observable than ongoing practices at the site, impacts to visual character or quality due to construction would be less than significant.

Operations of the newly constructed canals or recharge basins would require minimal increases in truck and car traffic within the project area, and new infrastructure, such as weirs, canals, and water pumps, would be consistent with the existing farming landscape. Visual changes resulting from operation of the project would not generate any substantial change in visual character or quality. Therefore, operations impact to visual resources are less than significant.

AES d): Would the proposed 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) Increased water surface during times when recharge basins are flooded would create a minor source of glare into the environment, but the basins would be surrounded by berms and the water surfaces would not be visible from highways, roads, or residences. During construction, temporary security lighting will likely be installed and used at staging areas. Such lights would be hooded and have shields installed to contain glare and reduce potential for light-related impacts to nearby dwellings and would be removed at the end of the construction period. There would be no new permanent sources of light associated with the proposed project area. This impact would be less than significant.

4.2 AGRICULTURAL AND FOREST RESOURCES (AFR)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
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 nonagricultural 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?	☐	☐	☒	☐

4.2.1 Environmental Setting

The proposed project is in Fresno County within the San Joaquin Valley, one of the most productive agricultural areas in the United States. Fresno County is the leading agricultural county in California, producing over \$7.7 billion in 2019 (CDFA 2020) and supporting 9 percent of jobs in Fresno County (U.S. Census Bureau 2020). Twenty-one percent of the jobs in Raisin City, within the proposed project area, are related to agriculture (U.S. Census Bureau 2020). Fresno County's top commodities include almonds, pistachios, livestock, and table grapes (CDFA 2020). Crops observed within the proposed project area include perennial crops (pistachios, almonds, walnuts, grapes, and cherries) and annual crops (tomatoes, peppers, onions, corn, wheat, and alfalfa), as well as pasture and dairy use (Figure 4-1). The Natural Resources Conservation Service (NRCS) Soil Service Geographic Database has classified soils in

the study footprint area as sandy and loamy soil types (NRCS 2013). There are no forested lands within the project area.

The project area is comprised of lands classified by the California Resources Agency (CRA) as being prime farmlands, unique farmlands, farmlands of statewide importance, or farmlands of local importance (Figure 4-2). These lands are defined as follows:

- Prime Farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and as available for these uses. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied.
- Unique Farmland is land other than prime farmland that is used for production of specific high-value food and fiber crops. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of crops when properly managed.
- Farmland of Statewide Importance is farmland similar to prime farmland but with minor shortcomings, such as greater slopes or less ability to store moisture.
- Farmland of Local Importance is farmland that is important to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

4.2.2 Regulatory Setting

4.2.2.1 Federal

Farmland Protection Policy Act. The Farmland Protection Policy Act (FPPA) was passed in 1981, after studies found that urban sprawl was accelerating the conversion of farmland to buildings and roads. The goal of the FPPA is to minimize the impact of federal programs on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It ensures that federal programs are compatible with state, local, and private programs and policies that protect farmland. Under the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be in current agricultural use. It can include forest land, pastureland, cropland, or other land uses, but not water or urban built-up land (NRCS 2022).

The FPPA does not authorize the federal government to regulate the use of private or nonfederal land and does not affect the property rights of owners. Funding agencies have the latitude to determine if a use is irreversible. 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. The conveyance canals will remove land from productive agriculture, but such removal is 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.

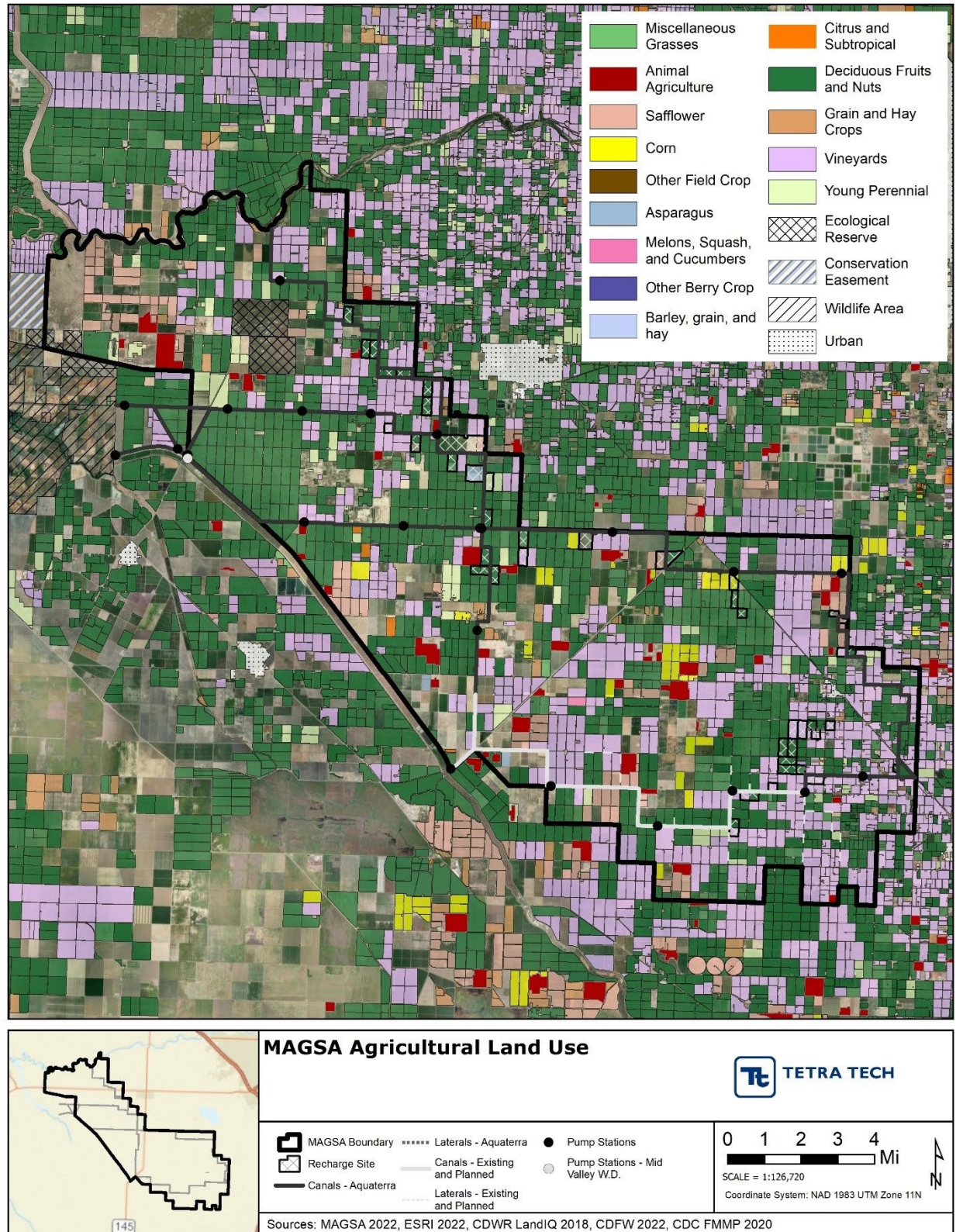


Figure 4-1: Agricultural Land Use

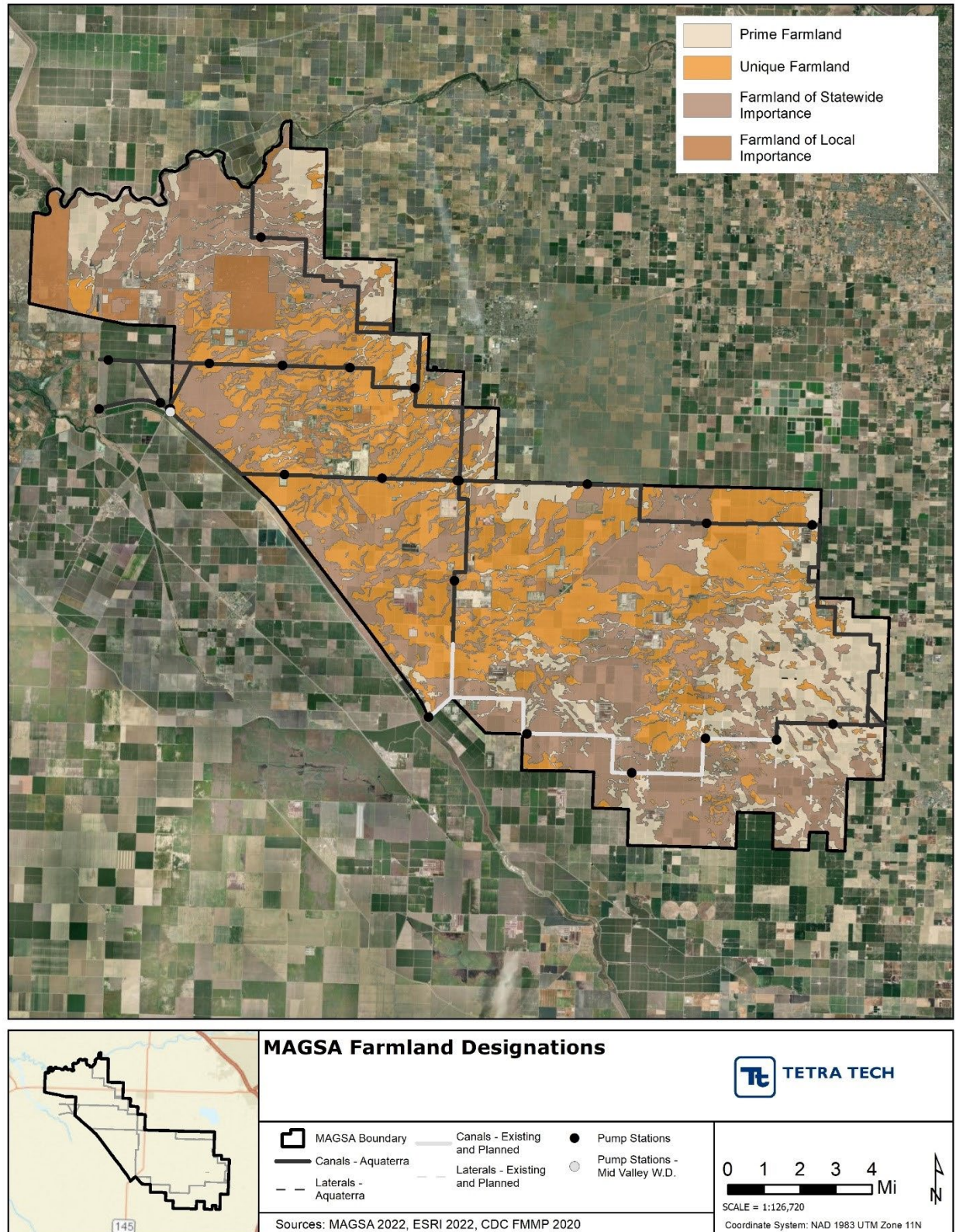


Figure 4-2: Farmland Designations

4.2.2.2 State

California Land Conservation Act (Williamson Act). The California Land Conservation Act, commonly known as the Williamson Act, was the result of a study by the Assembly Agriculture Committee in cooperation with the California Department of Food and Agriculture (CDFA) and others. The study eventually led to the passage of legislation in 1965. Under the Williamson Act, an owner of agricultural land may enter a contract with the County if the landowner agrees to restrict use of the land to the production of commercial crops for a term of not less than 10 years. The term of the contract is automatically extended each year unless notice of cancellation or nonrenewal is given. Certain compatible uses are also allowed on the property. In return, the landowner is taxed on the capitalization of the income from the land and not on the Proposition 13 value. As of 2021, there are more than 12 million acres enrolled in the Williamson Act in 52 counties in the state (CDC 2022). Within the proposed project area, 95,136 acres are enrolled (Figure 4-3).

California Department of Conservation (CDC), Farmland Mapping and Monitoring Program (FMMP). The FMMP produces maps and statistical data used for analyzing impacts to California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status; the best quality land is called Prime Farmland. The maps are updated every two years with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance.

Sustainable Groundwater Management Act of 2014. The California Legislature enacted the Sustainable Groundwater Management Act of 2014 ("Act") a decade ago. 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 MAGSA (Kings' Basin). 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)).

4.2.2.3 County and Regional

Fresno County General Plan. The proposed project area is addressed in the existing Fresno County General Plan and the ongoing update to the General Plan (Fresno County 2000, 2021b). More detailed information, including goals and policies, can be found in the Agriculture and Land Use Element of each document. Most of the proposed project area is zoned AE-20, Exclusive Agriculture, which requires a 20-acre minimum lot size. Raisin City is zoned A-1, Agricultural District.

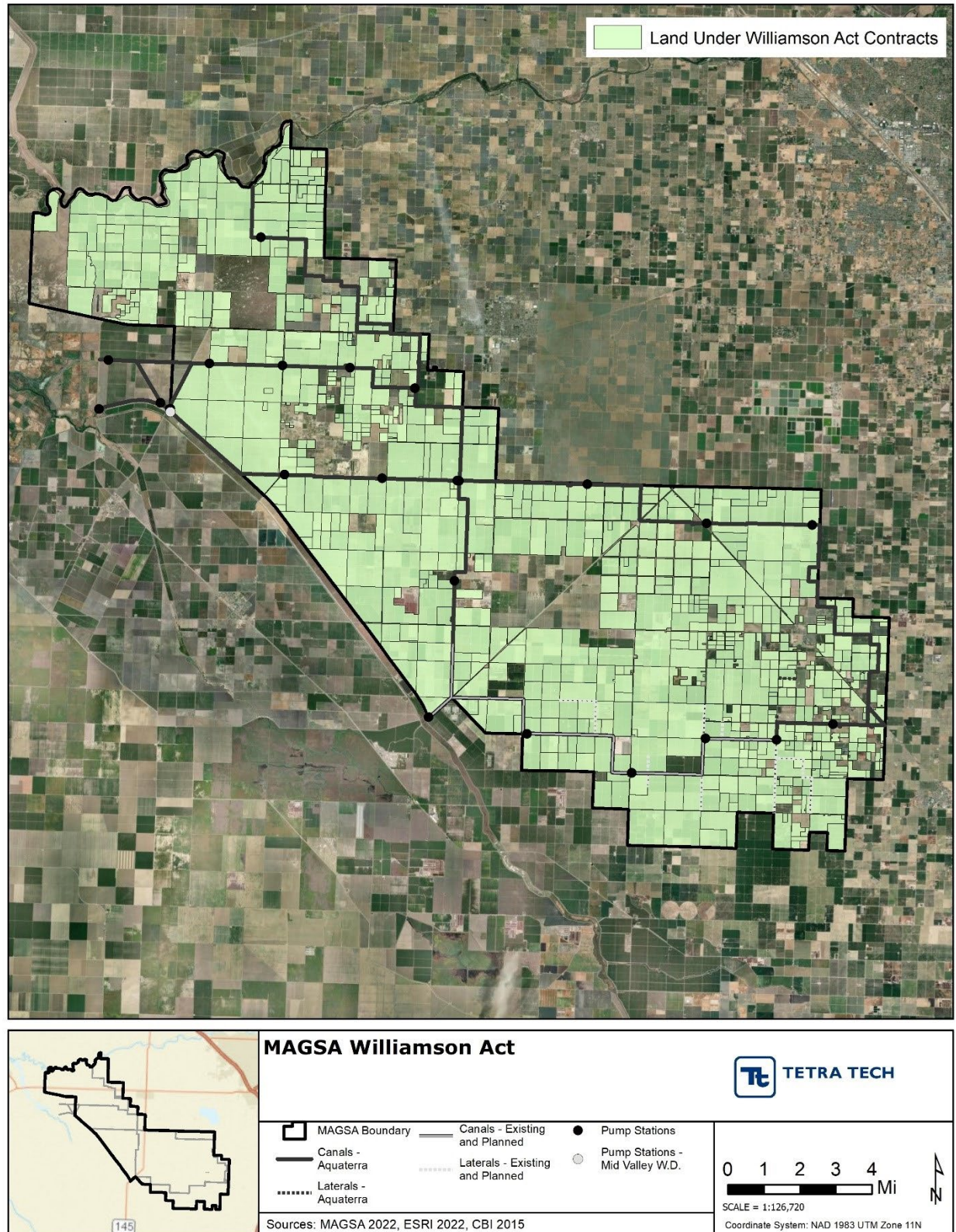


Figure 4-3: Williamson Act

4.2.3 Potential Impacts

AFR a): Would the proposed 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 nonagricultural use?

(Less than Significant Impact) Proposed use of existing prime and unique farmlands or farmlands of statewide or local importance for groundwater banking is not considered a conversion from agricultural use to nonagricultural use. According to the California Code, Public Resources Code, §65570, "amount of land converted from agricultural use" means those lands which were permanently converted or committed to urban or other nonagricultural uses and were shown as agricultural land on Important Farmland Series maps maintained by the CDC and in the most recent biennial report.

Approximately 1,543 acres of agricultural lands will be taken out of direct agricultural production for the permanent easement and conveyance system, and an additional 3,480 acres will be used as recharge basins on a seasonal basis. This is considered a less than significant impact for the following reasons:

- Construction and use of recharge basins would not constitute a permanent change because the lands within the recharge basins can still be used for seasonal agriculture and will support agricultural uses by facilitating groundwater recharge. This is an important distinction from projects that would convert agricultural lands to housing developments, industrial sites, or businesses.
- Lands within the conveyance canals and permanent easements are situated directly along roads in areas of low productivity and could be converted back to agricultural land in the future.
- The proposed project will benefit agricultural uses in the surrounding area by raising the groundwater table, increasing water conveyance to farmlands throughout the southern and eastern sides of the MAGSA area, and improving irrigation infrastructure. Furthermore, the conveyance system is designed to be situated directly alongside roads, in lands typically not in active agricultural production.
- The proposed project is consistent with Fresno County's zoning as Exclusive Agriculture (AE-20) and with its 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 proposed project as a conversion of farmland to non-agricultural use, but rather see the project as an agricultural or agricultural-support operation. The proposed project would not directly induce loss of farmland in the project area, as is typical of projects that convert agricultural lands to residential or commercial uses.
- The proposed project would be compatible with the goals and policies of Fresno County's General Plan for protecting and enhancing surface and groundwater resources critical to agriculture (LU-A.20), importing flood, surplus, and other available water for use in Fresno County (PF-C.2), and supporting water banking when the program has local sponsorship and involvement and provides new benefits to the County (PF-C.5).

AFR b): Would the proposed project conflict with existing zoning for agricultural use, or a Williamson Act contract?

(No Impact) The proposed project area is zoned as AE-20 and A-1. There will be no changes in zoning designations from the resulting proposed action. The 95,136 acres of land within the project area currently under Williamson Act contracts will remain enrolled and eligible for this program. The proposed project is consistent with Fresno County's General Plan policy for Williamson Act contracts (LU-A.1), and

changes made to agricultural lands from the construction of the conveyance system, pump stations, and recharge sites will remain consistent with Williamson Act guidelines. There will be no impact to existing zoning or Williamson Act contracts under the proposed project.

AFR c): Would the proposed project 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 portion of the project area is categorized as timber, timberland, or timberland production zone and there would be no impact to forest resources.

AFR d): Would the proposed project result in the loss of forest land or conversion of forest land to non-forest use?

(No Impact) There are no forested lands within the proposed project area so there will be no impact to forest land under the proposed project.

AFR e): Would the proposed project involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to nonagricultural use or conversion of forest land to non-forest use?

(Less than Significant Impact) The proposed project is an agricultural-related water storage and groundwater recharge project that would not result in other changes in the existing environment, such as growth inducement, which would cause additional land to be converted to non-agricultural or non-forest use. While the project would remove up to 1,534 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 during wet periods that might otherwise flow downstream and out of the area. The proposed project will provide a “greater good” to existing agricultural operations by conserving excess surface water as groundwater recharge for banking purposes. This concept is consistent with Part III, 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 conversion of part of the project area from orchard to seasonal farming activities in the recharge basins is consistent with the Fresno County General Plan land use designation for “Agriculture” and a compatible use within “Exclusive Agriculture” 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 agriculture and preventing other lands from being fallowed. Therefore, impacts would be less than significant.

4.3 AIR QUALITY (AIR)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal, state, or regional ambient air quality standard?	☐	☒	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

4.3.1 Environmental Setting

The Project is located within the San Joaquin Valley Air Basin (SJVAB), which is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD). The topology and meteorology of the San Joaquin Valley (SJV) are conducive to trapping air pollutants for extended periods and the formation of photochemical smog. The SJV is bordered by the Sierra Nevada Mountains in the east (8,000 to 14,491 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000 to 7,981 feet in elevation) and open to the Sacramento Valley and the San Francisco Bay Area to the north. The bowl-shaped topography inhibits movement of pollutants out of the valley. Low precipitation levels, cloudless days, high temperatures, and light winds during the summer in the SJV are conducive to ozone formation. Inversion layers in the atmosphere during the winter can trap emissions of directly emitted PM_{2.5} and PM_{2.5} precursors within the SJV for several days, accumulating to unhealthy levels.

Appendix 4 of this document includes an Air Quality and Greenhouse Gas Impact Analysis study completed for this project. That study provides a detailed description of the existing environment in the project area and identifies potential impacts associated with the proposed 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. The study was prepared in accordance with the SJVAPCD's Guidance for Assessing and Mitigating Air Quality Impacts (2015).

4.3.2 Regulatory Setting

Air quality within the SJVAB is regulated by several jurisdictions including the U.S. EPA, California Air Resources Board (CARB), 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.

4.3.2.1 Federal

Clean Air Act (CAA). The Clean Air Act (42 U.S.C. 7401, et seq.) delegates primary enforcement to the states, with direct oversight by the U.S. Environmental Protection Agency (EPA). The CAA, last amended in 1990, requires EPA to set National Ambient Air Quality Standards (NAAQSs) (40 CFR part 50) for pollutants considered harmful to public health and the environment. The CAA established two types of standards. Primary standards were established to promote human health with an adequate margin of safety to protect those most vulnerable such as asthmatics, infants, and elderly persons. Secondary standards were established to promote human welfare to prevent impaired visibility, building and crop damage, etc.

The Federal CAA requires areas with air quality violating the NAAQS to prepare an air quality control plan referred to as the State Implementation Plan (SIP). The SIP contains the strategies and control measures that states will use to attain the NAAQS. The Federal CAA amendments of 1990 require states containing areas that violate the NAAQS to revise their SIPs to incorporate additional control measures to reduce air pollution.

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.

4.3.2.2 State

California Clean Air Act. CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, requires CARB to establish California Ambient Air Quality Standards (CAAQS) (California Air Resources Board, 2010). The standards for criteria pollutants established by CARB are generally more restrictive than the NAAQS. CARB has also established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the criteria air pollutants described below.

The CCAA requires that all local air districts in the State endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts should focus particular attention on

reducing the emissions from transportation and area wide emission sources and provides districts with the authority to regulate indirect sources (i.e., sources that are not stationary or regulated as a stationary source, such as construction sources).

Federal and state regulations designate areas with levels above the standards as nonattainment areas, and areas with levels below as attainment areas. Attainment status of Fresno County for both the NAAQS and CAAQS is outlined in Table 4-1.

State Implementation Plan. 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 in place for the SJV include the SJVAPCD 2015 PM_{2.5} Plan, the SJVAPCD 2007 8-hour Ozone Plan, the SJVAPCD 2013 Plan for the Revoked 1-Hour Ozone Standard, and the SJVAPCD 2006 PM₁₀ Plan.

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.

4.3.2.3 County and Regional

San Joaquin Valley Air Pollution Control District. The SJVAPCD is a public health agency whose mission is to improve the health and quality of life for all San Joaquin Valley residents through efficient, effective, and entrepreneurial air quality-management strategies. Eight counties, including Fresno County, are within the District. The SJVAPCD is responsible for the implementation of programs and regulations required by the federal Clean Air Act and the California Clean Air Act. To meet that responsibility, the District has adopted several air quality attainment plans over the years that identify measures needed in the Valley to attain federal and State air quality standards. The District has implemented these plans and adopted nearly 650 rules that have resulted in significant emissions reductions. The District's plans include emissions inventories that identify sources of air pollutants, evaluations for feasibility of implementing potential opportunities to reduce emissions, sophisticated computer modeling to estimate future levels of pollution, and a strategy for how air pollution will be further reduced. As a result, PM_{2.5} and ozone levels are now at historically low levels.

As seen in Table 4-1, the San Joaquin Valley is designated as being in nonattainment for the federal 8-hour ozone standard as well as both the annual and 24-hour PM_{2.5} standard. In response, the District has adopted the 2020 RACT Demonstration for the 2015 8-Hour Ozone Standard of 70 parts per billion and the 2016 Plan for the 2008 8-Hour Ozone Standard of 75 parts per billion 8-hour ozone standard. These plans demonstrate attainment of the national ozone standard. The District adopted the 2018 Plan for the 1997, 2006, and 2012 PM_{2.5} Standards on November 15, 2018. This plan addresses the EPA federal 1997 annual PM_{2.5} standard of 15 µg/m³ and 24-hour PM_{2.5} standard of 65 µg/m³; the 2006 24-hour PM_{2.5} standard of 35 µg/m³; and the 2012 annual PM_{2.5} standard of 12 µg/m³.

The District's Indirect Source Review (Rule 9510), applicable to construction and operation of new development projects, including transportation and transit development projects, is applicable to this project. Rule 9510 requires certain on-site emission reductions of PM₁₀ and NO_x emissions relative to baseline, or a fee for off-site emissions reductions, for projects which exceed two tons per year of NO_x or PM₁₀.

Table 4-1: Attainment Status for San Joaquin Valley

Pollutant	Averaging	CAAQS		NAAQS	
		Conc.	Attainment Status	Conc.	Attainment Status
Ozone	8 Hour	0.070 ppm	Nonattainment	0.070 ppm	Nonattainment/ Extreme
	1 Hour	0.090 ppm	Nonattainment/ Severe	Revoked	n/a
Carbon Monoxide	8 Hour	9.0 ppm	Attainment/ Unclassified	9.0 ppm	Attainment/Maintenance
	1 Hour	20 ppm		35 ppm	
Nitrogen Dioxide	1 Hour	0.18 ppm	Attainment	100 ppb	Attainment/Unclassified
	AAM	0.030 ppm		53 ppb	
Sulfur Dioxide	24 Hour	0.04 ppm	Attainment	n/a	Attainment/Unclassified
	3 Hour	n/a		0.5 ppb	
	1 hour	0.25 ppm		75 ppm	
Particulate Matter (PM ₁₀)	AAM	20 µg/m ³	Nonattainment	n/a	Attainment
	24 Hour	50 µg/m ³		150 µg/m ³	
Fine Particulate Matter (PM _{2.5})	AAM	12 µg/m ³	Nonattainment	12 µg/m ³	Non-attainment
	24 Hour	n/a		35 µg/m ³	
Lead (Particulate)	Rolling three-month period,	n/a	n/a	0.15 µg/m ³	No Designation/Classification

Pollutant	Averaging	CAAQS		NAAQS	
		Conc.	Attainment Status	Conc.	Attainment Status
Lead (Particulate)	30 Day Average	1.5 µg/m ³	Attainment	n/a	n/a
Hydrogen Sulfide	1 Hour	0.03 ppm	Unclassified	n/a	n/a
Sulfates	24 Hour	25 µg/m ³	Attainment	n/a	n/a
Visibility Reducing Particles	8 Hour	*	Unclassified	n/a	n/a
Vinyl Chloride	24 Hour	0.010 ppm (26 µg/m ³)	Attainment	n/a	n/a
Source: San Joaquin Valley Air Pollution Control District. 2015. Micrograms per cubic meter (µg/m ³), parts per million (ppm), annual arithmetic mean (AAM). * Statewide Visibility Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.					

4.3.3 Potential Impacts

The potential for the proposed project to affect air quality was assessed and documented in the air quality technical document prepared for the project (Appendix 4) (Tetra Tech 2024). The assessment considered potential impacts resulting from both the construction and operation of the project. Emissions of key air pollutants and greenhouse gases (GHGs) were estimated for the Aquaterra Project based on the use of California Emissions Estimator Model (CalEEMod version 2022.1; California Air Pollution Control Officers Association 2023). The modeling of air pollutant and GHG emissions using the CalEEMod includes two components: (1) a construction phase to develop the main conveyance and recharge basin elements; and (2) an operation phase mainly involving the use of various pump stations and recovery wells to carry out seasonal groundwater recharge and pumping to and from the Mendota Pool. Emissions from construction generally result from the equipment used for grading, excavation, and hauling, and from daily trips of workforce and equipment. Emissions from the operation phase result from the use of pumps used for groundwater recharge and occasional trips for inspection and maintenance.

AIR (a): Would the project conflict with or obstruct implementation of an applicable air quality plan?

(Less than Significant Impact with Mitigation Incorporation) Construction of the proposed project would generate temporary emissions during construction and long-term emissions during operations, both of which could conflict with or obstruct air quality attainment and maintenance planning efforts. Consistency with air quality plans is evaluated 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. The proposed project is consistent with current zoning and general plan land use designations, and would not result in growth in employment, population, or VMTs. Therefore, it would be considered consistent with employment and VMT growth projections identified in local plans.

Projects that exceed applicable project-level CEQA significance thresholds would 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. As shown in Tables 4-2 and 4-3, below, construction and operations emissions would not exceed SJVAPCD's localized significance thresholds.

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. Therefore, this impact is considered potentially significant. However, with implementation of Mitigation Measures AIR-1 and AIR-2, the proposed project will be consistent with SJVAPCD's Regulation VIII for controlling fugitive dust. Impacts will be less than significant after mitigation incorporation.

Table 4-2: Estimated emissions and compliance of criterial pollutants (short tons per year; tpy) and GHG (metric tons per year; MT/year) during construction of the proposed project (Sep-2025 to Feb-2028)

Year	TOG (tpy)	ROG (tpy)	NOx (tpy)	CO (tpy)	SOx (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	CO _{2e} (MT per year)
2024	0.072	0.071	1.85	2.147	0.004	2.694	0.387	411.4
2025	0.214	0.21	5.528	6.421	0.012	8.059	1.159	1228
2026	0.214	0.21	5.522	6.418	0.012	8.059	1.159	1226
2027	0.213	0.21	5.517	6.416	0.012	8.059	1.159	1222
2028	0.035	0.035	0.906	1.055	0.002	1.325	0.191	200.4
Annual threshold	-	10	10	100	27	15	15	-
Above threshold	-	No	No	No	No	No	No	-
Construction total	0.748	0.736	19.323	22.457	0.042	28.196	4.055	4287.8

Table 4-3: Estimated emissions (tons per year) and compliance of criterial pollutants (short tons per year; tpy) and GHG (metric tons per year; MT/year) during annual operation after project completion

	TOG (tpy)	ROG (tpy)	NOx (tpy)	CO (tpy)	SOx (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	CO _{2e} (MT per year)
Annual emissions	0.606	0.467	4.812	5.997	0.016	0.933	0.854	9311
Annual threshold	-	10	10	100	27	15	15	-
Above threshold	-	No	No	No	No	No	No	-

AIR (b): 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, state, or regional ambient air quality standard?

(Less than Significant Impact with Mitigation Incorporation)

Short-Term Construction

Short-term increases in emissions would occur during the construction process. Construction-generated emissions would be temporary, lasting only as long as construction activities occur, but have the potential to result in a significant air quality impact. Construction would result in the temporary generation of emissions associated with various activities, including site preparation, grading, and installation of project infrastructure. Emissions of ozone-precursor pollutants (ROG and NOx) 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. The estimated annual and total project construction emissions, shown in Tables 4-2 and 4-3, are all less than the thresholds of significance.

Annual Construction Emissions

Estimated annual construction emissions would total approximately 0.21 tons per year (tpy) of ROG, 5.53 tpy of NO_x, 6.42 tpy of CO, 0.01 tpy of SO_x, 8.06 tpy of PM₁₀, and 1.16 tpy of PM_{2.5}. Estimated annual construction-generated emissions would not exceed the SJVAPCD'S significance thresholds.

Long-Term Operations

Emissions of criteria pollutants associated with the operation of the proposed project, shown in Table 4-3, are estimated to be a very small fraction of the thresholds of significance and are not expected to contribute cumulatively to the net increase of any pollutants.

AIR (c): Would the project expose sensitive receptors to substantial pollutant concentrations? (Less than Significant Impact with Mitigation Incorporation)

Toxic Air Pollutants

Pollutants of primary concern commonly associated with construction-related activities include toxic air contaminants such as diesel particulate matter (DPM) and fugitive dust. Within the project area, the potential to increase occurrences of Valley Fever may result from disturbing soils and increasing fugitive dust.

Construction may result in temporary increases in emissions of DPM associated with the use of off-road diesel-fueled equipment. Since health-related risks associated with diesel-exhaust emissions are primarily associated with long-term exposure and associated risk of contracting cancer, the calculation of cancer risk associated with exposure of toxic air contaminants are typically calculated based on a long-term (e.g., 70-year) period of exposure. Construction activities would occur over an approximate 42-month construction period, which would constitute roughly 5 percent of the typical 70-year exposure period. The use of diesel-fueled equipment for routine maintenance activities 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. In addition, implementation of Mitigation Measure AIR-3 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.

Localized Particulate Concentrations

Construction of the Project would include ground-disturbing activities which would be anticipated to result in increased emissions of airborne particulates but 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 4). 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 AIR-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 Measures AIR-2 and AIR-3 would result in additional reductions of mobile-source PM emissions. With mitigation incorporated, this impact would be less than significant.

Carbon Monoxide

Localized concentrations of CO are typically associated with the idling of vehicles, particularly in highly congested areas. Construction of the proposed project would occur in a minimally populated area with low traffic counts and high emission dispersal rates; therefore, concentrations of CO are not likely to occur during construction. Vehicle trips generated during operations 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 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 AIR-1, implementation of Mitigation Measure AIR-2 would require the inclusion of additional measures in the dust control plan 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 incorporated, this impact would be less than significant.

AIR (d): Would the project result in other emissions, such as those leading to odors, adversely affecting a substantial number of people?

Land uses that may result in potential odor problems include agriculture, wastewater treatment plants, food processing and rendering facilities, chemical plants, composting facilities, landfills, waste transfer stations, and dairies. The proposed project would not result in the creation or use 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 would be less than significant.

4.4 BIOLOGICAL RESOURCES (BIO)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
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 state or federally protected wetlands (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?	☐	☐	☐	☒

4.4.1 Environmental Setting

The San Joaquin River and associated grassland and valley foothill riparian habitats adjacent to cropped lands lie along the Project area's northern boundary. Several ecologically important conservation areas occur just beyond the project area, have some area within the project area, or lie entirely within the project area (Table 4-4). Portions of the western project area boundary are bordered by the James Bypass, the Mendota Wildlife Area, which is bisected by the Fresno Slough, the Alkali Sink Ecological Reserve just northeast of the Mendota Wildlife Area, and a State-owned conservation easement. These areas are conserved and managed by the California Department of Fish and Wildlife (CDFW).

Table 4-4: Ecologically Important Conservation Areas Adjacent to or within the Project Area

Conservation Area	No. of Acres	Activities	Habitat Type(s)
Mendota Wildlife Area	11,800	Wildlife viewing, fishing, restricted hunting	Primarily seasonally flooded freshwater emergent wetland; open water; valley foothill riparian; dispersed alkali sink scrub (adjacent to MAGSA area)
Alkali Sink Ecological Reserve	930	Wildlife viewing	Alkali sink scrub; annual grassland (within MAGSA area)
Kerman Ecological Reserve	1,800	Wildlife viewing, hunting w/ shotgun	Primarily annual grassland; dispersed northern claypan vernal pool and desert alkali scrub (within MAGSA area)
Source: CDFW 2021a			

The following discussion of the affected environment for the Project area was informed by a Project-specific literature review and reconnaissance level field survey in November 2021 (Tetra Tech 2022; Appendix 5).

Agriculture

The Project area consists of actively managed orchards, vineyards, row crops, scattered poultry and dairy product agricultural uses, and a few agricultural product processing facilities (tree nut hulling, raisin, and citrus processors/packers). Agricultural crops including but not limited to almond (*Prunus dulcis*) and pistachio (*Pistacia vera*) orchards, various stone fruit orchards, grape (*Vitis spp.*), alfalfa (*Medicago sativa*), and barley (*Hordeum spp.*) cover the vast majority of the MAGSA area.

Plants

Roadsides in agricultural areas and rows between orchards and vineyards were sparsely vegetated and intentionally maintained to be relatively free of vegetation, but annual/biennial broadleaf ruderal weed species are the dominant vegetation in these areas with lesser amounts of introduced annual and perennial grasses. Broadleaf species recognizable during the field survey included hairy fleabane (*Conyza bonariensis*), tumble pigweed (*Amaranthus albus*), Russian thistle (*Salsola kali*), and jimson weed (*Datura stramonium*). Narrow-leaf milkweed (*Asclepias fascicularis*) and goldenrod (*Solidago spp.*) were observed adjacent to or within the James Bypass area. Annual and perennial grasses included Bermuda grass (*Cynodon dactylon*), Johnson grass (*Sorghum halepense*), crabgrass (*Digitaria spp.*), and ryegrass (*Lolium spp.*).

Woody vegetation other than orchards and vineyards or ornamental trees and shrubs planted at settlements is minimal. Riparian areas in the James Bypass adjacent to the Mendota Wildlife Area just beyond the project area contain established shrubs and trees. In the Project area, one area of note was observed adjacent to an impoundment near orchards in the northeastern portion of the Project area where

a stand of narrowleaf willow (*Salix exigua*) had established. Goodding's black willow were observed as single scattered trees adjacent to ditches within the Project area and as many established riparian trees west of the Project area near the Mendota Wildlife Area and James Bypass.

Emergent wetland vegetation was found outside of the Project area and away from agriculture-dominated land uses in the shallow, permanently flooded areas in the James Bypass adjacent to the Mendota Wildlife Area, but limited emergent vegetation composed of hardstem bullrush (*Schoenoplectus acutus*) was well established around the shallow fringe areas of an impounded drainage north of SR 180 in the upper northwest portion of the Project area.

Wildlife

Few wildlife, mostly avian species, were observed during the survey. The low diversity of wildlife species likely using the Project area is due to large-scale conversion to agriculture, development, and continual human presence in an area that once supported native riparian habitats, marshes, seasonal wetlands, and perennial grasslands. Within the Project area, observations included red-tailed hawk (*Buteo jamaicensis*), red-winged blackbird (*Agelaius phoeniceus*), American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), mourning dove (*Zenaida macroura*), western scrub jay (*Aphelocoma californica*), killdeer (*Charadrius vociferus*), barn owl (*Tyto alba*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), American coot (*Fulica americana*), mallard (*Anas platyrhynchos*), and coyote (*Canis latrans*).

Other wildlife species typical of the southern San Joaquin Valley and tolerant of agricultural areas with frequent disturbances would occur throughout the Project area at different times of the year. Row crops, orchards, and vineyards are intensively managed and frequently disturbed, and available habitats are highly fragmented and therefore of limited value. Functioning wildlife corridors are primarily beyond the Project area in the James Bypass, San Joaquin River corridor and the CDFW reserves and easements to the west. Agricultural fields that are fallowed and rights-of-way within the Project area may serve as wildlife corridors for some adaptable species but are sparse and highly fragmented.

Special Status Plants, Wildlife, and Natural Communities

The Project's biological resources team reviewed the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) database, which lists species protected under the federal Endangered Species Act (ESA) and other protected resources such as critical habitat and migratory birds under the USFWS jurisdiction that are known or expected to occur within the project area or vicinity. The California Natural Diversity Database (CNDDB) was also queried for biological records of occurrence, or detections, for special status species and natural communities reported within the 10 U.S. Geological Survey 7.5-by 7.5-minute quadrangles for the Project area (CDFW 2021b). Plant and wildlife species and natural communities reported are shown in Tables 4-5 and 4-6.

Table 4-5. Special Status Species that May Occur within the Project Area and Vicinity

Scientific Name	Common Name	Fed. Status	State/CNPS Status	Occurrence within the Project Area ¹
Birds				
<i>Agelaius tricolor</i>	Tricolored blackbird	None	T, SSC/-	Possible
<i>Athene cunicularia</i>	Burrowing owl	None	SSC/-	Possible
<i>Buteo swainsoni</i>	Swainson's hawk	None	T/-	Possible
<i>Charadrius montanus</i>	Mountain plover	None	SSC/-	Possible
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	T	E/-	Absent

Scientific Name	Common Name	Fed. Status	State/CNPS Status	Occurrence within the Project Area ¹
<i>Falco columbaris</i>	Merlin	None	None/-	Absent
<i>Plegadis chihi</i>	White-faced ibis	None	None/-	Possible
<i>Riparia riparia</i>	Bank swallow	None	T/-	Possible
Mammals				
<i>Ammospermophilus nelsoni</i>	Nelson's antelope squirrel	None	T/-	Absent
<i>Dipodomys ingens</i>	Giant kangaroo rat	E	E/-	Absent
<i>Dipodomys nitratoide exilis</i>	Fresno kangaroo rat	E	E/-	Absent
<i>Eumops perotis californicus</i>	Western mastiff bat	None	SSC/-	Absent
<i>Lasiurus blossevillei</i>	Western red bat	None	SSC/-	Unlikely
<i>Myotis yumanensis</i>	Yuma myotis	None	None/-	Absent
<i>Perognathus inornatus</i>	San Joaquin pocket mouse	None	None/-	Absent
<i>Taxidea taxus</i>	American badger	None	SSC/-	Possible
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	E	T/-	Possible
Reptiles				
<i>Anniella pulchra</i>	Northern California legless lizard	None	SSC/-	Absent
<i>Emys marmorata</i>	Western pond turtle	None	SSC/-	Absent
<i>Gambelia sila</i>	Blunt-nosed leopard lizard	E	E, FP/-	Absent
<i>Masticophis flagellum ruddocki</i>	San Joaquin coachwhip	None	SSC/-	Absent
<i>Phrynosoma blainvillii</i>	Coast horned lizard	None	SSC/-	Absent
<i>Thamnophis gigas</i>	Giant garter snake	T	T/-	Possible
<i>Thamnophis hammondi</i>	Two-striped gartersnake	None	SSC/-	Absent
Amphibians				
<i>Ambystoma californiense</i>	California tiger salamander (Central CA DPS)	T	T/-	Absent
<i>Rana draytonii</i>	California red-legged frog	T	SSC/-	Absent
<i>Spea hammondi</i>	Western spadefoot	None	SSC/-	Absent
Fishes				
<i>Hypomesus transpacificus</i>	Delta smelt	T	T/-	Absent
Invertebrates				

Scientific Name	Common Name	Fed. Status	State/CNPS Status	Occurrence within the Project Area ¹
<i>Branchinecta longiantenna</i>	Longhorn fairy shrimp	E	None/-	Absent
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	T	None/-	Absent
<i>Lepidurus packardii</i>	Vernal pool tadpole shrimp	E	None/-	Absent
<i>Linderiella occidentalis</i>	California linderiella	None	None/-	Possible
Plants				
<i>Atriplex cordulata</i> var. <i>cordulata</i>	Heartscale	None	None/1B.2	Absent
<i>Atriplex cordulata</i> var. <i>erecticaulis</i>	Earlimart orache	None	None/1B.2	Absent
<i>Atriplex coronata</i> var. <i>vallicola</i>	Lost Hills crownscale	None	None/1B.2	Absent
<i>Atriplex depressa</i>	Brittlescale	None	None/1B.2	Absent
<i>Atriplex minuscula</i>	Lesser saltscale	None	None/1B.1	Absent
<i>Atriplex persistens</i>	Vernal pool smallscale	None	None/1B.2	Absent
<i>Atriplex subtilis</i>	Subtle orache	None	None/1B.2	Absent
<i>Chloropyron palmatum</i>	Palmate-bracted bird's beak	E	E/1B.1	Absent
<i>Delphinium recurvatum</i>	Recurved larkspur	None	None/1B.2	Absent
<i>Eriastrum hooveri</i>	Hoover's eriastrum	Delisted	None/4.2	Absent
<i>Eryngium spinosepalum</i>	Spiny-sepaed button-celery	None	None/1B.2	Absent
<i>Lasthenia chrysantha</i>	Alkali-sink goldfields	None	None/1B.2	Absent
<i>Layia munzii</i>	Munz's tidy tips	None	None/1B.2	Absent
<i>Monolopia congdonii</i>	San Joaquin woollythreads	E	None/1B.2	Absent
<i>Puccinellia simplex</i>	California alkali grass	None	None/1B.2	Absent
<i>Sagittaria sanfordii</i>	Sanford's arrowhead	None	None/1B.2	Unlikely

Scientific Name	Common Name	Fed. Status	State/CNPS Status	Occurrence within the Project Area ¹
<u>¹Occurrence within the project area:</u> Absent: No suitable habitat exists within the Project area and outside of CDFW lands. Unlikely: No suitable natural habitat exists within the Project area but may exist in the vicinity outside of CDFW lands, or a less than suitable man-made environment may substitute for the natural habitat in the vicinity. Possible: Less than suitable natural or man-made habitat may occur within the Project area. <u>Federal status:</u> E Listed as endangered under the Federal ESA T Listed as threatened under the Federal ESA <u>State Status:</u> E Listed as endangered under the California ESA T Listed as threatened under the California ESA SSC Species of concern as identified by the CDFW FP Fully protected as identified by the CDFW <u>CNPS Listing:</u> 1B Plant species that are rare, threatened, or endangered in California and elsewhere 4 Plant species that have limited distribution or infrequent throughout a broader area in California 2B Plants considered rare, threatened, or endangered in California, but more common elsewhere Threat Extension Codes: .1 – Seriously threatened in CA, .2 – Moderately threatened in CA				

Table 4-6. Sensitive Rare Natural Communities That Occur in the Project Area or Vicinity

Community Name	Brief Description
Northern Claypan Vernal Pool	Low, amphibious, herbaceous community dominated by annual grasses and herbs; characterized by very low microrelief and small to large pools.
Valley Sacaton Grassland	Tussock-forming grassland dominated by alkali sacaton (<i>Sporobolus airoides</i>); usually on sites intergrading with northern claypan vernal pool. Rare and often degraded from past land use.
Coastal and Valley Freshwater Marsh	Usually still, permanently flooded freshwater sites dominated by perennial, emergent monocots (<i>Schoenoplectus acutus</i> , <i>Typha</i> spp.).
Valley Sink Scrub	Strongly alkaline, saline playa-like depressions which are seasonally to intermittently flooded responding to localized rainfall; usually dominated by alkali-tolerant Chenopodiaceae.

Table 4-5 indicates 16 listed or otherwise special status plant and 32 listed or otherwise special status wildlife species that were evaluated for their potential to occur within the Project area. For each species, an evaluation of the presence of suitable habitat, information for relevant CNDDDB detections, and the potential for impacts from the proposed project is summarized in Appendix 5.

Two plant species evaluated for the Project area and vicinity, palmate bracted bird's beak and San Joaquin woollythreads, have federal ESA and/or state ESA listing. These species would not be expected to occur, have not been recorded as occurring within the Project area, and no suitable habitat for these species occurs within the Project area outside of the CDFW reserves. No listed or otherwise special status plant species were observed within the Project area during the survey. Though some special status plant species have historically been recorded as occurring within the Project area and vicinity, the Project area does not provide suitable habitats outside of the CDFW lands for these plant species and their occurrence is not expected due to the large-scale conversion of the area's natural habitats to agricultural uses and development.

Sixteen of the wildlife species evaluated for the Project area and vicinity have federal ESA or state ESA listing or candidate status. Of these, two have the potential to be impacted by the proposed project due to presence of potential habitat (Table 4-5). In addition, six species with special status in California but not also having federal or state ESA status have the potential to be impacted by the proposed project due to presence of potential habitat (Table 4-5). No listed or otherwise special status wildlife species were observed within the Project area during the biological reconnaissance survey. No special status natural communities having potential to support special status wildlife species were observed within the Project area outside of the CDFW reserves during the survey. No CDFW lands were accessed during the biological reconnaissance survey, but habitats in the eastern edge of the Mendota Wildlife Area were observed from points just east of the area.

Wetlands, Other Waters, and Groundwater Dependent Ecosystems

A query of the National Wetlands Inventory (NWI) and Wetlands Mapper, which produces *reconnaissance level information* for the location, type, and size of potential wetlands and deepwater habitats based on vegetation, visible hydrology, and geography, depicts areas of riverine wetland, freshwater forested/shrub wetland, freshwater emergent wetland, and freshwater pond wetland within the proposed Project area. These areas were visited during the reconnaissance field survey and again during a formal aquatic resources delineation (ARD). The formal ARD was conducted on May 3-5, 2022, to describe, characterize, and report on the irrigation canal and ditch features since the Project will have two possible diversion points to lift or divert water away from the Mendota Pool before being conveyed east through a bi-directional system of constructed canals to recharge facilities. The ARD surveyed for potential jurisdictional Waters of the U.S. following accepted U.S. Army Corps of Engineers (USACE) methodology.

The hydrology of the entire region has been significantly and permanently altered. No natural surface water features occur in the MAGSA boundary. Most areas visited throughout the Project area no longer support wetlands due to manipulation of the natural hydrology as needed to support agricultural uses, are depicted in recent aerial photography as row and field crops, orchards, vineyards, or another agricultural use, and were field verified as areas occupied by row and field crops, orchards, vineyards, or another agricultural use such as tailwater or stock ponds. Surface water features are limited to irrigation runoff ditches and canals, few stock ponds, and usually lined effluent capture ponds. Surface water was observed in some canals and ditches, but most were dry. These excavated features in uplands are characterized by controlled flows and channel forms that are not influenced by channel-forming processes and discharge patterns associated with the local hydrologic regime. Precipitation is not a significant source of hydrology within the review area or the region, and groundwater is the primary source of irrigation water in MAGSA.

No wetlands were delineated in the ARD review area, which consisted of approximately 1,500 acres within MAGSA where project infrastructure construction and operations are planned in the main canal alignments. Approximately 76 acres of non-wetland waters were delineated in the ARD review area. The non-wetland waters (approximately 106,500 linear feet) were mainly linear agricultural irrigation water delivery conveyance and/or runoff (tailwater) and canal features which are manmade and excavated in uplands. The jurisdictional status of these features is under review by the USACE Sacramento District.

In addition to the NWI, the Natural Communities dataset published by the California Department of Water Resources was consulted prior to the field survey. These data do not represent the agency's determination of a groundwater dependent ecosystem (GDE) but are intended for use by GSAs or others as an aid in identifying GDEs in California and includes two habitat classes associated with groundwater: (1) wetland features commonly associated with the surface expression of groundwater under natural, unmodified conditions; and (2) vegetation types commonly associated with the sub-surface presence of groundwater. The wetland features identified in this dataset most often align with a subset of the NWI dataset, and the vegetation features include large trees such as sequoia (*Sequoia sempervirens*), Douglas-

fir (*Pseudotsuga menziesii*), and Goodding's black willow (*Salix gooddingii*), and vegetation communities, such as riparian mixed hardwoods, willows, alkaline mixed grasses, and wet meadows. The dataset is limited, and a thorough understanding of geology, groundwater elevations, hydrology, and land use of a certain area is necessary for positive identification of groundwater dependent ecosystems (Klausmeyer et al., 2018).

Given that the average depth of groundwater in MAGSA is very deep, vegetation communities which are likely indicative of potential GDEs, such as Goodding's black willow stands within the Project area are not likely to be hydrologically supported by groundwater. Very few large trees were observed throughout the Project area, and they are associated with settlement areas that are irrigated. Some portions or all of the CDFW reserves habitats in and adjacent to the Project area would qualify as GDEs.

4.4.2 Regulatory Setting

4.4.2.1 Federal

Federal Endangered Species Act (FESA). The 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 (MBTA). 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 California Department of Fish and Game (CDFG) Code.

Federal Clean Water Act (CWA). 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

Army 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.

Bald and Golden Eagle Protection Act. The Bald and Golden Eagle Protection Act (16 USC 668-668c) prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald or golden eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

4.4.2.2 State

The California Endangered Species Act (CESA). The 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).

California Fish and Wildlife Code Sections 1600-1616. Under Sections 1600-1616, CDFW regulates all diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream or lake, which support fish or wildlife (i.e., bed to bank). The CDFW defines a "stream" (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." The CDFW has interpreted the term "streambed" to encompass all portions of the bed, banks, and channel of any stream, including intermittent and ephemeral streams, extending laterally to the upland edge of riparian vegetation. Construction and maintenance actions that may affect the streambed or divert water from a stream or lake would be subject to creation of a Lake and Streambed Alteration Agreement under Section 1602. This agreement would include measures to protect fish, wildlife, and vegetation that may be affected during construction in the streambed.

California Fish and Wildlife Code Sections 3503 and 3503.5 Protection of Bird Nests and Raptors. Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 specifically states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders falconiformes and strigiformes), including their nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. This statute does not provide for the issuance of any type of incidental take permit.

California Fish and Wildlife Code Fully Protected Species. Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the CDFW Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take of fully protected species.

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.

4.4.2.3 County and Regional

Fresno County General Plan. The Fresno County General Plan addresses goals and policies relevant for Biological Resources within the Project Area in the Wetland and Riparian Areas (Section D), Fish and Wildlife Habitat (Section E), and Vegetation (Section F) sections of *Part 2: Open Space and Conservation Element* of the plan.

4.4.3 Potential Impacts

BIO a): Would 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 Impact with Mitigation Incorporated). MAGSA, in coordination with the Bureau of Reclamation, has prepared a Biological Evaluation (BE) to document potential effects to ESA listed species, and has conducted informal consultation with USFWS (Tetra Tech 2022). The BE indicated that the only two federally listed species that may occur in the project area include the San Joaquin kit fox and the giant garter snake, and concluded that the project may affect, but would not adversely affect, these species assuming mitigation measures are incorporated. USFWS has provided a letter concurring with these findings (USFWS 2024; Appendix 6).

Potential habitats observed within the Project area, outside of the CDFW reserves, include limited area of manmade habitats such as impoundments with fringing emergent wetland habitat and irrigation and drainage ditches. These areas may substitute for natural habitat utilized by species dependent on permanently or seasonally flooded habitats but are only marginally suitable due to continual disturbance and human presence. Also, burrowing owl, Swainson’s hawk, and San Joaquin kit fox may nest/den in or near rights-of-way and frequently disturbed agricultural zones or hunt preferred prey in agriculture crops.

Although MAGSA intends to avoid potential habitats for these species, the potential for them to occur within the Project area still exists. Therefore, incorporation of mitigation measures BIO-1 through BIO-8 will ensure that impacts to listed or otherwise special status species would be reduced to less than significant with mitigation incorporation.

Species with aquatic or amphibious habitat requirements

- **Potential to Occur:** Although no special status species with these habitat requirements were observed during the biological reconnaissance survey, it is possible for California linderiella, giant garter snake, and tricolored blackbird to occur within the Project area or immediate vicinity.

California linderiella requires vernal pool habitat which occurs in the Kerman and Alkali Sink Ecological Reserves but may also utilize man-made stock ponds, reservoirs, and ditches, which do occur in the Project area, as habitat. Emergent bulrush wetland habitat adjacent to permanently flooded/ponded shallow water habitat occurs over a limited extent within the Project area and immediate vicinity and may be suitable habitat for giant garter snake and tricolored blackbird. These areas may also offer suitable amphibian/reptilian basking and dispersal upland habitat if it were not frequently disturbed by agricultural uses. No rice fields occur in MAGSA or adjacent to MAGSA.

- **Potential Impacts:** Construction and ground-disturbing activities, including excavation, temporary stockpiling, and heavy equipment presence would occur in inundated features of the Mendota Pool or near manmade features such as agricultural canals offering suitable habitat for the more adaptable of these species like the giant garter snake. However, the giant garter snake is scarce throughout its Central Valley Range. Construction and operation of the Project may therefore result in adverse effects to species with aquatic or amphibious habitat requirements. The project proponent will implement the avoidance and mitigation measures under BIO-2 through BIO-4. By implementing these measures, the potential impacts would be reduced to a level of less than significant.

Burrowing owl

- **Potential to Occur:** Burrowing owls in agricultural environments may use roadsides, fallow fields, and water conveyance structures (earthen ditches, open canals, and drains) surrounded by crops to nest. They are tolerant of human presence. Mammal burrows, like those excavated by the California ground squirrel and observed in various portions of the project area, are also utilized by burrowing owls for nesting. Culverts and pipes may also be used as nest sites.
- **Potential Impacts:** Ground-disturbing activities, including excavation, temporary stockpiling, and heavy equipment presence, during the proposed project's construction may result in destruction of burrowing owl nests and/or burrowing owl injury and mortality. This would constitute a violation of state regulations and would be considered a significant impact. The project proponent will implement the avoidance and mitigation measures under BIO-5. By implementing these measures, the potential impacts would be reduced to a level of less than significant.

Swainson's hawk

- **Potential to Occur:** Several mature trees found within the project area offer nesting habitat for Swainson's hawks. Such trees located in farm residence settlement areas are generally well outside of the area that would be affected by construction. Potential foraging habitat occurs within the project area where field crops and a few weedy and fallowed fields are found. Other

areas are intensively managed orchards and row crops that are unlikely to be utilized by Swainson's hawks for foraging.

- **Potential Impacts:** Swainson's hawks may use larger trees in the project area for nesting. Excavation occurring during construction near these trees during the nesting season of February 1–August 31 may result in nest abandonment and directly and adversely affect the hawk's ability to successfully reproduce. This would constitute a violation of state and federal regulations and would be considered a significant impact. The project proponent will implement the avoidance and mitigation measures under BIO-6. By implementing these measures, the potential impacts would be reduced to a level of less than significant.

Fresno kangaroo rat

- **Potential to Occur:** Burrows were found at several locales in and adjacent to the Action Area, along dirt roads, ditches, and at the edges of fields and facilities. Most burrow entrances were between 3-5 inches wide, typical of ground squirrel burrows and larger than typical Fresno kangaroo rat (FKR) burrows. In May 2022, reconnaissance-level surveys targeted an area thought to have conditions potentially supporting FKR, including a fallow field and soil-capped inactive landfill covering approximately 70 acres. However, the area was found to have less than suitable to poor habitat conditions for kangaroo rats (S. McDonald, electronic mail, 20 May 2022). The area had signs of high usage by valley pocket gophers (*Thomomys bottae*) and regular usage by a small population of California ground squirrels (*Otospermophilus beecheyi*). Although the habitat was poor, it is not regularly disturbed and a few smaller areas within the larger fallow field may support kangaroo rats. Subsequent surveys by USFWS biologists found that the habitat would not likely support FKR, and the species is considered absent from the project area.
- **Potential Impacts:** Since this species has been deemed absent from the project area by USFWS, there would be no impact.

San Joaquin kit fox

- **Potential to Occur:** The Project area is within the current and historic range of this species, and four San Joaquin kit fox (SJKF) occurrences are shown within the greater MAGSA boundary in the CNDDDB database. However, occurrences are historical (> 20 yrs. old) (CDFW 2021). Intensively managed, frequently disturbed agricultural lands and development related to animal farming operations and crop production offer low-quality habitat for SJKF and their prey base. Aside from the ecological reserves, lands that surround the Action Area are similarly developed and of low quality. SJKF may disperse into agricultural areas if adequate prey species are available, but they would be unlikely to use the project area for any purpose other than to migrate between suitable habitat locations elsewhere in the region. SJKF may use the adjacent MWA, James Bypass, or the San Joaquin River corridors for dispersal.
- **Potential Impacts:** Potential impacts may occur if SJKF, active year-round, were to den in the project area. Squirrel burrows were observed in several areas on and around the project area during the reconnaissance survey (Appendix 5). Squirrel burrows could be modified and used by SJKF, though no SJKF or evidence of SJKF use were observed. SJKF may also den in human-made structures, such as culverts, abandoned pipes, and roadbed banks which occur throughout the project area, including the Main Canal alignment where excavation will occur. Disturbing SJKF dens or harming them during construction excavation activities would constitute a violation of state and federal regulations and would be considered a significant impact. The project proponent will implement the avoidance and mitigation measures under BIO-8. Therefore, the potential impacts will be reduced to a level of less than significant.

BIO b): Would the project 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 impact). Limited riparian habitat occurs within the Project area. The San Joaquin River and associated valley foothill riparian habitats lie along the northern MAGSA boundary but would not be affected by project construction or operations. The pump stations would be located in an existing turnout and excavated canal with limited riparian habitat and adjacent to entirely agriculture land uses north of the James Bypass riparian habitat. Therefore, less than significant impact would occur to riparian habitat.

Four sensitive communities were identified by the CDFW as occurring within the Project and/or the Project vicinity. These community types are primarily associated with the CDFW reserves (Table 4-6). No Project actions would occur within these community types either within the CDFW reserves or elsewhere in the Project area; therefore, no impact would occur to sensitive natural communities.

BIO c): Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

(Less than significant impact with mitigation incorporation). The Project will have two possible diversion points to lift or divert water away from the Mendota Pool where temporary adverse effects to state or federally protected aquatic resources may occur during construction. The first of these is located where Jensen Ave., and the Jensen Canal, meet the eastern edge of the Mendota Wildlife Area. In this location, three pumps move water to the east through a conveyance under a set of railroad tracks to the Jensen Canal; however, this project would require replacement and upgrading of existing infrastructure for additional capacity. The second is at the northwest end of the James Bypass where it connects to the Fresno Slough. Similarly, there is a facility at this location that draws water from the Fresno Slough into an irrigation water conveyance canal, but it would need to be upgraded for additional capacity.

An ARD was completed for the project in June 2022 and submitted to the USACE Sacramento District for an Approved Jurisdictional Determination (AJD). The AJD, when received from the USACE, will be used to support the decisions about whether permits under CWA Sections 404 and 401 will be required.

The proposed construction action has potential to temporarily alter surface water quality at these Mendota Pool pump intake locations. Potential direct effects include increased suspended sediments and turbidity which would remain localized to the immediate work area and would be temporary, occurring only during installation and removal of work area isolations such as sandbag cofferdams or precast concrete barriers. It's likely a minimal amount of fill would be placed in these waters during construction of the pump stations and culverts. Since water bank infrastructure is primarily being constructed in agriculture areas and is not expected to convert aquatic habitat from its existing condition to another habitat type, no substantial adverse effect would be expected. In addition to maintaining strict compliance with necessary CWA Section 404/401 permit requirements once issued, the Project proponent will implement the avoidance and mitigation measure BIO-4. By implementing this measure and additional BMPs specific to in-water work, the potential impacts would be reduced to a level of less than significant with mitigation incorporation.

BIO d): Would the project 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). Several areas adjacent to but outside of the proposed project area, including the James Bypass, Mendota Wildlife Area, Alkali Sink Ecological Reserve, and an

undesigned State conservation easement, are likely used as wildlife corridors and native wildlife nursery areas. Areas with potential habitat will not be directly affected by the proposed Project. Rights-of-way, agricultural areas, and developed areas, even if regularly disturbed and fragmented, are likely used by native wildlife species such as fox, coyote, rabbit, and others at night for movement. Although numerous ditches and irrigation conveyance canals occur throughout the Project area, additional canals constructed for the Project may interfere with the movement of the limited wildlife using the Project area. Any canals will have regular crossings that can be used by wildlife, and this impact be less than significant.

The proposed project is located within the Pacific Flyway used by migratory bird species during annual migrations, and the Mendota Wildlife Area is an Important Bird Area of State significance. Seasonally flooded areas such as the Mendota Wildlife Area and occasionally flooded areas such as fallowed fields provide important stopover points for resting and foraging habitat for migratory waterfowl. Beneficial effects would likely occur in some years when recharge basins developed in eastern portions of the Project area serve as seasonal inundated habitat for migratory shorebirds and waterfowl. Any impacts would be less than significant.

BIO e): Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

(No Impact). No local policies or ordinances protecting biological resources have been identified within the proposed Project area; therefore, no impact would occur.

BIO f): Would the project 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). No adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan extends into the proposed Project area. The draft *Aera Energy Southwest San Joaquin Valley HCP and NCCP* extends into Fresno County but not east of Interstate 5; therefore, no impact would occur.

4.5 CULTURAL RESOURCES (CUL)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would The Project:				
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) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

This section relies on the information and findings presented in the Archaeological Resources Investigation for the Aquaterra Groundwater Bank Project (Tetra Tech 2023). The archaeological report details the results of the archaeological resources study and includes delineation of an Area of Potential Effects (APE); records searches conducted by the California Historical Resources Information System (CHRIS) Southern San Joaquin Valley Information Center (SSJVIC); Sacred Lands File (SLF) searches conducted by the California Native American Heritage Commission (NAHC); a review of historical topographic maps and aerial photographs; and pedestrian field surveys.

Tetra Tech archaeologists conducted a Class III Inventory / Phase 1 Cultural Resources Survey over the APE to identify historical resources or historical properties within the Project area. The purposes of the inventory and survey investigation were 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 CEQA, and to ensure that no significant adverse effects or impacts to historical resources would 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.

Although the report is confidential and not available for public review (16 U.S. Code § 470hh, California Government Code § 6254.10), information from the report is used below in the description of baseline conditions, impact analysis, and recommended mitigation measures.

4.5.1 Environmental Setting

The proposed project area (or area of potential effects: APE) is defined as the area within the project boundary and adjacent areas to 200 feet. It is situated in the Great Central Valley of California, which has a long history of human occupation evident from the diversity of recorded cultural resources (i.e., archaeological and built environment) on the landscape. The Central Valley contained a mosaic of biological diversity that was supported by topographic, geological, climatic and hydrological conditions conducive to abundant resource availability (e.g., plants, animals, stone) and aboriginal populations broadly used the landscape south of the San Joaquin River and east of the Fresno Slough. Cultural resource types related to this use have been widely recorded within the region. The project is within the ancestral territory of the Northern Valley Yokuts, who occupied village and seasonal localities throughout the year. Historic use of the landscape is evident by recorded historic era resources primarily associated with agriculture such as historic refuse, structures, canals, and roads. The historic and contemporary disturbances to the landscape include agricultural fields of permanent and rotational crops, seasonal disking of fields in preparation for crops, and supporting infrastructure such as water conveyance systems, roads, farm outbuildings, residences, and other components of the built environment. Deposits within the APE consist of Pleistocene to latest Holocene aged alluvium deposits. Alluvium deposition occurring from the late Pleistocene to the latest Holocene has been deposited over the course of known human occupation in the region and may contain buried cultural deposits (Meyer et al. 2010). This is especially the case in areas near water sources with landforms suitable for habitation. Note that prior agricultural uses such as cultivation of various crops do not preclude the potential for significant resources to be present below the depth of cultivation within alluvium deposits. Secondly, although no longer in their original contexts, there is a possibility that disturbed soils contain tribal cultural resources that are important to tribes.

The record search identified 31 previously recorded resources within the APE: 13 prehistoric sites (Pitkachi Village, habitation sites, cemetery, mounds, lithic and groundstone scatters); 1 dual component (prehistoric/built environment: residence); 1 historic refuse site; and 16 built environment sites: residential structures, Hanford and Summit Lake railroad, Town of Bowles: Chinese American farming community, Big Sandridge Canal, earthen levee, Pacific Gas and Electric Company's (PG&E) Panoche-Kearney 230 kV transmission line, James Bypass – also termed Fresno Slough Bypass, James Irrigation District Lateral R Canal, Raisin City Dragways, and Gates-Gregg 230 kV Transmission line.

The 13 prehistoric archaeological resources (Pitkachi Village, P-10-000074, -000314, -000398, -000495, -000562, -000565, -000567, -0000784, -0021312, -005714, -005715, P-20-00301), one dual component site (P-10-000566), and one historic refuse (P-10-006134) archaeological resource have not been evaluated for eligibility listing to the CRHR or NRHP.

A total of seven built environment previously recorded and 15 newly recorded cultural resources were identified in the Project area (Table 4-7). Of these resources, none are considered historic properties pursuant to Section 106 of the National Historic Preservation Act (NHPA) and historical resources pursuant to CEQA Guidelines Section 15064.5. One of the built environment resources, P-10-004303 (Japanese Bowles buildings and general agricultural area) has not been evaluated for the National Register of Historic Places (NRHP) or the California Register of Historical Resources (CRHR). A built environment and geoarchaeological field study will be completed in Fall of 2024.

Table 4-7: Summary of Identified Cultural Resources

Primary No.	Time Period	Site Type/Name	NRHP Eligibility	CRHR Eligibility
Previously Recorded Resources				
P-10-003930	Historic/Built Environment	Structure: Hanford & Summit Lake Railway: tracks	Not Eligible.	Not Eligible.
P-10-004303	Historic/Built Environment	Japanese Bowles buildings and agricultural area.	Not Evaluated	Not Evaluated
P-10-006614	Historic/Built Environment	Structure: Built Environment: Panoche-Kearney 230 kilovolt transmission line	Not Eligible	Not Eligible
P-10-006640	Historic/Built Environment	Structure: Built Environment, Transmission Line: Gates-Gregg 230 kilovolt Transmission Line	Not Eligible	Not Eligible
P-10-000074	Prehistoric	Habitation	Not Eligible (no longer extant, site location within deep canal).	Not Eligible (no longer extant, site location within deep canal).
P-10-007057	Prehistoric	Isolate: a basalt flake	Not Eligible (no longer extant, site location within deep canal).	Not Eligible (no longer extant, site location within deep canal).
P-10-007058	Prehistoric	Isolate: a basalt flake	Not Eligible (no longer extant, site location within deep canal).	Not Eligible (no longer extant, site location within deep canal).
Archaeological Resources Identified as a Result of the Pedestrian Surface Survey				
P-10-007436	Historic	Historic-era refuse scatter.	Not Eligible	Not Eligible
P-10-007437	Historic	Historic-era refuse scatter, farm equipment, well.	Not Eligible	Not Eligible
P-10-007438	Historic	Historic-era refuse scatter.	Not Eligible	Not Eligible
P-10-007439	Historic	Historic-era refuse scatter.	Not Eligible	Not Eligible
P-10-007440	Historic	Historic-era refuse scatter.	Not Eligible	Not Eligible
P-10-007429	Historic	Isolate: clear glass fragment.	Not Eligible	Not Eligible

Primary No.	Time Period	Site Type/Name	NRHP Eligibility	CRHR Eligibility
P-10-007430	Prehistoric	Isolate: chert biface fragment.	Not Eligible	Not Eligible
P-10-007431	Prehistoric	Isolate: chert biface fragment.	Not Eligible	Not Eligible
P-10-007432	Prehistoric	Isolate: chert biface fragment.	Not Eligible	Not Eligible
P-10-007433	Historic	Isolate: broken green bottle shards (7-Up).	Not Eligible	Not Eligible
P-10-007434	Historic	Isolate: green glass shard, ceramic shards.	Not Eligible	Not Eligible
P-10-007434	Historic	Isolate: earthenware shard.	Not Eligible	Not Eligible
P-10-007441	Historic	Isolate: aqua glass shard.	Not Eligible	Not Eligible
P-10-007434	Historic	Isolate: colorless glass shard (Coca-Cola type)	Not Eligible	Not Eligible
P-10-007443	Historic	Isolate: two Jadeite plate fragments	Not Eligible	Not Eligible

The NAHC Sacred Lands File results were positive and consultation with tribes is required by the lead state agency under Assembly Bill 52. Tribal Cultural Resources and agency consultation is discussed in section 4.18.

4.5.2 Regulatory Setting

4.5.2.1 Federal

National Historic Preservation Act, Section 106: The principal federal law addressing cultural resources is the NHPA of 1966, as amended (16 United States Code [USC], Section 470), and its implementing regulations (36 Code of Federal Regulations 800), which primarily address compliance with Section 106 of the NHPA. The NHPA is the principal federal law guiding federal agency action pertaining to treatment of cultural, archaeological, and historic resources. Section 106 (54 USC Section 306108) of the NHPA requires that federal agencies consider the effects of their undertakings on “historic properties” listed or eligible for listing on the NRHP and give the Advisory Council on Historic Preservation and SHPO a reasonable opportunity to comment on the Undertaking. A historic property is “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register of Historic Places” (54 USC Section 306108).

4.5.2.2 State

CEQA (Section 21084.1). This section requires a lead state agency determine whether a project could have a substantial adverse change in the significance of a historical resource or tribal cultural resources (Public Resource Code [PRC] Section 21074 [a][1][A]-[B]).

California Health and Safety Code, Sections 7052 and 7050.5. These sections state that it is a felony to disturb Native American burials. Section 7050.5 requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American.

California Native American Historical, Cultural, and Sacred Sites Act. The act applies to both state and private lands. The Act requires that upon discovery of human remains, construction or excavation activity cease and that the county coroner be notified.

California Public Resource Code, Section 5097. This code section specifies the procedures to be followed in the event of an unexpected discovery of human remains on non-federal land. The disposition of Native American remains falls within the jurisdiction of the NAHC.

California Code Penal Code Part 1, Title 14, Section 622. This section states that every person, not the owner thereof, who willfully injures, disfigures, defaces, or destroys any object or thing of archaeological or historical interest or value, whether situated on private lands or within any public park or place, is guilty of a misdemeanor.

Assembly Bill 52. Under CEQA, AB 52 requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project.

4.5.2.3 County and Regional

Fresno County General Plan. The current plan, adopted in 2000, is in the process of being amended, and a public review draft was made available in July 2021 (Fresno County 2021a, 2021b, 2021c, 2021d). The Plan provides for a comprehensive, long-term framework designed to protect Fresno County's cultural resources (and other resources) while allowing for economic development. The General Plan's Historical and Cultural Goals and Policies applicable to the proposed project are as follows:

Policy OS-J.1: The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archaeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of Project alternatives to preserve archaeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.

Policy OS-J.2: The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the locations of archaeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.

Policy OS-J.3: The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.

Policy OS-J.4: The County shall maintain an inventory of all sites and structures in the County determined to be of historical significance (Index of Historic Properties in Fresno County).

Policy OS-J.5: The County shall support the registration of property owners and others of cultural resources in appropriate landmark designations (i.e., National Register of Historic Places, California Historical Landmarks, Points of Historical Interest, or Local Landmark).

Policy OS-J.6: The County shall provide for the placement of historical markers or signs on adjacent County roadways and major thoroughfares to attract and inform visitors of important historic resource sites. If such sites are open to the public, the County shall ensure that access is controlled to prevent damage or vandalism.

Policy OS-J.7: The County shall use the State Historic Building Code and existing legislation and ordinances to encourage preservation of cultural resources and their contributing environment.

Policy OS-J.8: The County shall support efforts of other organizations and agencies to preserve and enhance historic resources for educational and cultural purposes through maintenance and development of interpretive services and facilities at County recreational areas and other sites.

4.5.3 Potential Impacts

CR a): Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

(Less than Significant Impact with Mitigation Incorporation) The SSJVIC record search identified seven previously recorded cultural resources within the Project area, including the Bowles Historic District (P-10-004303: Japanese American farmland/community and Buddhist church) that is potentially eligible to the NRHP and CRHR; sites P-10-003930 (railway tracks), P-10-006614 (Panoche-Kearney 230 kV transmission line), and P-10-006640 (Gates-Gregg 230 kV transmission line), which are not eligible to the CRHR; three prehistoric archaeological sites (a lithic scatter, lithic/ceramic scatter, lithic scatter/bedrock milling feature, and lithic scatter/bedrock milling features/hearth), and five historic sites (refuse scatters, glass and ceramic shards, chert fragments). The prehistoric and historic sites are ineligible for the CRHR.

Under CEQA, a significant impact could occur if the proposed project resulted in a substantial adverse change in the significance of a historical resource; such a change includes physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource is materially impaired. Material impairment includes demolition or alteration in an adverse manner to those physical characteristics of the historical resource that convey its historical significance and that justify its inclusion, or eligibility for inclusion, in the California Register. The proposed project would not include the physical alteration of any historical resources in the APE. Any alterations to the immediate surroundings resulting from the proposed project would be minimal since the features proposed for construction are consistent with the surrounding landscape and land uses. Therefore, the proposed project would have a less than significant impact to any historical resources.

Any subsurface resources located within the recharge basins would potentially be subjected to temporary flooding, which may result in erosion and/or siltation (i.e., burying), depending on the rate of water flow at each site's location; or through the construction of open channel systems. If water flows are sufficiently low enough so as to only deposit sediments atop the resources, avoiding erosion and essentially capping them, this would be a beneficial impact that would protect the sites from surface disturbances. However, the rate of water flow at each site location is unclear.

Given the size of the APE, subsurface sampling will only provide information on a relatively small portion of the area that will be disturbed during construction. Therefore, if construction ground disturbance depths extend to native soils, there would be a potential to impact previously unrecorded subsurface cultural resources, including those that may qualify as historical properties, pursuant to Section 106 of the NHPA, or historical resources, pursuant to CEQA Guidelines Section 15064.5. If archaeological resources are discovered, impacts would be significant if the proposed project activities resulted in an adverse effect to, or caused a substantial adverse change in, the significance of an archaeological resource that qualifies as a historic property or historical resource. With implementation of Mitigation Measures CUL-1 and CUL-2, impacts to previously unrecorded cultural resources will be less than significant.

CR b): Would the project cause a substantial adverse change in the significance of an archeological resource as defined in §15064.5?

(Less than Significant Impact with Mitigation Incorporation) The three archaeological resources previously recorded (P-10-000074, P-10-007057, and P-10-007058) in the Project area were field checked during the pedestrian survey and are no longer extant and are presumably destroyed due to the construction of a deeply excavated canal that exists within the previously recorded resource locations. The remaining newly recorded archaeological resources identified within the Project area were evaluated and do not qualify as historic properties, pursuant to Section 106 of the NHPA, or historical resources, pursuant to CEQA Guidelines Section 15064.5, or unique archaeological resources, as defined in PRC Section 21083.2(g). The Project area consists of various ground disturbance levels that could extend below the layers of previous disturbances (specifically, main canal and laterals). Depending upon the Project area, the degree of sensitivity for subsurface archaeological resources ranges from very low to moderately high. It is possible that subsurface ground-disturbing construction activities in undisturbed deposits within the more sensitive locations of the Project area could encounter unrecorded subsurface archaeological deposits. If archaeological resources are discovered, effects/impacts would be significant if proposed project activities result in an adverse effect to or cause a substantial adverse change in the significance of an archaeological resource. Mitigation Measure CUL-1 requires worker training and CUL-2 requires a cultural resource monitoring and inadvertent discovery plan. Therefore, impacts to archaeological resources would be less than significant impact with mitigation incorporated.

CR c): Would the project disturb any human remains, including those interred outside of formal cemeteries?

(Less than Significant Impact with Mitigation Incorporation) No known cemeteries or human remains were identified within the Project area. Also, the land use designations for the Project area do not include cemetery uses. Therefore, the Proposed Project is not anticipated to affect/impact any human remains. However, since the nature of the Proposed Project would involve ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains.

Federal and state laws require all project excavation activities to halt if human remains are encountered and the county coroner must be notified. Any discovery of human remains during Project-related activities would be treated in accordance with federal laws and PRC Section 5097.98 and Section 7050.5 of the State Health and Safety Code. Pursuant to State HSC § 7050.5, if human remains and/or cultural items defined by the Health and Safety Code, Section §7050.5, are inadvertently discovered during construction activities, all work within a 100-foot radius of the find or an area reasonably suspected to overlie adjacent remains (whichever is larger) will cease, the find will be flagged and protected for avoidance, and the Fresno County Coroner will be contacted immediately. The remains must be securely protected, and project personnel must ensure confidentiality of the find on a need-to-know basis and ensure that the remains are treated with dignity, not touched, moved, photographed, discussed on social media sources (e.g., Facebook, Twitter), or further disturbed. Work may not resume in the vicinity of the protected area until approvals are received by the lead state and federal agency.

The specific state regulations regarding proper handling of previously unknown human remains encountered during construction are specified above and the Project will comply with the state regulations to avoid significant impacts on human remains. In conjunction with the training, monitoring, and inadvertent discovery procedures identified in Mitigation Measures CUL-1 and CUL-2, impacts to human remains would be less than significant with mitigation incorporated.

4.6 ENERGY (ENE)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

4.6.1 Environmental Setting

Most of the natural gas and electricity used in the project area would be provided by Pacific Gas and Electric (PG&E), with some natural gas in the southeast corner of the project area provided by SoCal Gas. Primary uses of energy in the proposed project area are residences, agricultural stationary uses such as groundwater wells and surface water pumps, and agricultural mobile uses such as equipment and associated vehicles. Propane pumps associated with the proposed project would be refueled with truck deliveries to the pump stations as needed.

4.6.2 Regulatory Setting

4.6.2.1 Federal

There are no federal regulations relating to energy that are applicable to the Project or the Project site.

4.6.2.2 State

Warren-Alquist Act. The Warren-Alquist Act was created to respond to energy resource needs in the 1970's and created the California Energy Commission. The California Energy Commission, California Public Utilities Commission and the California Independent System Operator shape policies on energy standards, supply, and usage. California Energy Code is in Title 24, Part 6 of the CCR. It includes standards to increase energy efficiency in residential and non-residential buildings.

Clean Energy and Pollution Reduction Act. The Clean Energy and Pollution Reduction Act (SB 350) establishes clean energy, clean air, and greenhouse gas (GHG) reduction goals, including reducing GHG to 40% below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050. SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 by 2030. This objective will increase the use of Renewables Portfolio Standard (RPS) eligible resources, including solar, wind, biomass, geothermal, and others. SB 350 also requires the state to double statewide energy efficiency savings in electricity and natural gas end uses by 2030.

4.6.2.3 County and Regional

San Joaquin Valley Air Pollution Control District Climate Change Action Plan (CCAP). In August 2008, the SJVAPCD Governing Board adopted the CCAP. The CCAP directed the District Air Pollution

Control Officer to develop guidance to assist Lead Agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project specific GHG emissions on global climate change.

San Joaquin Valley Air Pollution Control District (SJVAPCD) Guidance for Addressing Greenhouse Gas Emissions. On December 17, 2009, the SJVAPCD adopted the guidance: 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 guidance and policy rely on the use of performance-based standards, otherwise known as Best Performance Standards (BPS), to assess significance of project specific greenhouse gas emissions on global climate change during the environmental review process, as required by CEQA.

4.6.3 Potential Impacts

ENE a): Would the potential project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

(Less Than Significant Impact) During construction, there would be a temporary increase in fuel demand (gasoline and diesel) from the use of construction equipment, truck trips, and vehicle trips generated by construction workers. The construction contractor will be required to ensure that they use the most fuel-efficient equipment and methods available. The minimum amount of grading and distribution of soils will be performed, and all excavated soils will be distributed within the project area rather than being hauled to a disposal facility. Most excavated soils will be used either in canal construction or to build recharge basin berms. Idling times will be limited, and any other BMP that may contribute to energy efficiency will be followed.

Construction equipment will be operated in accordance with Title 13, Division 3, Chapter 10 of the California Code of Regulations. This minimizes equipment idling time and eliminates resource wastefulness. Energy consumed during construction activities would not result in the wasteful, inefficient, and unnecessary consumption of energy. Impacts associated with construction would be less than significant.

Title 24 Building Energy Efficiency Standards provides guidance on construction techniques to maximize energy conservation. Contractors and owners are encouraged to use recycled materials and products originating from nearby sources to reduce materials costs. Materials used in construction and construction vehicle fuel energy would not involve the wasteful, inefficient, or unnecessary consumption of energy. Building efficiency standards would be applied to each pump station. Efficiency standards would also be applied to groundwater wells, in compliance with DWR Bulletin 74. Energy impacts associated with long-term operation of pump station buildings and groundwater wells would be less than significant.

Operations. Pumps will only be operated for receiving deposited waters to the groundwater bank, and when needed, to move extracted water back to the Mendota Pool for withdrawal. Energy usage to send extracted water to the Pool will be minimal, because MAGSA slopes down to the west, and most movement will be assisted by gravity. The pumps are expected to operate a maximum of 153 days per year (Table 4-8). Pumps used in this project will include electric, natural gas, and propane pumps. The amount of energy used during project operation would primarily correlate to the size of the proposed pump stations and the energy consumption of associated frequency of use, as well as to the extraction well pumps and any movement needed for extraction.

Table 4-8: Pump and Well Specifications

Pump and Well Specifications		Design Criteria ¹	Unit
Recovery System Required for Maximum Operations			
	Annual	148,000	AF
Recovery Well Station			
	Power	Electric	n/a
	Type	Centrifugal	n/a
	Estimated Pump Capacity ¹	2500	GPM
	Estimated Well Depth ^{1,2}	450	ft
	Estimated Typical Design Depth to GW during Extraction ³	450	ft
	Estimated Power (calculated)	284	HP
		209	kW
	Estimated Pump Efficiency (typical) ⁴	50	%
	Estimated Power (calculated)	568	HP
		418	kW
Maximum Recovery Year			
	Period of Operation ¹	May - Sept	months
	Number of Days	153	days
	Number of Pumps operating simultaneously ¹	88	#
Estimated Annual Maximum Power Demand		134,995	MWh
Notes			
1 Design Criteria for average recovery well station.			
2 Well depths estimated in the 300 - 600 ft range. An average depth of 500 ft is assumed			
3 Pumping recovery above Corcoran Clay.			
4 Agricultural Pumping Efficiency Program. Center for Irrigation Technology.			

Groundwater pumping. MAGSA estimates a 135 GWh electrical power demand for groundwater pumping of 148,000 AF from the recovery wells, assuming a year of maximum recovery, average groundwater pumping depth of 450 ft., and 50 percent efficiency for groundwater pumps (MAGSA 2022).

Conveyance pumping. MAGSA estimates conveyance energy demand at 44 GWh during years of maximum operations. These calculations are determined through estimating required lift and volumes by the five recharge zones. Calculations assume recharge and recovery from each recharge zone weighted to the total recharge basin area for each zone. Lift is calculated from the Mendota Pool to the average elevation within each recharge zone and considers if additional lift pumps are needed along the alignment to convey water to the recharge zone during recharge periods, and back to the Mendota Pool during recovery.

Total and annualized energy demands for recovery and recharge periods. These two demand types represent a maximum demand of 46 GWh during years in which maximum recharge has occurred and 160 GWh during years in which maximum recovery is occurring, assuming an additional energy demand of 15 percent from uncertainties. These demands have been normalized to an annual basis using data discussed in the groundwater hydrology report for this document (Appendix 2) using SWP operational data for the period from 1997 through 2021 and historical data in combination with DWR CalSIM predictions under climate change. The results of that analysis indicate that recharge opportunities will

occur 46 percent of the time and recovery opportunities 42 percent of the time. Those calculations lead to estimates for annualized energy demands for recharge activities at 21 GWh and for recovery activities of 66.5 GWh, totaling 87.7 GWh required annually.

Percent of regional and California water demand energy use. The calculated energy use by the Project is about 0.08 percent of the annual energy demand by California's water sector (175,950 GWh; PPIC 2018). Calculated current and predicted energy use related to water use in the Central Valley region (San Joaquin Valley, Sacramento River, and Tulare Lake basins) shows the current and future water demand require about 15,000 GWh (Next10 and Pacific Institute 2021). About 25 percent of the energy demand is from urban water users (e.g., residential, industrial, commercial, governmental) and about 75 percent from agricultural uses, similarly distributed across extraction and groundwater pumping, conveyance, distribution and end-use (Next 10 and Pacific Institute 2021). The annualized energy demand for this Project is calculated from these sources and analysis at about 0.6 percent of the energy demand related to water in the San Joaquin Valley and about 2.3 percent when limited to the San Joaquin River Basin.

The project will adhere to energy conservation requirements and greenhouse gas reduction requirements and would not result in wasteful and inefficient use of nonrenewable resources. Therefore, any impacts will be less than significant.

ENE b): Would the potential project conflict with or obstruct state or local plans for renewable energy or energy efficiency?

(Less Than Significant Impact) Both construction and operation of the proposed project will adhere to energy conservation requirements and greenhouse gas reduction requirements and would not result in wasteful and inefficient use of nonrenewable resources. The Greenhouse Gases and Climate Change Section (Section 4.8) of this study summarizes methods the project proponent will implement to meet clean energy goals and comply with energy efficiency plans. Impacts will be less than significant.

4.7 GEOLOGY AND SOILS (GEO)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Directly or indirectly cause 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 Uniform Building Code, creating substantial risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

4.7.1 Environmental Setting

Geology

The San Joaquin Valley geology is characterized by a deep reservoir of marine sediment deposits, overlain by over 1,000 feet of quaternary continental deposits. Sedimentation began during the Jurassic Period (208 to 144 million years ago) and much of the marine sediments were deposited during the Miocene Epoch (5 to 23 million years ago) when today's valley was an inland sea. When the sea receded, and uplift occurred, erosion of the surrounding topography resulted in the continental Quaternary deposits seen in the San Joaquin Basin today. On average, sediment is an estimated 2,400 feet thick and up to 9,000 feet thick in the Tulare Basin near Fresno (USGS 1999).

The project area is located on the Quaternary Geologic Unit (Q) which consists of Pleistocene-Holocene aged alluvium, lake, playa, and terrace deposits (Brown and Caldwell 2006) (Table 4-9). The project area is generally flat and located on alluvial deposits.

Table 4-9. Geologic Units in the Project Area (adapted from Brown and Caldwell 2006, Table 4-1)

Geologic Unit	Geologic Age	Lithology	Approximate Thickness	Paleontological Significance?
Post Modesto Alluvial Deposits	Holocene	Unconsolidated alluvium (gravel, sand, silt, clay)	< 30 feet	No
Modesto Formation	Late Pleistocene	Alluvium consisting of silt and clay sized material, as well as poorly sorted sand and gravel	10-30 feet	Yes, plants and vertebrates
<i>A-clay</i> ⁽¹⁾	<i>Pleistocene and Holocene</i>	<i>Clay, unconfined aquifer. Blue, olive brown, or dark greenish-gray</i>	<i>Up to 50 feet</i>	<i>No</i>
Riverbank Formation	Middle Pleistocene	Alluvial fan deposits. Higher fan deposits are coarse, lower are finer and poorly sorted	200-300 feet	Yes, plants
<i>C-clay</i> ⁽¹⁾	<i>Middle Pleistocene</i>	<i>Clay, yellowish-brown to grayish blue</i>	<i>10-40 feet</i>	<i>No</i>
Tulare Formation (west), Turlock Lake Formation (east)	Early to Mid-Pleistocene	Alluvial fan deposits consisting of boulder to sand size sediment. Silt and clay sediment interbedded in alluvium and terrace deposits	100-1000 feet	Yes, invertebrates, vertebrates, Turlock - plants
<i>E-clay (Corcoran Clay)</i> ⁽¹⁾	<i>Early to Mid-Pleistocene</i>	<i>Clay, acts as an aquitard</i>	<i>None given, generally thickest clay layer</i>	<i>No</i>
Laguna Formation	Middle to Late Pleistocene	Fine grained, arkosic sand. Some gravel and clay lenses	None given	No

¹The clay units listed are not continuous lithologic units. They are generally found between the geologic units listed or as a part of (interbedded with) the above or below listed geologic units.

Regional Faults and Seismic Hazards

The project area is located in a region of high seismic activity. However, the project area itself does not experience frequent or large earthquakes. Large earthquakes typically occur along the San Andreas Fault system. The nearest Alquist-Priolo Fault Zones to the project area are the San Andreas Fault (west of the project area) and Owens Valley Faults (east of the project area). Both are active, indicating displacement along the faults within the last 200 years. These faults have no record of having been displaced, but their activity is unknown (CDC 2017a). There are two approximately located faults that extend into the northern portion of the project area. These are not Alquist-Priolo faults or fault zones; they are part of the more general geologic mapping, and their activity is unknown (CDC 2020).

The project area is located over 50 miles from the San Andreas Fault system. While seismic shaking from a strong earthquake along the San Andreas fault may be felt in the project area, it would be at a substantially lower magnitude. The California State Geological Survey estimates shaking potential in regions throughout California. The earthquake shaking potential ranges from 0.35 to 0.65 in the project area (expressed as a percentage of standard gravity), which is in the mid to low range of shaking potential. The shaking potential map is updated following each update of the National Seismic Hazard Maps (CDC 2017b).

Liquefaction

Liquefaction can occur when saturated soils are subjected to dynamic forces such as strong shaking. Under these conditions, soils may lose their strength and cohesion. Liquefaction is a high risk in uniformly sandy soils where the water table is low (less than 30 feet below the ground surface) (Fresno 2000a, Fresno 2000b).

The water table (depth to groundwater) in the project area is approximately 155 feet below the surface (MAGSA 2020). Since it is greater than 30 feet, liquefaction is not expected to impact the area. Additionally, the soils in the project area are various sizes of sand and include fine sandy loam and sandy loam (Table 4-9) so liquefaction is not expected to be a high risk. Furthermore, water tables are not expected to rise to within 30 feet from the ground surface.

The California Department of Conservation publishes a map with liquefaction risk areas where liquefaction may occur during a strong earthquake. The map is intended for use by cities and counties to regulate development so buyers and sellers know where certain seismic hazards exist (CDC 2017c). Areas that are identified on the map are areas that are within a seismic hazard zone as defined by the Seismic Hazards Mapping Act of 1990. The project area does not have any liquefaction zones.

Landslides

A landslide is a type of mass wasting event that occurs when the cohesion of material on a slope is changed or exceeded. The cohesion can be changed by triggers such as an earthquake, saturation, or erosion. While shaking from an earthquake or saturation from rainfall could occur in the project area, it is also on and surrounded by flat land, so there is very little risk of landslides from sloped topography. The highest risk is slumping of creek or riverbanks.

The California Department of Conservation publishes a map with landslide risk areas, where a landslide may occur during a strong earthquake. The project area does not have any landslide risk zones and does not have a likelihood of deep landsliding based on regional estimates of rock strength and steepness of slopes (Wills et al. 2011).

Tsunamis and Seiche

The project area is inland and therefore not susceptible to seiches or tsunamis.

Subsidence

Subsidence is the settling or sinking of the Earth's surface. Many conditions can lead to subsidence and all of them have to do with a change in volume of subsurface material such as removal of groundwater, oil, gas, or another substance, or from reorganizing material from compaction or tectonic activity (MAGSA 2020). However, subsidence is also dependent on the soil type; not all volume alterations will result in the same level of subsidence for all soils. Soils with high silt or clay content where the groundwater table has also been drawn down are the most vulnerable to subsidence.

The project area has sandy soils and the groundwater table is approximately 155 feet below the surface (MAGSA 2020). The Groundwater Sustainability Plan (GSP) reports that from 1998 to 2016 the groundwater decline rate is 2 feet per year. Despite these numbers, subsidence in the project area is as little as 0.15-0.3 feet up to 3-7 feet (MAGSA 2020) and is the result of groundwater pumping.

Paleontological Resources

Paleontological resources include fossilized remains or impressions of plants and animals and can have both scientific and cultural importance. The scientific importance of fossils stems from their ability to help us understand historic prehuman environments. Paleontological resources aged mid-Holocene or older (> 5000 years old) are of most significance (SVP 2010).

The University of California Museum of Paleontology Database records search was used to search for paleontological records within Fresno County, California. Records were searched for Vertebrates, Invertebrates, Plants, and Microfossils in the Cenozoic Era. Numerous fossil records were returned. In addition to the important formations noted in the records (The Modesto Formation 10-30 feet, the Riverbank Formation 200-300 feet, and the Tulare Formation / Turlock Formation 100-1000 feet), most of the returned records were in geologic formations from the Miocene, Oligocene, and Eocene. Since all the formations are earlier than the Pliocene, it is unlikely that any of them will be encountered during construction or operations since they occur even deeper below the earth's surface.

Soils

The engineering and physical properties of soils contain important information for the feasibility of construction projects. Some of the more critical properties are listed in Table 410: Soil Data and Percent Area, from SSURGO Database and include texture, drainage class, and erodibility (NRCS 2014). Septic limitations and depth to water are also important, but neither are limitations for this project. In addition, the American Association of State Highway and Transportation Officials (AASHTO) and the Universal Soil Classification System (USCS) are both used to gain information about the engineering properties of project soils and the texture. The AASHTO Soil Classification System is an evaluation of subsurface engineering/geotechnical properties that can affect construction. The USCS is an additional indicator of soil texture and size.

Expansive Soils

Soil expansibility is a critical soil characteristic for construction projects. Expansive soils are those that have a particular type of clay which is capable of substantial increases in volume when it gets wet. This expansion can exert a tremendous force on structures, pipelines, and utilities. Additionally, expansive soils will also shrink upon drying which can further cause damage to foundations and structures. Where expansive soils are present, appropriate construction techniques are necessary to prevent damage.

According to the Expansion Index Tests (Uniform Building Code Standard 29-2), a soil expansion index greater than 20 (determined in accordance with ASTM D4829) indicates expansive soil. Expansive soils within Fresno County generally occur outside the project area (Fresno County 2000a).

Susceptibility to Wind and Water Erosion

The Wind Erodibility Index is ranked from least susceptible (Class 1) to wind and water erosion to most susceptible (Class 6). Each class is associated with a number that indicates the estimated erosion in tons/acre/year. Most soils (74 percent) are Class 3 which is predicted to erode 86 tons per acre annually.

Fourteen percent of soils are Class 4 which is predicted to erode 134 tons per acre annually. As such, soils in the project area are in the medium to high erosivity range.

Soil Texture and Drainage Class

Soil texture, as shown in Table 4-10, is primarily fine sandy loam (39 percent), sandy loam (32 percent), and loamy sand (12 percent).

Soil drainage is defined by Hydrologic Soils Group (HSG):

- Group A. Soils that have high infiltration rate (low runoff potential) when thoroughly wet. These consist of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rates of water transmission.
- Group B. Soils that have a moderate infiltration rate when thoroughly wet. These consist of deep to moderately deep soils that are moderately well drained or well drained. Soils tend to have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.
- Group C. Soils that have a slow infiltration rate when thoroughly wet. These soils typically have a layer that impedes the downward movement of water, or the soils are moderately fine to fine texture. These soils have a slow rate of water transmission.
- Group D. Soils that have a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist of clays that have a high shrink-swell potential, soils that have a high-water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Both the Drainage Class and the HSG show that there is a wide variety of drainage classes among soils in the project area. The Drainage Class indicates that 41 percent of soils are somewhat poorly drained while 39 percent are well drained, and 12 percent are somewhat excessively drained (Figure 1-10). The HSG indicates that within MAGSA, 16 percent of the soils are Group A, 24 percent are Group B, 30 percent are Group C, 27 percent are Group D, and the remainder are unclassified.

Table 4-10: Soil Data and Percent Area, from SSURGO Database

Soil Classification	Acres	% Area
Farmland		
Farmland of statewide importance	56,623	37
Not prime farmland	53,740	35
Prime farmland if irrigated	25,191	16
Prime farmland if irrigated and drained	6,501	4
Prime farmland if irrigated and reclaimed of excess salts and sodium	12,826	8
Texture		
Unclassified	2,544	2
Clay loam	1,204	1
Coarse sand	209	0
Coarse sandy loam	4,298	3
Fine sandy loam	61,071	39
Gravelly sand	16	0
Loam	13,520	9
Loamy coarse sand	3,680	2
Loamy sand	18,274	12
Sand	142	0
Sandy loam	48,797	32
Silt loam	1,121	1
Variable	5	0
Hydrologic Soil Group		
Unclassified	2,759	2
A	25,157	16
A/D	639	0
B	37,877	24
C	47,194	30
D	41,257	27
Drainage Class		
Unclassified	2,549	2
Excessively drained	209	0
Moderately well drained	1,607	1
Poorly drained	2,626	2
Somewhat excessively drained	23,431	15

Soil Classification	Acres	% Area
Somewhat poorly drained	63,358	41
Well drained	61,101	39
Erodibility Index		
48 (Class 1)	8,479	5
56 (Class 2)	7,367	5
86 (Class 3)	114,166	74
134 (Class 4)	21,954	14
160 (Class 5)	209	0
220 (Class 6)	158	0
Unclassified	2,549	2
Unified Soil Classification System		
Unclassified	2,816	2
CL (clays, low to medium plasticity)	1,204	1
ML (silt)	15,128	10
SC (clayey sand)	32,835	21
SM (silty sand)	102,542	66
SP-SM (poorly graded sand with silt and gravel)	356	0
AASHTO Soil Classification System		
Unclassified	2,549	2
A-1-b (subgrade excellent to good)	3,925	3
A-2-4 (subgrade excellent to good)	42,642	28
A-4 (subgrade fair to poor)	104,560	68
A-6 (subgrade poor)	1,204	1

4.7.2 Regulatory Setting

4.7.2.1 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, the Federal Emergency Management Agency (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.

4.7.2.2 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 (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.

4.7.2.3 County and Regional

Fresno County General Plan. The Fresno County General Plan includes policies pertaining to potential geologic hazards and unique geologic and palaeontologic resources (Fresno 2000c). The following local policies are relevant to the project:

Policy HS-D.3: The County shall require that a soils engineering and geologic-seismic analysis be prepared by a California-registered engineer or engineering geologist prior to permitting development, including public infrastructure projects, in areas prone to geologic or seismic hazards (i.e., fault rupture, ground shaking, lateral spreading, lurch cracking, fault creep, liquefaction, subsidence, settlement, landslides, mudslides, unstable slopes, or avalanche).

Policy HS-D.4: The County shall require all proposed structures, additions to structure, utilities, or public facilities within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed in accordance with applicable provisions of the Uniform Building Code (Title 24 of the California Code of Regulations) and other relevant professional standards to minimize or prevent damage or loss and to minimize the risk of public safety.

Policy HS-D.5: Pursuant to the Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code, Chapter 7.5), the County shall not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones unless the specific provisions of the Act and Title 14 of the California Code of Regulations have been satisfied.

Policy HS-D.7: The County shall ensure compliance with State seismic and building standards in the evaluation, design, and siting of critical facilities, including police and fire stations, school facilities, bridges, large public assembly halls, and other structures subject to special seismic safety design requirements.

Policy HS-D.8: The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development, including public infrastructure projects, that requires a County permit and is in an area containing soils with high “expansive” or “shrink-swell” properties. Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.

Policy HS-D.9: The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.

Policy OS-J.1: The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.

Policy OS-J.9: In approving new development, the County shall ensure, to the maximum extent practicable, that the location, siting, and design of any project be subordinate to significant geologic resources.

4.7.3 Potential Impacts

GEO a): Would the project directly or indirectly cause 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?

(Less than Significant Impact) Although the project area is in a region of high seismic activity, faults located nearest to the project area are Pre-Quaternary and have no record of displacement. The nearest Alquist-Priolo fault or fault zone, the San Andreas Fault system, is located more than 50 miles from the project area. While seismic shaking from a strong earthquake along the San Andreas fault may be felt in the project area, it would be at a substantially lower magnitude than areas closer to the fault. The earthquake shaking potential ranges from 0.35 to 0.65 in the project area which is in the mid to low range of expected relatively long-period (1.0 second) shaking potential. The proposed project is not located near a major urban center and would not result in construction of structures meant for human inhabitation or tall structures that could expose people to collapse risking loss, injury, or death. Canals and berms would be constructed with stable slopes unlikely to experience failure or collapse. Therefore, any impacts would be expected to be less than significant.

ii) Strong seismic ground shaking?

(Less than Significant Impact) The proposed project area is in a region that is at least 50 miles from a known, active fault and there are no known faults in the area. Based on the California Geological Survey earthquake shaking potential map, it is expected that the project area would experience low levels of shaking under most seismic conditions; however, very infrequent earthquakes could cause strong shaking in the project area. The proposed project would not substantially increase human or environmental exposure to risk of loss, injury, or death because of ground shaking, and any impacts would be expected to be less than significant.

iii) Seismic-related ground failure, including liquefaction?

(No Impact) Considering that the depth to groundwater within the MAGSA area averages 155 feet due to the region's reliance on pumped groundwater and that soils are primarily loam soils as opposed to uniformly sandy soils, liquefaction is not expected to be a high risk within the proposed project area. No liquefaction risk areas are depicted on the California Department of Conservation seismic hazard mapping. Therefore, the proposed project would be expected to have no impact related to potential substantial adverse effects resulting from seismic-related ground failure including liquification.

iv) Landslides?

(No Impact) Given the low risk associated with the relatively flat topography within the proposed project area and that no landslide risk areas are depicted on the California Department of Conservation seismic hazard mapping, the proposed project would have no impact related to potential substantial adverse effects resulting from landslides.

GEO b): Result in substantial soil erosion or the loss of topsoil?

(Less Than Significant Impact with Mitigation Incorporation) Undisturbed soils in the project area have a moderate to high potential for erosion caused by wind and water based on the climate, inherent properties of the soils, and vegetation. Agricultural land use also contributes to soil erosion and the loss of topsoil in the project area. Presence of heavy construction equipment during project construction would disturb vegetation and soils. An estimated 2,940 heavy equipment weeks would be required over the anticipated 3-year construction period with up to 19 pieces of heavy equipment operating at the same time throughout the project area. Approximately 2.48 million cubic yards (MCY) of soil would be excavated to construct the canals needed to convey water for the proposed project and up to an additional 1.0 MCY excavated during phased construction of the recharge basins. The project has been designed as a balanced cut/fill excavation project with excavated soils dispersed on farm fields adjacent to excavated canals or used as fill adjacent to recharge basins to construct containment berms. Some soil erosion due to soil disturbance and wind would be anticipated during construction. However, by incorporating temporary erosion and sediment control best management practices (BMPs) into project plans and mitigation measures including an approved fugitive dust control plan (AIR-1) and stormwater pollution prevention plan (WAT-7) and complying with terms and conditions established in the project CWA Section 401 water quality certification, impacts would be less than significant with mitigation incorporation.

GEO 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?

(Less Than Significant Impact) Based on land subsidence monitoring data from the past decade, minimal to moderate subsidence has occurred on the western edge of MAGSA. No known infrastructure (canals, wells, pipelines, roads, etc.) impacts have occurred as a result of subsidence (MAGSA 2020). By contributing to groundwater recharge and sustainability, the project may help to prevent or minimize further subsidence. Liquefaction or liquification induced lateral spreading or collapses are not a high risk

in the project area due to the soil properties and deep water table. Given these regional land characteristics, the proposed project would have a less than significant impact.

GEO d): Be located on expansive soil, as defined in Table 18-1-B of the most recently adopted Uniform Building Code (1994) creating substantial risks to life or property?

(Less Than Significant Impact) Soils mapped within the project area are primarily loam textured soils with significant sand fractions and are therefore less likely to contain expansive clays than other soil types found in the region. Soils exhibiting moderately high to high expansion potential within Fresno County generally occur outside the project area, with the closest expansive soils occurring along the Fresno Slough west of the project area (Fresno County, 2000a). Therefore, it is unlikely the project would be constructed in soils considered expansive in the most recently adopted uniform building code. Furthermore, substantial risks to life or property would be unlikely because the project would not construct habitable structures or structures which would create substantial risks to life or property should they fail. Thus, impacts would be less than significant.

GEO 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?

(No Impact) No septic tanks or alternative wastewater disposal systems will be constructed or needed during construction or operations of the proposed project. Proposed conveyances and project infrastructure would be constructed at distances greater than 100 feet from dwellings in the project area utilizing septic systems and would not impact the soil properties affecting septic use. Therefore, the project would have no impact.

GEO f): Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

(Less Than Significant with Mitigation Incorporation) Although numerous fossil records were returned in the search of paleontological records within Fresno County, inclusive of the project area, they are in geologic formations which are deeper than those that would likely be encountered during excavations for the proposed project. Additionally, MAGSA would implement mitigation measure GEO-1, having an on-call, certified paleontologist, to evaluate excavated material should an excavation encounter paleontologically significant resources from the Modesto formation. Thus, impacts would be less than significant with mitigation incorporation.

4.8 GREENHOUSE GAS EMISSIONS (GHG)

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

4.8.1 Environmental Setting

Climate changes resulting from GHG emissions could produce an array of adverse environmental impacts including water supply shortages, severe drought, increased flooding, sea level rise, air pollution from increased formation of ground level ozone and particulate matter, ecosystem changes, increased wildfire risk, agricultural impacts, and ocean and terrestrial species impacts, among other adverse effects. While the emissions of a single project do not cause global climate change, GHG emissions from multiple projects throughout the region, state, and world contribute on a cumulative basis to an adverse impact to the global climate. Although an individual project's GHG emissions would generally not result in direct impacts under CEQA, as the climate change issue is global in nature, an individual project could be found to contribute to a potentially significant cumulative impact.

4.8.2 Regulatory Setting

Federal

U.S. Environmental Protection Agency (EPA)

Currently there are no federal regulations or legislation that specifically address 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 be 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.

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.

State

Assembly Bill 1493

California Assembly Bill (AB)1493 requires CARB to develop and implement regulations to reduce automobile and light truck GHG emissions.

The State also adopted AB 32, which identified GHG reduction goals and noted the effects of increased GHG emissions as they relate to global climate change. 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, and CO₂, operators of petroleum and natural gas systems, and electricity retail providers and marketers.

Climate Change Scoping Plan

CARB's 2008 Climate Change Proposed Scoping Plan is the State's plan to achieve GHG reductions in California required by AB 32. The Plan contains the main strategies California will implement to achieve reduction of 169 million metric tons (MMT) of CO₂e, or approximately 30 percent from the state's projected 2020 emissions level of 596 MMTCO₂e under a business-as-usual scenario. The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the state's GHG inventory. 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 MMTCO₂e. 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.

4.8.3 Regional and County

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:

- 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.

The SJVAPCD does not recommend quantitative significance thresholds for the analysis of the impact of a project's GHG emissions on the environment. Instead, the SJVAPCD's approach relies on the application of performance-based standards to assess project-specific GHG emission impacts on global climate change. This is based on the principle that projects whose emissions have been reduced or mitigated consistent with AB 32, the California Global Warming Solutions Act of 2006,

should be considered to have a less-than-significant impact on global climate change (SJVAPCD 2015).

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.

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.

Fresno Council of Governments Priority Climate Action Plan The Fresno Council of Governments (COG) received a grant from the U.S. EPA. The grant received from EPA to help the COG conduct a comprehensive climate action planning process and prepare a Regional Climate Action

Plan for the Fresno region. The Regional Climate Action Plan will cover the 15 incorporated cities in Fresno County and the unincorporated Fresno County areas. The first component of the Regional Climate Action Plan is the Priority Climate Action Plan (PCAP), which includes a GHG inventory, a public outreach process, identification and quantification of priority GHG emissions reduction measures, a benefit analysis for low-income and disadvantaged communities, and identification of implementation authorities. Outreach to stakeholders and the general public, especially the low-income and disadvantaged communities, is a key component of the PCAP and a priority for the Fresno COG. A Comprehensive Climate Action Plan and Status Report will be developed after the PCAP.

4.8.4 Potential Impacts

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

Short-term Construction

Construction of the proposed project would result in temporary generation of emissions associated with site preparation, grading, and the construction of project infrastructure. GHG emissions would result from off-road equipment use and 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 proposed project are summarized in Table 4-2. As shown in Table 4-2, annual emissions of GHGs associated with construction of the proposed project would total approximately 1,266 MTCO₂e. Amortized construction-generated GHG emissions, when averaged over the assumed minimum 50-year life of the project, would total approximately 86 MTCO₂e per year.

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 50-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.

Long-term Operations

Estimated operational GHG emissions are summarized in Table 4-3. With the inclusion of amortized construction emissions, the proposed project would generate approximately 9,397 MTCO₂e/year including emissions from stationary sources and worker trips for operation and maintenance. GHG emissions would be primarily associated with the operation of off-road equipment and on-road worker commute vehicles. Operational emissions from mobile sources would not exceed the threshold of 1,100 MTCO₂e/year. Stationary source GHG emissions would total approximately 9,311 MTCO₂e/year and would not exceed the threshold of 10,000 MTCO₂e/year.

The booster and recovery well pumps would be electrically powered, consistent with SJVAPCD'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. 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. For these reasons, GHG emissions would be considered to have a less than significant impact.

GHG (b.) Would the project conflict with any 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 Fresno County Council of Government's Priority Climate Action Plan and CARB's Climate Change Scoping Plan.

The Project is consistent with the projected land use development patterns identified in the Priority Climate Action Plan, 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 Priority Climate Action Plan. The proposed project would be consistent with the action items contained in the Climate Change Scoping Plan and would not conflict with its provisions. Therefore, the impact would be less than significant.

4.9 HAZARDOUS MATERIALS (HAZ)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
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 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) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

4.9.1 Environmental Setting

The proposed project is in a primarily agricultural area, and the nearest airport is San Joaquin Airport, found approximately six miles west of the project area.

Raisin City Elementary School, near the southeast project boundary, is the only public school within the project limits (Figure 4-4). All other schools near the project boundary are two or more miles from the project limits (NCES 2023) and are not considered within the sphere of influence for potentially harmful impacts from hazardous materials created, released, or transported from this project.

The American Avenue Solid Waste Landfill, near the center of MAGSA and just north of the planned American Canal, is the only official landfill within the project limits (Figure 4-4). The Midvalley Disposal Transfer Recycling Station and Road Maintenance Area 5 Transfer Station are approximately 1 mile and 2 miles east of the project limits, respectively. These facilities were given special consideration in the planning and design phase as landfills are a widespread, common cause of groundwater contamination.

The Raisin City Oil Field, located in the central part of MAGSA (Figure 1-11), is a monitored source of chloride, boron, and total dissolved solids (TDS). It is likely that pesticides, herbicides, and other agricultural chemicals have been applied throughout the project area due to past and ongoing agricultural practices and may remain in the soil and water. It is also likely that one or more clandestine drug labs (CDLs) are present throughout this mostly rural project area, but this project would not increase the likelihood of hazardous release from such sites.

Within the larger project area, there are eight inactive (cleanup completed) Leaking Underground Storage Tank (LUST) sites, and within 0.25 miles of the conveyance system, there is a single LUST with cleanup completed in 1990. Two active USTs are within the project vicinity, but neither fall within 0.25 miles of the conveyance system or the construction footprint (EDR 2023, Figure 4-4).

4.9.2 Regulatory Setting

4.9.2.1 Federal

Federal regulations on hazardous materials are contained in the CFR primarily Titles 29 Labor, 40 Protection of the Environment, 42 Public Health, and 49 Transportation. The EPA is the principal federal regulatory agency responsible for the safe use and handling of hazardous materials.

Resource Conservation and Recovery Act. The Resource Conservation and Recovery Act (RCRA) enables the EPA to administer a regulatory program that extends from the manufacturing of hazardous materials to their disposal, thus regulating the generation, transportation, treatment, storage, and disposal of hazardous waste at all facilities and sites in the nation.

Comprehensive Environmental Response, Compensation, and Liability Act. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) allows the federal government authority to respond directly to releases of hazardous substances that may cause harm to public health or the environment, provides mechanisms to remediate uncontrolled or abandoned contaminated sites, defines liability and establishes funding sources for the cleanup of contamination. The development of CERCLA enabled revisions to the National Contingency plan, which led to the development of the National Priorities List.

Hazardous Materials Transportation Act. U.S. Department of Transportation (USDOT) regulates hazardous materials transport throughout the United States through the Hazardous Materials Transportation Act (HMTA) 49 USC Section 5101 et seq. This law protects against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate,

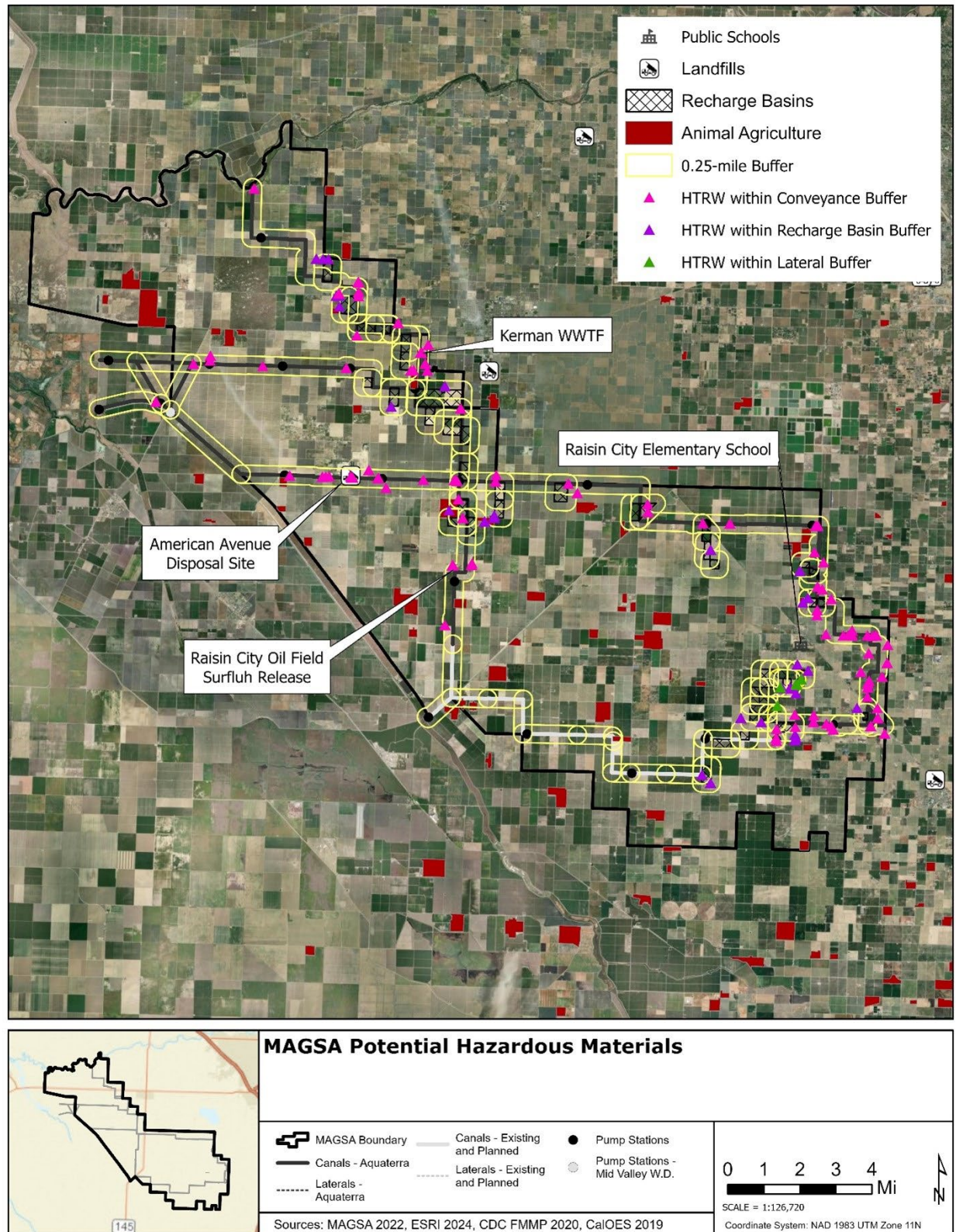


Figure 4-4: Potential Hazardous Materials

interstate, and foreign commerce. The HMTA was amended in 1990 by the Hazardous Materials Transportation Uniform Safety Act and the Hazardous Materials Transportation Authorization Act in 1994. These regulations require employees to be properly trained in safe handling procedures, have complete background checks, and use uniform hazardous materials and hazardous waste packaging and labeling for transport.

4.9.2.2 State

Department of Toxic Substances. The EPA has granted the State of California primary oversight responsibility to administer and enforce hazardous waste management programs. California regulations are equal to or more stringent than federal regulations. The Department of Toxic Substances Control (DTSC) is a sub agency of the California State Environmental Protection Agency (CalEPA) and is authorized to enforce the provisions of RCRA. The DTSC has enforcement authority and tracks hazardous materials management and hazardous waste throughout the state.

Hazardous waste regulations applied by DTSC are contained within Title 22, Division 4.5, Chapter 11 of the California Code of Regulations (CCR). Chapter 11 Article 3 defines hazardous materials as substances that are toxic, ignitable, reactive, or corrosive. California also defines an extremely hazardous material as a substance that shows high acute or chronic toxicity, is carcinogenic, has bioaccumulative properties, is persistent in the environment, or is water reactive. Additional health and safety requirements, management release response plans and liability determinations are outlined California Health & Safety Code (HSC) Division 20, Miscellaneous Health and Safety Provisions. A release of hazardous materials is any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing of into the environment, unless permitted or authorized by a regulatory agency (HSC Section 25501).

State Water Resources Control Board (SWRCB). The SWRCB has the authority to preserve and enhance water resources in the state. The SWRCB regulates and maintains records of releases of hazardous substances and petroleum-based materials and releases that could affect groundwater or surface water. It also regulates point and non-point pollution generators and discharge permits from irrigated agricultural lands.

4.9.2.3 County and Regional

Fresno County regulates the use, storage, transport and disposal of hazardous substances, cleanup and underground storage tanks by issuing permits, monitoring regulatory compliance, and other enforcement activities. The county developed a Hazardous Waste Management Plan (HWMP) in accordance with California Health and Safety Code Section 24135 et seq. It identifies the amount of waste produced, the locations of hazardous waste generators and guidance on reducing the need for future hazardous waste facilities by focusing on hazardous waste reduction techniques. The HWMP has not been approved by the State. Fresno County and the Department of Community Health, Environmental Health System coordinate responses to hazardous waste emergencies.

Fresno County is responsible for enforcing the state regulations governing hazardous substance generation and storage. The Fresno County Department of Public Health regulates the use, storage, and disposal of hazardous substances in the county by issuing permits, monitoring regulatory compliance, and other enforcement activities. The application of agricultural products including pesticides and herbicides is regulated, monitored, and enforced by the Fresno County Department of Agriculture, Weights, and Measures in accordance with the provisions of the California Department of Food and Agriculture Pesticide Regulation Program (PRP) and California Department of Pesticide Regulation (DPR).

Fresno County General Plan. The following policies from the Fresno County General plan may be relevant to the Project:

Policy HS-A.1. The County shall, through the Fresno County Operational Area Master Emergency Services Plan, maintain the capability to effectively respond to emergency incidents, including maintenance of an emergency operations center.

Policy HS-B.1. The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.

Policy HS-B.2. The County shall ensure that development in high fire hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards and meets all applicable State and County fire standards. Special consideration shall be given to the use of fire-resistant construction in the underside of eaves, balconies, unenclosed roofs and floors, and other similar horizontal surfaces in areas of steep slopes.

Policy HS-C.2. The County shall require that the design and location of dams and levees be in accordance with applicable design standards and specifications and accepted design and construction practices.

Policy HS-C.3. The County shall promote a floodplain management approach in flood hazard areas that are presently undeveloped by giving priority to regulation of land uses over development of structural controls as a method of reducing flood damage.

Policy HS-C.6. The County shall promote flood control measures that maintain natural conditions within the 100-year floodplain of rivers and streams and, to the extent possible, combine flood control, recreation, water quality, and open space functions. Existing irrigation canals shall be used to the extent possible to remove excess stormwater. Retention-recharge basins should be located to best utilize natural drainage patterns.

4.9.3 Potential Impacts

HAZ a and b): Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? Would 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 with Mitigation Incorporated). The construction contractor will transport, store, and use hazardous materials such as fuels and lubricants to operate construction equipment. Operating and maintaining the canals and pumps may include the use of fuels, lubricants, and other hazardous materials, some of which may leak or spill during refueling or transport and be released into the environment. As part of Mitigation Measure HAZ-1, the construction contractor is required to develop a project-specific Spill Prevention and Response Plan (SPRP) that conforms to applicable local, state, and federal requirements. The SPRP will be on site during construction. Employees are to be trained on the processes included in the SPRP, which will include measures that ensure the safe transport, storage, use, and disposal of hazardous materials used or encountered during construction. The plan will outline specific handling and reporting procedures for hazardous materials and disposal of hazardous materials removed from the site at an appropriate offsite disposal facility. The SPRP will outline the volume of materials on site, refueling procedures, location of spill kits, sensitive areas and spill response procedures to be followed by the construction contractor. A stormwater pollution prevention plan (SWPPP) with site-specific Best Management Practices (BMPs) will be developed by the contractor to ensure water quality standards are met during construction. Spill response measures related to stormwater runoff will also be outlined in the SWPPP.

Though USTs are a potential source of accidental hazardous materials release in any project involving excavation, their lack of proximity to the construction area makes it unlikely that construction of this project would cause unexpected releases. The SPRP will address accidental discovery of undocumented hazardous material sites, such as unreported underground storage tanks (USTs) or buried drums.

HAZ c): Would the project 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) Raisin City Elementary is within the larger project area but is not within 0.25 miles of any portion of the conveyance system or construction footprint, so there will be no impacts to this school. All other nearby schools are outside of the project limits.

HAZ d): Would the project be located on a site 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?

(Less Than Significant Impact with Mitigation Incorporated) There is one archived CERCLA (or Superfund) site within the MAGSA area, within the Texaco Inc. Raisin City Oil Field, located approximately 1 mile west of the limits of disturbance at the nearest conveyance channel (Siskiyou Canal). Another portion of the Raisin City Oil Field, the Surfluh Lease, is found within a half mile, but downgradient of, the Siskiyou Canal. The Surfluh Lease is a petroleum production and petroleum wastewater discharge facility operated by the Longview Production Company, which is the discharger responsible for operating and maintaining a groundwater monitoring system in place since 2015 (EDR, 2023). Potential releases from this facility into groundwater would be identified via the monitoring wells and remediated per the Monitoring and Reporting Program R5-2015-0067 (California Regional Water Quality Control Board, Central Valley Region 2015). The components of the proposed conveyance system passing through the vicinity of the Raisin City Oil Field area will be lined with concrete to prevent seepage of bank water into the ground in this area.

The Kerman Wastewater Treatment Facility (WWTF), located near the northeast project limits, within the quarter-mile buffer of both the Eastside Canal and a proposed recharge basin, is currently on the Cortese List for several 2022 violations for exceeding Biochemical Oxygen Demand (BOD) limits in discharged effluent (EDR, 2023). Excessive BOD loading does not meet hazardous material criteria.

There are three RCRA Large Quantity Generator (RCRA-LQG) sites within the MAGSA area, two of which fall within 0.25 miles of planned conveyance alignments: American Avenue Solid Waste and Wiggins/Walrond. There is one RCRA Small Quantity Generator (RCRA SQG), Pacific Bell, located within a quarter mile of the conveyance system (EDR 2023). Construction of the project would be unlikely to create unexpected releases of hazardous materials from the Wiggins/Walrond (crude petroleum extractor) or Pacific Bell generators as hazardous materials are removed from their sites for disposal elsewhere in an established and systematic way, and project construction would not interfere with this. Neither Pacific Bell nor Wiggins/Walrond have active violations on the Cortese list.

The American Canal will flow along the southern boundary of the American Avenue Solid Waste Landfill and will be lined with concrete in this area to prevent leachate from entering the waters and to prevent seepage of conveyance flow into this area. Despite the channel alignment on the opposing side of the road-fill prism from the landfill, both proximity and duration of potential exposure increase the risk of hazardous material migration into the channel from this landfill. No hazardous spills or releases have been documented from this landfill since 2005 (EDR 2023), and a groundwater monitoring network that surrounds the landfill provides alerts to landfill operators in case monitoring detects heightened concentrations of CoCs. Extraction wells will avoid this area by at least 0.5 miles, and all extracted waters will be sampled in real time prior to discharge to the Mendota Pool.

While Confined Animal Feeding Operations (CAFOs) are common in this agricultural area and pose some risk of hazardous material release (i.e., toxic levels of nitrogen, phosphorous, etc.), the alignment is designed to avoid such areas. No CAFOs within the project area have open violations on the Cortese List.

In addition to targeted, specialized, and/or required monitoring systems at several of the hazardous materials sites within the project area, MAGSA and other regulatory bodies maintain and operate a significant water quality monitoring system within the project limits. Since the site is located on several sites included on a list of hazardous materials sites compiled pursuant to government code Section 65962.5, and due to the size and nature of these facilities, there is potential for significant impacts. Monitoring systems in place around areas with known contamination will allow for early detection of any possible contamination from any sites or facilities with hazardous materials so Mitigation Measure HAZ-1 can be implemented quickly. This impact will be less than significant with mitigation incorporation.

HAZ 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) There are no airstrips within the project limits. The project area is included in the Airport Influence Area or Land Use Compatibility Zone as identified in the Fresno County Airport Land Use Compatibility Plan (ALUCP) (Coffman 2018). The proposed project will pose no aircraft safety hazards nor create hazards for airstrips, and there will be no impacts.

HAZ f): Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

(Less Than Significant Impact) There may be minor, temporary increases in traffic during the mobilization of construction equipment and materials. The contractor's traffic control plan will ensure unhindered emergency vehicle access. Construction activities impacting traffic flow would cease during an evacuation.

The design of levees will be consistent with Fresno County policies for minimizing health and safety risks resulting from flooding (Goal HS-C, Policy HS-C.2) and seismic and geologic hazards (Goal HS-D, Policy HS-D.3). This project will not impair or impact an emergency response plan or emergency evacuation plan, resulting in a less than significant impact.

HAZ g): Would the project 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) The proposed project area is mostly rural agricultural land and small communities. The risk of wildland fire is low due to lack of unmanaged grasses or underbrush in most of the project area. There is a slightly increased risk of fire during construction due to the potential for sparks from construction machinery. The California Office of the State Fire Marshal mapped the project area as Local Responsibility Area (LRA) Unzoned and determined that this area has no Very High Fire Hazard Severity Zones (Coffman 2018). Impacts associated with wildland fire will be less than significant.

4.10 HYDROLOGY AND WATER QUALITY (WAT)

	Potential Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
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:	☐	☒	☐	☐
i) result in substantial erosion or siltation on- or off-site;	☐	☒	☐	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☒	☐	☐
iii) create or contribute runoff water which would exceed the capacity of existing planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☒	☐	☐
iv) impede or redirect flows?	☐	☒	☐	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☒	☐	☐

4.10.1 Environmental Setting

The Project area has a Mediterranean climate, with most precipitation falling from October to April. Over the last 20 years, precipitation has averaged about 10 inches per year, ranging from 3 inches in 2013 to 15.5 inches in 2019 (AgACIS 2024). Direct precipitation occurs primarily in the form of rain or fog. Topography in the San Joaquin Valley decreases slightly to the north along the San Joaquin River. Within MAGSA, topography dips to the southwest toward the Fresno Slough.

Surface Water Hydrology

Surface water features in MAGSA are mostly limited to irrigation water delivery and runoff ditches and canals, stock ponds, and effluent capture ponds. Lassen Canal and McMullin Canal are located in the central portion of MAGSA and are operated by the James Irrigation District (JID) for transport of groundwater pumped from the JID well field within MAGSA to JID. Fresno Irrigation District (FID) operates a surface water basin found within the mid-southern end of MAGSA. This basin is fed by Dry Creek Canal when surface water is available. When available, flood waters from the James Bypass are diverted to recharge basins in the southwest corner of MAGSA through a turnout on the James Bypass.

The Kings River and San Joaquin River, which are found outside of the MAGSA boundary, are over-appropriated under normal flows (MAGSA 2020). However, flood risks present a significant issue in the Kings Basin from January to July. Releases from Pine Flat Reservoir, found upstream of the project area, can be high when the reservoir, which accommodates snowmelt from the Sierra Nevada Range, is anticipated to meet capacity. Flood risk mitigation typically incurs costs up to \$20 million per year (Bachand et al. 2014). Large floods in 1983, 1995, and 1997 incurred a total of \$1.55 billion (2020 dollars) in damages (Bachand et al. 2014, USBR 2005). The Fresno Sough and James Bypass deliver water to the San Joaquin River from the Kings River when the Kings River is at flood stage (MAGSA 2020).

Surface Water Quality

The Water Quality Control Plan (WQCP) for the Tulare Lake Basin addresses surface water contamination, most of which is from agricultural drainage (KBWA 2018). The WQCP recommends BMPs, many for on-farm practices, to address potential contamination from agricultural runoff. Another BMP is a surface water monitoring network where samples can be collected, and contaminant levels can be monitored monthly for salinity, pH, and temperature. The WQCP recommends less frequent monitoring for nutrient levels and toxic substances.

Groundwater Hydrology

Groundwater is the primary source of irrigation water in MAGSA. Wells in the Kings Basin are unmetered private wells, except for those within the James Groundwater Sustainability Agency (GSA) (KSGSA 2021). In the James GSA, all irrigation groundwater wells are owned and operated by the James Irrigation District (JID) (KSGSA 2021).

GSAs in the Kings Basin estimate groundwater use based on the water demands of land use, as described in the Kings Basin SGMA Annual Report (KSGSA 2021). In the 2019/2020 Water Year, total groundwater use in the Kings Basin was estimated to be 1.3 million AF, with 1.2 million AF used for agriculture (KSGSA 2021). Of the groundwater pumped, MAGSA used the second most (0.37 million AF) of all the GSAs in the 2019/2020 WY, second to North Fork Kings GSA (0.38 million AF).

The Kings Basin is over-drafted by more than 120,000 AF annually (MAGSA 2020). Generally, groundwater use outpaces recharge, as groundwater levels have trended downward since the 1980s (KSGSA 2021). After wetter years, such as 2016 and 2017, upward fluctuations have occurred; however, the general trend is down.

In Fall 2021, depth to groundwater measured at wells in the northern Project area varied from 132 to 183 feet below ground surface, and in the southern Project area from 137 to 244 feet below ground surface

(Provost & Pritchard 2022). Groundwater elevations decrease toward a cone of depression in the southwest portion of MAGSA. Groundwater elevation contour maps prepared for years 2015 to 2020 show that the general pattern and direction of groundwater flow has remained consistent over this period (KSGSA 2021).

Infiltration rates are an important factor in identifying the most suitable locations for water recharge. NRCS information on Drainage Class and Hydrologic Soils Group provides an overall expectation for drainage and infiltration. Soils with higher infiltration rates can transmit water to the aquifer faster than an area with a low infiltration rate. Infiltration rates vary horizontally and vertically in the soil column and within a single soil unit. It can also vary because of land use, including type of crop grown. In the Project area, 51 percent of the soils are categorized in Drainage Classes of "somewhat excessively drained" and "well-drained" (Figure 1-10, Table 4-10).

The actual infiltration rates are more difficult to estimate. Studies performed for the McMullin On-Farm Capture Expansion Project estimated actual infiltration rates based on saturated hydraulic conductivity values equivalent to the point at which the infiltration rate becomes steady during infiltration rate tests (Bachand et al. 2016, Bachand and Cameron 2022a). These studies estimate infiltration rates at approximately 2.5 to 4.8 inches/day within the Expansion Project area, part of which overlaps the southern portion of the current Project area.

Provost & Pritchard conducted a feasibility study of the MAGSA area to examine geologic properties and identify regions within MAGSA best suited for recharge of surface water supplies to groundwater (MAGSA 2022). Geologic properties reviewed in this evaluation include soil texture and saturated hydraulic conductivity, the Soil Agricultural Groundwater Banking Index (SAGBI) rating, geologic facies, geologic deposits, groundwater contours (Figure 4-5), and presence/absence of regional aquitards. Recharge site areas have a higher saturated hydraulic conductivity relative to other areas of MAGSA, based on the percentage of coarse and moderately coarse sands (Figure 1-10, Table 4-10).

Groundwater pumping has mined resident groundwater within the Kings Basin, resulting in abandoned agricultural and drinking water wells (Figure 4-6). Between 2014 and 2022, eleven wells within the MAGSA boundary were reported dry to the DWR. All wells were reported during dry periods in the state, with 3 reported between 2014-2016, and the rest reported between 2021-2022 (Figure 4-6). The primary use of these wells was to supply household water, with only one used for agriculture/irrigation.

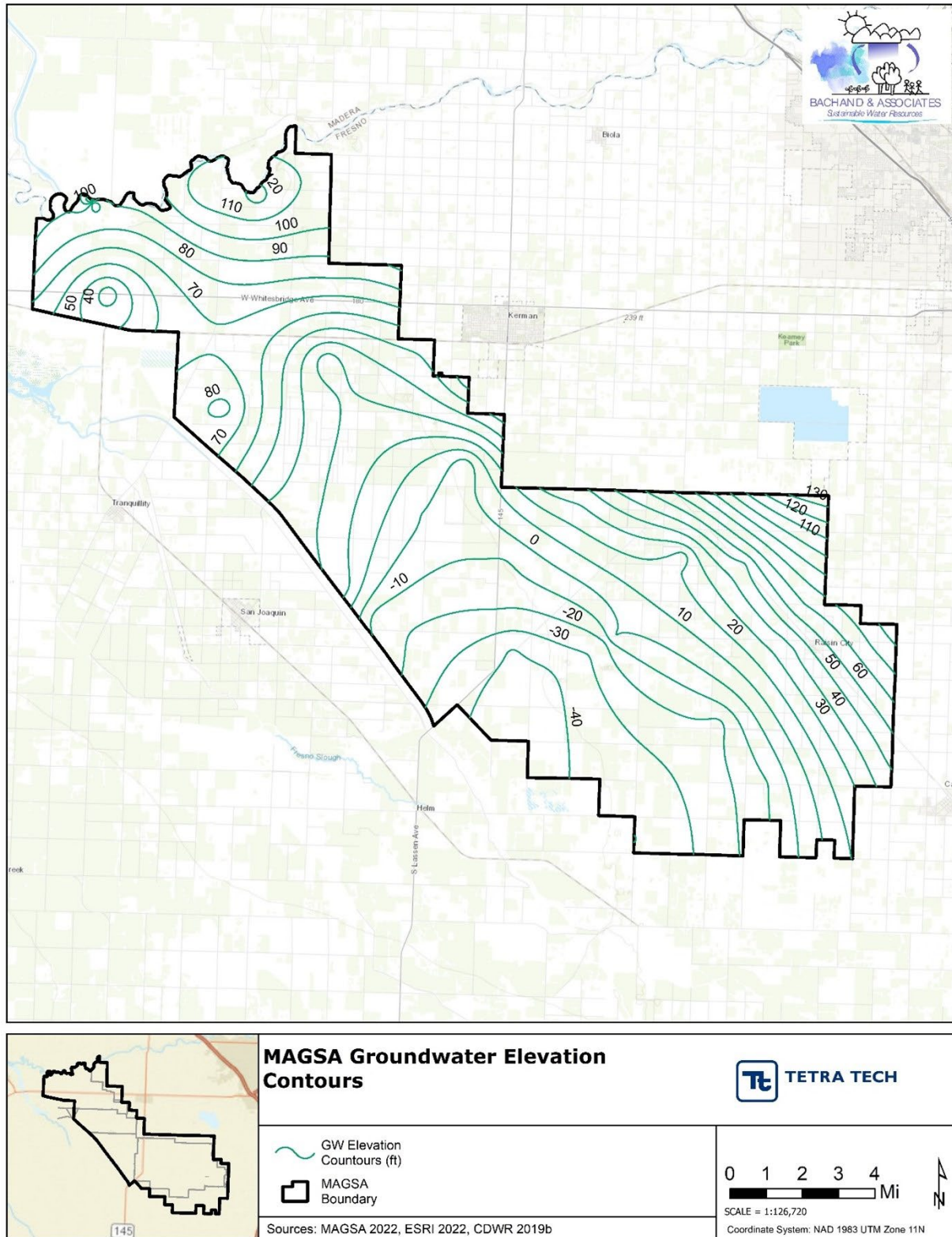


Figure 4-5: Groundwater Elevation Contours

Groundwater Quality

The California SWRCB has enacted a Groundwater Quality Protection Strategy (GWQPS) for the Central Valley region. The SWRCB seeks to maintain high-quality drinking groundwater resources wherever it is present by limiting bacteria, organic and inorganic chemical constituents, and maintaining acceptable taste and odor, so potential beneficial uses are not adversely affected. The GWQPS lists several existing groups and their actions to protect groundwater quality. Because the region is heavily reliant on groundwater for most of its water use, groundwater is used for drinking water, and municipal wells are monitored to comply with safe drinking water standards. Domestic wells, however, are not always monitored.

Groundwater quality within the MAGSA area is generally excellent for agriculture and good for municipal uses (MAGSA 2020). Eight possible constituents of concern (CoCs) have been identified at inconsistent levels over several decades in the MAGSA area. These include arsenic, chloride, 1,2-Dibromo-3-chloropropane (DBCP), manganese, nitrates, sodium, total dissolved solids (TDS), 1,2,3-Trichloropropane (1,2,3-TCP), and uranium. Possible sources of these constituents include agricultural inputs and the Raisin City Oil Field, located in the northeast corner of the study area. Although there have been brief historical exceedances of Maximum Contaminant Levels (MCLs) of some of these constituents, there is no indication of trends that would cause significant concern to MAGSA water quality (MAGSA 2020). Few exceedances of pesticides have been identified (MAGSA 2020).

MAGSA tracks plume expansion or movement through the groundwater monitoring network it maintains around the Raisin City Oil Field and tracks identified constituents using data from public water supply wells and the NRCS's Groundwater Ambient Monitoring and Assessment Program (GAMA). MAGSA will continue to comply with California Code of Regulations (CCR) Title 22, which requires groundwater monitoring and reporting by community water systems and non-community public supply wells. MAGSA will utilize this data to identify future groundwater quality concerns and implement mitigation measures if needed.

As one of the mandatory requirements of the Irrigated Lands Regulatory Program (ILRP), the Kings Coalition prepared a Groundwater Assessment Report (GAR), which analyzed risks to groundwater from salts and nitrates as the primary CoCs that may originate from irrigated agriculture within the coalition area. The MAGSA area is in the northern portion of the GAR study area. The GAR found very few nitrate detections, but many of those exceedances were above the MCL of 10 mg/L. The GAR found relatively few TDS detections in MAGSA, but many of those detections were above the primary drinking water standard of 1,000 mg/L. The MAGSA area tends to have naturally occurring saline soils with elevated TDS levels due to saline and connate water found within the fresh water-bearing continental deposits. The GAR also found very few pesticide exceedances in the study area.

The findings regarding each of the MAGSA CoCs are summarized below.

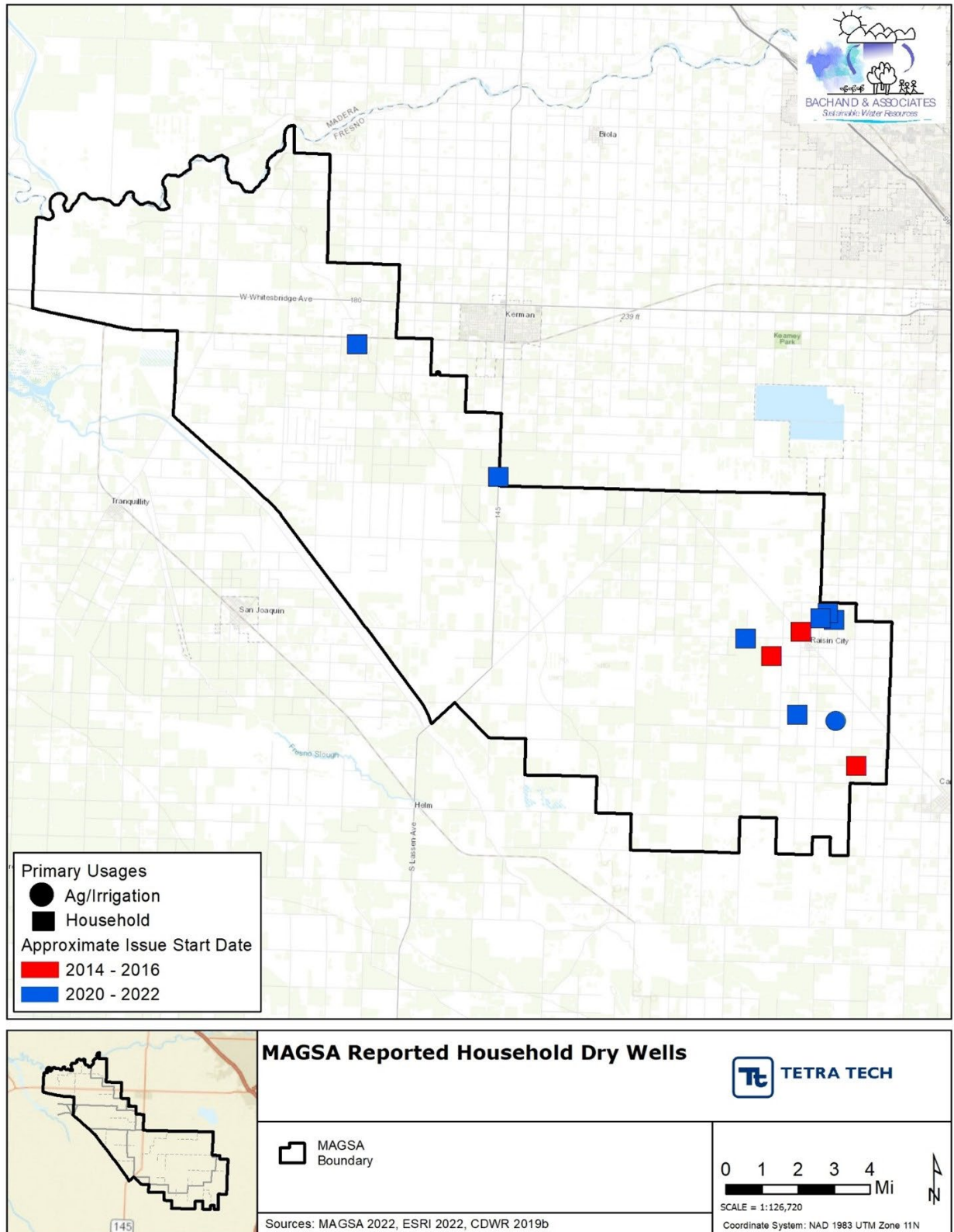


Figure 4-6: Reported Household Dry Wells

Arsenic

Arsenic occurs in natural deposits and has an MCL of 10 ug/L. In 2018, a municipal well southeast of Raisin City had a reported value of 38 ug/L. Arsenic is not of considerable concern for MAGSA, and while historic, sporadic heightened MCL exceedances have been found, there is little indication of a consequential or continuous increase (MAGSA 2020). MAGSA will continue to monitor arsenic through its monitoring network.

Chloride

Chloride is a common constituent in groundwater in the Central Valley of California. It has a secondary Drinking Water Standard (SMCL) of 500 mg/L and is present in monitoring wells and municipal wells of various depths throughout the MAGSA area. Chloride is not of considerable concern for MAGSA, and while historic, sporadic heightened MCL exceedances have been found, there is little indication of a consequential or continuous increase (MAGSA 2020). MAGSA will continue to monitor chloride through its monitoring network.

DBCP

DBCP was used as a fumigant to kill nematodes in soil before planting and was widely used in California until 1977. Its MCL is 0.2 ug/L. In 1993, a DBCP concentration of 2.5 ug/L was sampled at an unspecified well with a total depth of 233 ft. DBCP is not of considerable concern for MAGSA, and while historic, sporadic heightened MCL exceedances have been found, there is little indication of a consequential or continuous increase (MAGSA 2020). MAGSA recognizes the possible presence of this constituent southeast of Raisin City and will continue to monitor DBCP through its monitoring network and from the public water supply system.

Manganese

Elevated levels of manganese have been detected in the MAGSA area (MAGSA 2020). The elevated levels were found in the northern part of the GSA which do not include the Project area. Manganese is not of considerable concern for this project, but MAGSA will continue to monitor it through its monitoring network.

Nitrate-Nitrogen

Nitrate is commonly found in groundwater due to nitrogen fertilizers in irrigated agricultural and landscaped areas, seepage from feedlots and dairies, wastewater and food processing waste ponds, sewage effluent, and leachate from septic system drain fields. The MCL for nitrate as NO₃ is 45 mg/L and the MCL for nitrate as nitrogen is 10 mg/L. Using data from NRCS's GAMA Program from 2015 through 2018, MAGSA found no significant exceedances of nitrate and found no indication of consequential or continuous increase (MAGSA 2020). MAGSA will continue to monitor for nitrate and nitrogen through its monitoring network.

Sodium

Sodium is the predominant CoC in MAGSA. Elevated sodium levels are found primarily in areas near the American Avenue Landfill (MAGSA 2020). There is little GAMA data to suggest a consequential or continuous increase. MAGSA will continue to monitor for sodium through its monitoring network.

Total Dissolved Solids (TDS)

TDS has a recommended SMCL of 1,000 mg/L. Throughout the MAGSA area, TDS concentrations at or above the SMCL has been found, but with little regularity or pattern. The presence of TDS is expected as it is mainly representative of the existence of salts. While historical values of TDS have occurred at levels greater than the SMCL, in recent years the monitoring well located near the American Avenue Landfill within MAGSA has shown a decline in TDS concentrations from 2,400 mg/L in 2017 to 1,600 mg/L in 2018 (MAGSA 2020). MAGSA will continue to monitor for TDS through its network of monitoring wells.

1,2,3-TCP

TCP is used industrially as a paint and varnish remover and chemically as a solvent for pesticides. Although there is no federal MCL, California has adopted its own drinking water standard of 5 parts per trillion as of 2018. Although there have been sporadic exceedances of this standard within MAGSA, there is little indication of a significant or continual increase in concentrations of TCP (MAGSA 2020). MAGSA will continue to monitor for TCP through its monitoring network.

Uranium

Uranium occurs naturally in groundwater in parts of the MAGSA area. It is derived from Sierra Nevada granitics and will preferentially adhere to clays. Uranium has not been identified in GAMA data from 2015 through 2018 but is tested for by the state of California through public water supply systems (MAGSA 2020).

4.10.2 Regulatory Setting

4.10.2.1 Federal

Clean Water Act. The 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). This Act makes available Federal subsidized flood insurance to owners of flood-prone properties. To facilitate identifying areas with flood potential, 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 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 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.

4.10.2.2 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 (CDWR 2024). In 2014, the California Legislature 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. 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 Control Board. The 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. 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). AB3030 (Stats. 1992, CH. 947), passed in 1992, 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 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.

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.

Water Recycling Policy. In April 2019 the State Water Board adopted an update to the Recycled Water Policy (Resolution No. 2018-0057) to include numeric goals for the use of recycled water, a narrative goal to encourage recycled water use in groundwater-over drafted areas, and annual reporting requirements for the volume of recycled water produced and used (California State Water Resources Control Board 2024a).

Irrigated Lands Regulatory Program (ILRP). The ILRP addresses waste discharge (e.g., sediments, pesticides, nitrates) from commercial irrigated lands. The goal of ILRP is to reduce impacts of agricultural discharges to groundwater and surface water.

4.10.2.3 County and Regional

Fresno County Groundwater Management Ordinance. The Fresno County Groundwater Management Ordinance (Municipal Code Chapter 14.03) requires that a permit be obtained to extract groundwater underlying lands in Fresno County for direct or indirect transfer to lands outside the County. Permits require that a groundwater management plan is adopted pursuant to the SGMA, and that a groundwater monitoring and mitigation program is instituted where applicable. Water exchanges, short-term water transfers, groundwater banking programs, and emergency transfers are exempt from permit requirements. The Groundwater Management Ordinance aims to protect groundwater resources from overdraft and ensure continued availability of groundwater for agricultural production in Fresno County.

MAGSA's Groundwater Sustainability Plan (GSP). The GSP, in compliance with AB3030 and the SGMA, describes the physical and geographical characteristics of surface and ground waters in the McMullin Area, and the interactions of surface and ground waters. This detailed plan includes baseline information on surface and groundwater quality to inform future actions within the basin.

4.10.3 Potential Impacts

WAT a): Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

(Less than Significant Impact with Mitigation Incorporation)

Bachand et al. (2023b, Appendix 3) assesses and summarizes expected water quality effects and recommends associated water quality management and mitigation measures. The analysis primarily relies upon spatial analyses of groundwater data from the California Water Board's GAMA Program (GAMA 2023). The report concludes that contract water is of higher quality than the resident groundwater within MAGSA, and that the quality of resident groundwater will improve with implementation and operations of the Bank, including for key water quality constituents such as salts, nitrate, selenium, and TCP.

Short-term water quality perturbations will occur in resident groundwater underlying and near recharge basins because of legacy nitrate and salts loads being flushed from the vadose zone during initial recharge. This first flush is expected to occur through infiltration of the first 15 – 30 feet of applied contract water. In the long-term, flushing of constituents from the vadose zone is expected to be relatively minor because of both spatial and temporal mixing and dilution (Bachand et al. 2023b).

Mass balance calculations predict groundwater underlying recharge basins and above the Corcoran Clay will initially increase an estimated 350 mg/L for TDS and by 7 mg-N/L for nitrate. This first flush effect is expected to be locally limited near recharge basins to an estimated area up to one square mile (Bachand et al. 2023b). Roy et al. (2017) developed an integrated vadose zone and groundwater modeling framework (calibrated using soils and groundwater data within and near MAGSA) which predicts these increased concentrations will become negligible after 10 years or further than 500 meters away from the recharge basin. They estimate infiltrated contract water exceeding 15-30 feet of recharge will improve groundwater quality. Those conclusions are supported through the hydrologic model developed for this analysis (Appendix 2; Bachand et al. 2023a) which finds expected changes in groundwater hydrology resulting from recharge basins will be localized to the recharge basin within an estimated distance of a half mile from the recharge basins.

The Bank will be required to meet State and Federal water quality standards and Non-Project Water return standards for contract water returned to the Bank partners. These water quality standards will include drinking water quality standards as well as Non-Project water quality standards consistent with the California Department of Water Resources policies (DWR 2012). Water quality requirements will be met through design and operations constraints and will be monitored in real time. If monitoring indicates that bank export waters are not meeting these standards, exports will be curtailed as detailed in Mitigation measure WAT-5 (section 2.22).

Bachand et al. (2023b) concludes that the key water quality constituents (e.g., total dissolved solids [TDS], chloride, sodium), nitrate, selenium, and TCP (1,2,3-Trichloropropane) are lowest in the eastern area of MAGSA, which represents about one third the area of MAGSA. The Bank's design and operations prioritize extracting high quality water from that region and include management to avoid first flush groundwater quality perturbations.

WAT b): Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?

(No Impact)

The Bank will recharge contract water for aquifer storage and then, through coordinated and monitored use of recovery wells, return contract water to its partners, leaving behind 10 percent of received water. Bachand et al. (2023a) used a local scale reduced-order MODFLOW (ROM) model to simulate groundwater mounding and depression potentially induced by Bank operations (Appendix 2). The predicted changes of groundwater levels were superimposed onto the baseline groundwater contours within MAGSA and show that impacts from Bank recharge and recovery actions will be minor across the greater groundwater hydrology within MAGSA. Prevailing groundwater conditions include a 100 ft. decline in groundwater elevations from the east and northern boundaries of MAGSA to the southwest

corner of MAGSA, with a cone of depression in the southwest of MAGSA to which groundwater flows in all directions (Bachand et al. 2023b). Bachand et al. (2023b) modeled changes in groundwater under three different scenarios for a 24-year period representing a historic condition bookended by a future dry and wet condition. The model results indicate that recharge and recovery efforts during that period will have only minor effects on background groundwater hydrology.

Through their hydrologic analysis, Bachand et al. (2023b) conclude groundwater losses will not occur and the remaining 10 percent of recharged water will help to replenish the over-drafted aquifer. This water will support MAGSA in complying with SGMA requirements and the various measures of groundwater sustainability (e.g., groundwater level, groundwater supply, and subsidence). The prevailing groundwater contours lead groundwater into MAGSA on the east and southeast, and subsequently down toward a cone of depression along the southwest, which stops further movement downstream. Thus, the remaining water will stay within MAGSA and help to increase groundwater supplies and help reach groundwater sustainability in the area.

WAT c): Will 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 through the addition of impervious surfaces, in a manner which would:

i) result in substantial erosion or siltation on- or off-site?

(Less than significant impact with mitigation incorporated)

Erosion and Siltation During Construction. Construction activities, especially those occurring during the wet season, could increase erosion and temporarily impact surface water quality by discharging sediment and pollutants bound to sediment. Other pollutants associated with construction, such as trash, solvents, sanitary waste from portable restrooms or sewage treatment facilities, and concrete curing compounds could flow into and adversely affect the quality of any surface water. Bank construction is subject to the requirements of an NPDES Construction General Permit (CGP) because the construction footprint exceeds one acre of disturbance.

As specified under Mitigation Measure WAT-7, a SWPPP will be developed prior to construction to manage potential discharges from the site during construction that could affect area surface water quality. The SWPPP will require the construction contractor to implement measures to:

- Control all pollutants and their sources (e.g., construction, construction site erosion, other activities associated with construction);
- Identify and eliminate all discharges unrelated to stormwater that are not otherwise required to be under a RWQCB permit;
- Implement effective site BMPs to reduce or eliminate pollutants (i.e., stormwater discharges, authorized construction discharges unrelated to stormwater) to the level of Best Available Technology/Best Conventional Technology standards.

Erosion and Siltation During Operations. Because water for the Bank will be pumped from the Mendota Pool, it will not flow uncontrolled into the Bank canals and cause erosion. Received contract water will be low turbidity, with expected maximum turbidity levels of 5 NTU as currently found in water exported from the San Luis Reservoir (USBR 2017) and in line with current pump-in standards for Non-Project water (USBR 2019). With such low turbidity, settling will be negligible with essentially no solids settling from the contract water as it enters and passes through the Bank conveyance system.

ii) 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)

Local effects during rain periods. Within-farm features of the Bank will be consistent with typical farm features such as irrigation piping, ditches and tailwater ponds. The planned recharge basins and recovery wells are consistent with typical farm infrastructure and practices found within MAGSA. Precipitation within MAGSA is very low, averaging just under 9 inches annually from 1996-2016 (MAGSA 2020). Given the low precipitation rates, and infrastructure and practices typical of those already in use under farming, the Bank will not substantially affect runoff or flooding at the local and farm scale.

Regional effects during rain periods. Ground surface elevations in MAGSA generally decline from northeast to southwest. The fall across MAGSA is slight, averaging about 0.1 percent from the northeast to the southwest. Soils generally range from somewhat poorly drained to somewhat excessively drained. About 40 percent of the soils are somewhat poorly drained, and the remaining soils are moderately drained (1,500 acres), well drained (46,000 acres) and somewhat excessively drained (19,000 acres). Conveyance canals are placed along farm and county roads (Figure 1-5) and generally along areas with well drained soils to intercept and infiltrate surface runoff (Figure 1-10).

The area has little rainfall to drive significant regional runoff and exists across a nearly flat regional elevation. Canals provide potential barriers to local runoff, but area soils provide sufficient infiltration rates to limit any potential for increased surface runoff or flooding from the Bank implementation.

Effects from recharge operations. Under recharge operations, Bachand et al. (2023a) considered potential surface flooding from recharge water backing up through the vadose zone during recharge operations. Based upon model outcomes, they estimated groundwater mounding under recharge basins to range from 35 – 100 feet, depending upon the location, soils, number of basins, and other factors. Since groundwater depths currently range from 110 to 230 feet bgs, recharge water is not likely to back up to the extent that surface flooding or ponding will occur in adjacent lands. Thus, recharge operations will not reduce infiltration of rainwater and cause increased runoff, ponding, or flooding.

Mitigation Measure WAT-5 (Groundwater Monitoring) will be implemented to ensure flooding, ponding and surface runoff does not occur from recharge operations through monitoring groundwater levels. If groundwater levels were to rise sufficiently to substantially increase local runoff, monitoring will allow for adjusting recharge rates and shifting between basins as needed.

iii) 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 with mitigation incorporated)

The effects of the Bank infrastructure and its management are considered in the context of 1) potential interference on regional runoff, 2) runoff during construction; and 3) runoff from risks from failures.

During Construction. Prior to commencing construction activities, a SWPPP will be developed and implemented to control erosion, runoff, and release of other pollutants, as specified in Mitigation Measures WAT-7. Construction across the Bank will be stepwise and SWPPPs will be implemented accordingly.

Runoff resulting from infrastructure failures. Failure of the recharge basin berms could release water and cause minor, localized flooding. Any such releases would typically be confined to the immediate area by previously existing water management features such as berms and levees. Releases would occur in very flat areas with little sensitive infrastructure, residences, or municipal features, so the effects of such releases would be minor. Any released water would be high quality contract water and pose no pollution threat. Mitigation measures WAT-8 through WAT-11 include measures for managing potential releases and will ensure that impacts are less than significant.

Recharge basins will be contained within farm property boundaries and are typically planned to be 80 acres each, subdivided into smaller (e.g., 20 acre) checks to limit wind fetch and potential water releases.

Recharge basin water depths will typically be shallow (0.5 - 2.0 feet), limiting water storage. The Bank components are surrounded by agricultural fields that may have crops growing in them at any time of year, as well as some farm-related structures and residences. As discussed earlier, farmlands are relatively level and even the least permeable farmlands within MAGSA typically infiltrate at a minimum rate of 2.5 in/d (Bachand et al. 2016). Because of the minor nature of potential water releases and the surrounding agricultural lands and associated infiltration capacities, the Bank does not constitute a risk of injury or death but could lead to losses of root vegetables or other crops if they were maturing in fields that were inadvertently flooded.

iv) impede or redirect flood flows?

(Less than significant impact with mitigation incorporated)

Flood flow considerations include flood flows local to MAGSA and flood flows from the James Bypass.

Within MAGSA. Culverts will direct canal flow under roadways and stormwater channels so that the Bank will have no impact on flood flows.

From the James Bypass. The Bank is expected to have only a negligible effect of flood flows through the James Bypass. Based on the historical record and as previously discussed, flood flows are lower than 4,000 CFS over 80 percent of the time during the months contract water would be delivered through the Mendota Pool and James Bypass, meaning that ample capacity remains in the 4,750 CFS James Bypass to accommodate Bank discharges.

Mitigation Measure WAT-11 will be implemented to manage Bank diversion and recovery schedules to not interfere with flood releases through the James Bypass, or with contractor deliveries.

WAT d): In flood hazard, tsunami, or seiche zones, will the project risk release of pollutants due to Project inundation?

(Less than Significant Impact)

- **Tsunami or seiche zones.** The proposed project area is located well inland of any area that could be reached by a tsunami or seiche. There would be no impact associated with tsunami or seiche.
- **Inundation of farmlands within FEMA 100-year floodplain or flood hazard zone.** During construction, risk of release of pollutants will be reduced to a less than significant level by implementing a Spill Prevention and Response Plan and ensuring that the construction contractor abides by all regulations for transporting, using, and storing hazardous or potentially polluting materials. The project features have been designed to avoid known or potentially polluted areas including CAFO's, oil fields, landfills, or industrial areas. Operation of the proposed project would not involve use of potentially polluting materials other than minor amounts of fuel for maintenance vehicles or solvents to use on machinery during occasional maintenance.
- **Release of Pollutants.** While the Bank will include inundation of selected basins, the quality of surface water applied to the basins is generally higher than that of the groundwater in the region (Bachand et al., 2023a). Thus, the Bank and its infrastructure are not expected to introduce additional sources of pollution.

WAT e): Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

(Less than significant impact with mitigation incorporated) The MAGSA GSP provides a plan to achieve sustainable groundwater conditions by 2040 (MAGSA 2020). The goal can be achieved by increasing or maintaining groundwater supply, or by reducing demand. Sustainable groundwater, as

defined under SGMA, considers a balanced water budget that is not achieved by diminishing water quality, increasing subsidence, or reducing the surface water to groundwater connection (MAGSA 2020). The Bank is one of MAGSA's priority actions to move toward sustainable groundwater, as defined by SGMA, because 10 percent of received contract water will not be returned to the contractors but will instead be left behind to help replenish the aquifer.

Groundwater Quality. The Bank will recharge contract water that meets the Pump-in standard, consistent with the DWR (2012) policy for Non Project pump-in standards. A water quality standard will be set for this Project under Mitigation Measure WAT-2. The Mendota Pool Group pump-in standard, which incorporates both drinking water standards and more rigorous standards for select key constituents (e.g., trace metals, salts), will be implemented at the Bank and will improve drinking water quality in the area (e.g., salts, nitrate, selenium, TCP) (Bachand et al., 2023b) although there is potential for short-term degradation related to the first flush of constituents out of the vadose zone.

The Bank will also meet requirements when discharging water back to contractors. Bank operations will be conducted to avoid moving any existing plumes of poor groundwater quality or mobilizing of constituents into groundwater due to recharge activities.

Mitigation measures WAT-1 through WAT-6 are designed to reduce potential impacts on water quality reducing flush of legacy constituents from the vadose zone, importing water that is cleaner than existing groundwater, planning use of recharge basins to optimize groundwater quality, designing Bank components to control water movement and extract high quality water, monitoring to ensure that bank activities are accomplishing intended goals, and farming practices to avoid adding constituents to vadose zone for future mobilization.

Subsidence. Because groundwater levels are expected to generally increase over time with recharge, the Bank will help to reduce subsidence.

Surface water to groundwater connection. The Bank will not decrease the current surface to groundwater connection. Currently, groundwater depth ranges from about 110 to 230 feet below the ground surface where recharge basins are placed. The Bank model results estimate groundwater levels will increase by 50 – 100 ft (Bachand et al. 2023b), indicating surface water and groundwater will not be connected.

4.11 LAND USE AND PLANNING (USE)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

4.11.1 Environmental Setting

Land Use

The project area is situated in a rural, agricultural area of central Fresno County, to the west and southwest of the city of Fresno. Land use within the project area is primarily agricultural, but also includes residential and labor housing, conservation areas, and a county landfill. The only census-designated place within the project area is Raisin City, which has a population of approximately 300 (U.S. Census Bureau 2019), an elementary school, two churches, and three markets. From the mid-1800s the land has been used for livestock grazing and other types of agricultural production.

The two conservation areas found in the project area, Alkali Sink Ecological Reserve and Kerman Ecological Reserve, are managed by the California Department of Fish and Wildlife (GreenInfo Network 2022). The American Avenue Landfill, found near the center of MAGSA, is owned and operated by Fresno County (Fresno County 2022).

Nearby communities include Kerman (1 mile east), Caruthers (1 mile east), Helm (2 miles west), San Joaquin (2 miles west), Tranquility (2 miles west), and Mendota (4 miles west). The Mendota Wildlife Area is located adjacent to the west side of the project area at the western terminus of the Jensen Canal.

Land Ownership

The vast majority of the project area is privately owned, except for the two ecological reserves, the landfill, and roads owned by the county and state.

Over 95,000 acres within the project area are participating in Williamson Act contracts. Under the Williamson Act, also known as the California Land Conservation Act of 1965, an owner of agricultural land may enter into a contract with the County if the landowner agrees to restrict use of the land to the production of commercial crops for a term of not less than 10 years. The term of the contract is automatically extended each year unless notice of cancellation or nonrenewal is given. Certain compatible uses are also allowed on the property. In return, the landowner is taxed on the capitalization of the income from the land and not on the assessed value (CDC 2021).

4.11.2 Regulatory Setting

4.11.2.1 Federal

There are no federal regulations relating to Land Use and Planning that are applicable to the Project or the Project site 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 Policy Act in addition to CEQA. A separate environmental study under NEPA will be prepared by BOR.

4.11.2.2 State

The proposed 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 proposed project.

4.11.2.3 County and Regional

County Planning

Two county zoning categories are found in the project area. Of the 120,496 acres found within the project area, 120,430 acres are zoned “AE” Exclusive Agricultural District. In and around Raisin City, 66 acres are zoned “A-1” Agricultural District. These zoning designations are summarized below from the relevant sections of the Zoning Ordinance of the County of Fresno (Fresno County 2018).

Section 816: “AE” Exclusive Agricultural District. This district is meant to be an exclusive district for agriculture and uses that are necessary and integral to agricultural operations, especially by maintaining large parcels of land for agricultural purposes and preventing encroachment from non-agricultural uses. The AE zone is accompanied by a number that indicates the minimum lot size within the district. In the case of the project area, the zoning is AE20, indicating a minimum lot size of 20 acres.

Section 847: “A-1” Agricultural District. This district provides for the development of unincorporated lands and properties in the county that are not included in other classifications. Lands with this designation may be subdivided to allow for more typical residential development. Provisions from Section 816 (described above) and Section 856 (Regulations for Single Mobile Home Occupancy) apply in this area.

Fresno County General Plan. The applicable land use plan for the project area is the Fresno County General Plan (Fresno County 2000). The current plan, adopted in 2000, is in the process of being amended, and a public review draft was made available in July 2021 (Fresno County 2021a, 2021b, 2021c). The Plan provides for a comprehensive, long-term framework designed to protect Fresno County’s agricultural, natural, and cultural resources while allowing for economic development.

The county-wide land use diagram included in the General Plan shows the entire project area as Agriculture. Agricultural goals and policies are the primary land use elements that pertain to the project area. Fresno County is among the top agricultural producing counties in the U.S. and maintaining agricultural production capacity in the county through effective land use planning is a high priority. The General Plan’s Agricultural Goals and Policies applicable to the proposed project are as follows:

Goal LU-A, Agriculture: To promote the long-term conservation of productive and potentially productive agricultural lands and to accommodate agricultural-support services and agriculturally related activities that support the viability of agriculture and further the County’s economic development goals.

Policy LU-A.1, Agricultural Land Conservation: The County shall maintain agriculturally designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available or can be provided consistent with the adopted General or Community Plan.

Policy LU-A.16, Agricultural Land Preservation Programs: The County should implement agricultural land preservation programs for long-term conservation of viable agricultural operations. Examples of programs to be considered should include land trusts, conservation easements, dedication incentives, new and continued Williamson Act contracts, Farmland Security Act contracts, the California Farmland Conservancy Program, agricultural education programs, zoning regulations, agricultural mitigation fee program, urban growth boundaries, transfer of development rights, purchase of development rights, and agricultural buffer policies.

Policy LU-A.18, Land Improvement Programs: The County shall encourage land improvement programs to increase soil productivity in areas containing lesser quality agricultural soils.

Policy LU-A.19, Reduced Soil Erosion: 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, University of California Cooperative Extension, and other agencies and organizations.

Policy LU-A.20, Water Resources: The County shall adopt and support policies and programs that seek to protect and enhance surface water and groundwater resources critical to agriculture.

Regional Planning

The Kings Basin Water Authority (KBWA) is a coalition of water agencies, cities, counties, and environmental interests in the Kings River Basin that addresses the most pressing local water issues, namely groundwater depletion, supply reliability, and quality. KBWA has developed an Integrated Regional Water Management Plan that “defines issues, guiding principles, regional goals, objectives, strategies, actions, and projects to enhance the beneficial uses of water for the Kings Basin and ensure the sustainability of the water supply.” The plan was updated in 2018 (KBWA 2018).

The Plan includes the following Regional Goals (RGs), all of which apply to the project, with RG1, RG2, and RG4 being especially relevant:

- RG1 – Halt the Current Overdraft and Provide for Sustainable Management of Surface and Groundwater
- RG2 – Increase Water Supply Reliability, Enhance Operational Flexibility, and Reduce System Constraints
- RG3 – Improve and Protect Water Quality
- RG4 – Provide Additional Flood Protection
- RG5 – Protect and Enhance Aquatic Ecosystems and Wildlife Habitat

4.11.3 Potential Impacts

USE a) Would the Project physically divide an established community?

(No Impact) The project area is mostly comprised of agricultural land with the exception of Raisin City and a few other small communities such as Perry Colony, Alkali Flats, and Fred Rau Dairy. These

communities would not be divided in any manner by the proposed project. Conveyance alignments will run outside of these communities and will not disrupt these communities or their land uses, therefore there will be no impact.

USE b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

(No Impact) The proposed project does not conflict with any land use plans or policies and in fact helps Fresno County achieve water sustainability goals identified in both the Fresno County General Plan and the Integrated Regional Water Management Plan (IRWMP). The Fresno County General Plan highlights the importance of agriculture in the County and strives to maintain and grow the agricultural production in the area. The proposed project will contribute to groundwater sustainability and result in a long-term beneficial impact to agriculture in the project area. It has no features that would affect the use or disposition of lands enrolled in Williamson Act contracts. The proposed project also closely aligns with the IRWMP, specifically Regional Goals 1, 2 and 4. The proposed project will contribute to long-term water sustainability, increase the local water supply over time, and provide additional flood protection. The proposed project does not conflict with any land use plans or policies and will have no impact.

USE 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 its planning area, none of which fall within the project area. There are no other HCPs or conservation plans relevant to the project area, and there will be no impact.

4.12 MINERAL RESOURCES (MIN)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
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 locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

4.12.1 Environmental Setting

Mineral resources known to exist in Fresno County include fossil fuels such as oil, gas, and coal; aggregate (sand and gravel); metals, including chromite, copper, gold, mercury, and tungsten, molybdenum; and other minerals used in construction or industrial applications, such as asbestos, high-grade clay, diatomite, granite, gypsum, and limestone (Fresno County, 2021c).

Mines

The California Division of Mine Reclamation (DMR) website provides information about the Surface Mining and Reclamation Act of 1975 (SMARA) mines, abandoned mines, laws and regulations, and forms, maps, workshops, and publications. An interactive database (web map) shows the locations of active mines and information submitted annually by mine operators related to annual reporting requirements. This web map indicates that there are no active mines within the project area (DMR 2022). The closest mine is in Mendota, approximately five miles to the northwest, and about eight other mines are located near the City of Fresno over ten miles away. These mines are for sand, gravel, stone, and rock extraction.

Oil and Gas Wells

WellSTAR is an electronic database containing information about oil, gas, and geothermal well tracking, production, permitting, incidents, and reporting. It is maintained and accessed through the CDC's CalGEM (CalGEM 2022b). Well Finder is CalGEM's online mapping application and is publicly accessible. Well Finder provides information about the type of well; whether it is in operation, suspended, idle, or plugged; dates of operation; the location of the well; and its name, well number, and American Petroleum Institute (API) number.

There are 22 active wells within the project area; 19 of these are oil and gas, while three are for water disposal (CalGEM 2022b). The Raisin City Oil Field encompasses 20 of these, and two are located to the south of the oil field.

There are also 113 idle wells and nine cancelled wells within the project area. The remaining 233 wells in the project area have been plugged. Idle oil and gas wells are those that have been inactive for two or more years but have not been permanently sealed. Plugged wells are those that have been permanently sealed. The Idle Well Program revised the regulations in 2019 to encourage operators to plug wells that are idle to prevent contaminants from migrating to groundwater or onto the surface (CalGEM 2022a).

Mineral Resource Zones

The CDC's Division of Geology produces mineral land classification (MLC) documents for certain regions that classify the area into Mineral Resource Zones (MRZs). One of these MLC documents was produced for aggregate materials in the Fresno Production-Consumption Region in 1988 and was updated in 1999 (DMG 1999). This document shows that most of the project area overlaps with the MLC evaluation area and is classified primarily as MRZ-1 with some areas of MRZ-3. There are no MRZ-2 zones of known, important mineral resources in the project area (CDC 2022a, DMG 1999, Fresno County 2021a). The only MRZ-2 zones in the Fresno area are located along the San Joaquin and Kings Rivers, east of the project area (Fresno County 2021a).

4.12.2 Regulatory Setting

4.12.2.1 Federal

There are no federal regulations relating to Mineral Resources that are applicable to the Project or the Project site.

4.12.2.2 State

Regulation of mineral resources in the State of California falls under the California Geologic Energy Management Division (CalGEM) (formerly California Division of Oil, Gas and Geothermal Resources) and DMR, both of which are within the California State Department of Conservation (CDC). The DMR provides oversight for administration of the SMARA, which ensures continued accessibility of important, recognized surface mineral resources. DMR also prioritizes the return of mined lands to usable and safe condition.

SMARA requires the State Geologist to classify MRZs for use in land use planning decisions to ensure continued accessibility of important, recognized surface mineral resources. SMARA is intended to provide local agencies with the information necessary regarding the location and importance of surface mineral resources (DMG 1999). Under SMARA, state agencies guide and regulate city and county enforcement of SMARA, but the local land use jurisdictions are the lead agencies for mineral resource issues. The MRZ categories are defined as follows, with MRZ-2 being the most important due to known or likely presence of valuable mineral resources (Fresno County 2021a):

- MRZ-1: No significant mineral deposits are present or little likelihood exists for their presence.
- MRZ-2: Significant mineral deposits have been identified, or a high likelihood exists for their presence.
- MRZ-3: Mineral deposits exist, but their significance cannot be evaluated from available data.
- MRZ-4: Inadequate information for assignment to any other MRZ.

4.12.2.3 County and Regional

Fresno County General Plan. At a local level, mineral resources policies are established by the Fresno County General Plan. The previous plan was dated 2000 and is in the process of being updated. A public review draft version of the updated plan was released in July 2021 (Fresno County 2021a), and a comparison of proposed changes to the previous General Plan shows that changes to mineral resources have been minimal (Fresno County 2021b). Mineral resources are addressed within the Open Space and Conservation section of the plan.

Goal OS-C: To conserve areas identified as containing significant mineral deposits and oil and gas resources for potential future use, while promoting the reasonable, safe, and orderly operation of mining and extraction activities within areas designated for such use, where environmental, aesthetic, and adjacent land use compatibility impacts can be adequately mitigated.

Twenty-one specific sub-goals are indicated for mineral resources; sub-goals OS-C.1 through OS-C.12 are relevant to minerals, while OS-C.13 through OS-C.21 are relevant to oil and gas.

4.12.3 Potential Impacts

MIN 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) No MRZ-2 zones of known, important mineral resources occur in the project area. The project area is classified mostly MRZ-1 with some areas of MRZ-3; therefore, there are no known or likely valuable mineral resources in the project area, and none are likely present (CDC 2022a, DMG 1999, Fresno County 2020b). No active mines occur within the project area, and the closest active mine to the project area is a sand and gravel mine located northwest of the project area in Mendota (DMR 2022). Well Finder indicates 368 wells occur in the project area including 22 active wells, 113 idle wells, nine cancelled wells, and 233 plugged wells (CalGEM 2022b). Twenty of the active wells are located within the Raisin City Oil Field. Proposed project infrastructure designs account for locations of active wells and avoid construction actions which would have potential to impact active wells. State and local agency regulations, plans, and permitting reviews would ensure that planned project infrastructure would not impede or preclude access to subsurface mineral resources. The proposed project would not result in the loss of availability of a known mineral resource. Thus, the proposed project would have no impact.

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

(No Impact) At the local level, policies intended to preserve the future availability of mineral resources are outlined in the Fresno County General Plan, Policy OS-C.1 through OS-C.20. In general, the County would not permit incompatible land uses within the impact zone of existing or potential surface mining areas or areas designated MRZ-2 (Fresno County 2000a and Fresno County 2000b). The County would not permit land uses which threaten the future availability or preclude the future extraction of such resources. No MRZ-2 zones occur in the project area. No other local plans applicable to the project area delineate mineral resource recovery sites. The proposed project would not result in the loss of availability of local mineral resource recovery sites. Thus, the proposed project would have no impact.

4.13 NOISE (DBA)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or 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?	☐	☐	☐	☒

4.13.1 Environmental Setting

The primary land use zone within the project area is exclusive agricultural use, with a small inclusion of agriculture district zoning in Raisin City. The project area is surrounded primarily by other agricultural lands, as well as the Fresno Slough to the west and the San Joaquin River to the north. Raisin City falls within the project area, while nearby communities include Kerman, Caruthers, Helm, San Joaquin, Tranquility, and Mendota. Most noise sources in this area are associated with agricultural practices, and include heavy equipment, traffic, and stationary sources, such as pumps. Typical noise levels are low, but seasonal practices such as field preparation, planting, fertilizing, and harvesting may cause temporary and substantial increases in noise. Within Raisin City, noise sources would also include those typical of a small community such as vehicle traffic, small commercial operations, and residential areas.

Noise standards identify sensitive receptors, such as residences, hospitals, schools, churches, and libraries. While the project area is not zoned for residential use, there are residential structures and mobile homes distributed throughout the project area associated with farm ownership and employment. There are no hospitals in or near the project area.

The only school within the project area is Raisin City Elementary School. There are several other schools near the project area; most of them are associated with neighboring communities, but some are in rural areas. Table 4-11 shows the details of these schools and approximate distances from the project area.

Table 4-11: Schools Near the Project Area

School Location and Type	In Project Area?	Approximate Distance and Direction
Raisin City Elementary School	Yes	Within Project Area
American Union Elementary School	No	2 miles east
Caruthers High School	No	1 mile east
Burrell Elementary School	No	1 mile south
Helm Elementary School	No	2 miles west
San Joaquin Elementary School	No	2 miles west
Tranquility Elementary School	No	2 miles west
Tranquility High School	No	2 miles west
Mendota Schools (5x, Elementary to High School)	No	4 miles west
Kerman Schools (9x, Preschool to High School)	No	≥1 mile east
Kerman Rural Schools (3x)	No	≥1 mile east

No libraries are within the project area. Several branches of the Fresno County Public Library are located near the project area, and are associated with communities including Caruthers, San Joaquin, Tranquility, Mendota, and Kerman. There are three churches within the project area, including the Raisin City Community Church, the Raisin City Holiness Church, and the Iglesia Fuerzas del Calvario #3 (situated to the east of Raisin City).

4.13.2 Regulatory Setting

4.13.2.1 Federal

Noise is federally regulated through the Clean Air Act (Title IV – Noise Pollution), the Noise Control Act of 1972, and the Quiet Communities Act of 1978. However, the EPA decided in 1981 that general noise issues were best handled by state and local governments (EPA 2022). While the EPA retains authority to investigate and respond to noise-related matters, most enforced federal regulations pertaining to noise are relevant to specific industries, activities, manufacturing standards, or occupational exposure standards.

4.13.2.2 State

The California Noise Control Act of 1973. This Act gave local governments jurisdiction over the regulation of noise. As a result, noise elements are included in local government general plans, and are meant to ensure that noise levels are compatible with adjacent land uses. Most jurisdictions also have noise ordinances, which serve as enforcement mechanisms for controlling noise.

4.13.2.3 County and Regional

Fresno County General Plan. The Fresno County General Plan contains nine policies related to noise, of which the following may apply to this project:

Policy HS-G.4. Noise Mitigation Design and Acoustical Analysis: So that noise mitigation may be considered in the design of new projects, the County shall require an acoustical analysis as part of the environmental review process where:

- Noise sensitive land uses are proposed in areas exposed to existing or projected noise levels that are “generally unacceptable” or higher according to the Figure HS-1: “Land Use Compatibility for Community Noise Environments;”
- Proposed projects are likely to produce noise levels exceeding the levels shown in the County’s Noise Control Ordinance at existing or planned noise-sensitive uses.

Policy HS-G.6. Construction-related Noise: The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.

Policy HS-G.8. Noise Levels Compatibility: The County shall evaluate the compatibility of Proposed Projects with existing and future noise levels through a comparison to Figure HS-1, “Land Use Compatibility for Community Noise Environments.”

The Fresno County Noise Control Ordinance (Fresno County Code Chapter 8.40) specifies standards for sources of excessive noise affecting residences, schools, hospitals, churches, and libraries (Fresno County 2022a). Sources causing exterior noise levels in sensitive areas that exceed 50 dBA daytime or 45 dBA nighttime over 50 percent of the time (30 minutes of each hour) are prohibited by the ordinance, and non-emergency construction activities are limited to daytime hours. Noise from air conditioning and refrigeration equipment, waste and garbage collection equipment, and electrical substations are also specifically addressed by the ordinance. The County health officer is responsible for enforcement of the ordinance. This code section also exempts noise from construction-related activity between 6:00 am and 9:00 pm weekdays and between 7:00 am and 5:00 pm on weekends.

4.13.3 Potential Impacts

DBA a): Would the project result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

(Less Than Significant Impact) Noise may result from use of heavy equipment during construction and from use of pumps during operations. Construction equipment likely in use will include air compressors, excavators, backhoes, scrapers, cement trucks, and dump trucks. Typical noise emission levels from these sources are shown in Table 4-12.

Table 4-12: Construction Equipment Noise Emission Levels

Type of Equipment	Typical Noise Level at 50 ft from Source (dBa)	
	Without Feasible Noise Control	With Feasible Noise Control ¹
Air Compressor	80	75
Backhoe	80	75
Cement Truck	85	75
Grader	85	75
Excavator	88	80

Scraper	85	80
Source: FTA 2018.		

The noise levels shown above assume that the receptor is 50 feet away from the sources. Guidance from the Federal Transit Administration (FTA) indicates that noise levels attenuate by an average of 5 decibels for every additional 50 feet of distance. Most receptors will be located at a distance of at least one mile from the construction area, a distance at which noise will have attenuated to background levels. A few residences are likely to be located within 200 feet of the construction area, a distance at which the highest noise levels would have attenuated to 65 decibels, which is considered “Conditionally Acceptable” in agricultural areas according to Fresno County noise standards. The construction contractor will implement all feasible noise control features, including intake mufflers, exhaust mufflers, and engine shrouds, which will further reduce noise levels. Construction noise will be temporary and will cease upon completion of construction.

The Fresno County Code exempts construction-related activity between 6:00 am and 9:00 pm weekdays and between 7:00 am and 5:00 pm on weekends (Section 8.40.060C of the Fresno County Code). Since construction would occur during normal weekday hours, construction noise would fall within the exemption periods and would be consistent with Fresno County’s General Plan policies and noise standards.

Pumps used during operations of the proposed project would operate only when flows are available for capture or groundwater is being discharged. Most pumps will be run by electric motors, which generate minimal noise. Noise generated by pumps running on natural gas or propane will be consistent with normal noises occurring in an agricultural setting and will be consistent with Fresno County noise standards. These impacts will be occasional and temporary and will be consistent with existing noise levels; therefore, impacts will be less than significant.

DBA b): Would the project result in the generation of excessive groundborne vibration or groundborne noise levels?

(Less Than Significant Impact) Fresno County has not adopted specific policies pertaining to vibration levels. Typically, substantial ground borne vibration and noise levels occur because of blasting, tunneling through rock, pile driving, geotechnical exploration, and passing trains. Construction vibrations can be transient, random, or continuous and are normally perceptible to humans at approximately 65 VdB, while 85 VdB is the vibration level that is acceptable only on an infrequent basis. Soils in the area are deep and loamy and are not conducive to transmission of vibration or ground borne noise.

Table 4-13: Typical Construction Equipment Vibration Levels

Equipment	¹ PPV at 25 ft (in/sec)	² RMS at 50 ft
Large Bulldozer	0.031	81
Caisson Drilling	0.031	81
Loaded Trucks	0.027	80
Notes (Source: FTA 2018): ¹ Peak Particle Velocity (PPV): The peak signal value of an oscillating vibration velocity waveform. Usually expressed in inches/second in the United States. ² Root Mean Square (RMS): The square root of the arithmetic average of the squared amplitude of the signal.		

Construction of the proposed project would require the use of heavy equipment that would temporarily increase groundborne noise and ground vibration levels at properties near the work area. Groundborne vibration or groundborne noise impacts may be produced by construction equipment and by large trucks and would be limited to the construction phase of the project. Construction activity groundborne noise levels at and near the project areas would fluctuate, depending on the type, number, and duration of uses of various pieces of construction equipment. These impacts would be temporary.

Construction activities would occur between the hours within the construction exemption period specified in the Fresno County General Plan. Project operations would not generate noticeable groundborne vibration or groundborne noise, nor would they exceed FTA thresholds for vibration at the nearest residences. This impact will be less than significant.

DBA c): For a project located within the vicinity of a private airstrip or 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) The project area is not within two miles of any public or private airports. The San Joaquin Airport CA-32 is approximately five miles east of the project. The Du Bois Ranch Airport is approximately 5.5 miles north of the project. The project area is included in the Airport Influence Area or Land Use Compatibility Zone as identified in the Fresno County Comprehensive Airport Land Use Plan (ALUCP). The project would not expose people residing or working in the area to excessive noise levels. There would be no impact.

4.14 POPULATION AND HOUSING (POP)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Induce substantial unplanned 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 people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

4.14.1 Environmental Setting

The estimated population of Raisin City, a city within the project boundary, has a current population of approximately 377, a nearly 65 percent increase from the 2010 population of 231 (US Census Bureau 2020). The age demographics of Raisin City have not changed drastically but have seen a shift, with 27percent of the population under the age of 18, 55 percent ranging from 19-64, and 18 percent over the age of 65 in 2020; whereas in 2010, 40 percent of the population was under the age of 18, 48 percent was 19-64, and 3 percent was over the age of 65. In addition to Raisin City, three small communities lie within the project area and have populations as low as 24 and as high as 100 (Figure 4-7).

The city of Kerman, approximately 2 miles northeast of the MAGSA boundary, had a total population of 14,920 in 2020 which grew from 12,708 in 2010 (US Census Bureau 2020). The age demographics have nearly remained unchanged since the 2010 census with about 34 percent of the population being under the age of 18, 57 percent ranging from 19-64 in age, and 9 percent being over the age of 65 in 2020; whereas in 2010, about 35 percent of the population was under the age of 18, 56 percent were in the 19-64 age range, and 9 percent were over the age of 65.

4.14.2 Regulatory Setting

4.14.2.1 Federal

There are no federal laws associated with population and housing that will affect the project area however, under Executive Order 12898 federal agencies are required to identify and address low-income communities and minority populations to address environmental justice. Executive Order 14096 requires agencies to notify communities if toxic or hazardous materials are released from a federal facility. The EO emphasizes the importance of public participation and Tribal participation in federal actions (FR 88 25251).

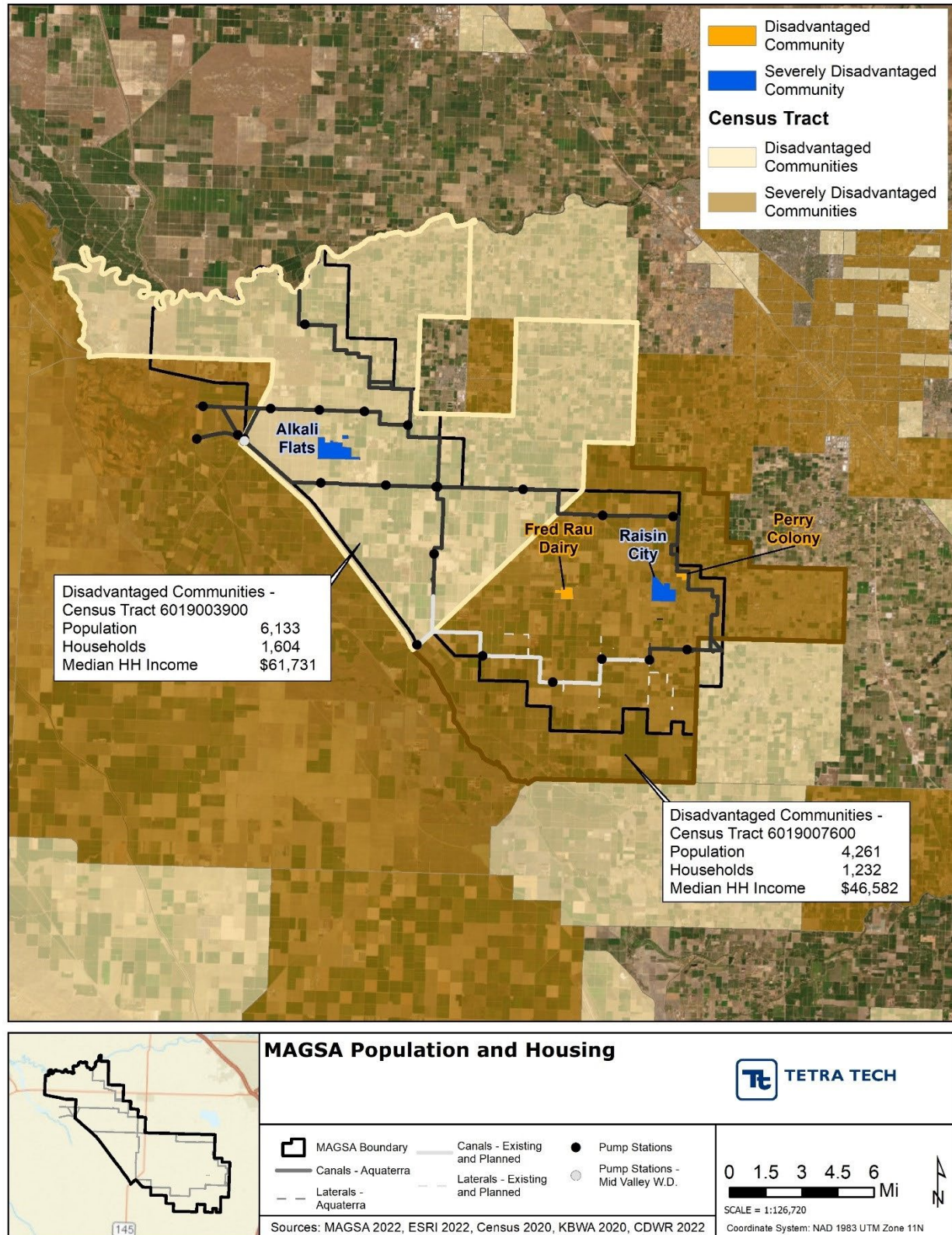


Figure 4-7: Population and Housing

4.14.2.2 State

The state of California, since 1969, requires that all local governments adequately plan to meet the housing needs of everyone in the community after the enactment of the California Housing Element law (CDHCD 2021). This law acknowledges that for the private market to adequately address housing needs, local governments must adopt plans and regulatory systems that provide opportunities for housing development. Local governments abide by this law by providing a general plan. The California Department of Housing and Community Development (HCD) estimates California's project population growth that has the potential to occur in each county in the state based on population projections created by the Department of Finance and assigns a particular housing need. Local governments are required to update their housing element every eight years and the HCD must approve the plan.

4.14.2.3 County and Regional

In 2016, the Fresno Multi-Jurisdictional 2015-2023 Housing Element (Fresno COG 2015) was created and includes the project area. The document contains goals and regulations associated with new housing development, affordable housing, housing and neighborhood conservation, special needs housing, fair and equal housing opportunities, and sustainable development.

Fresno County General Plan. Housing through zoning ordinances is addressed in the Fresno County General Plan (Fresno County 2000). Most of the project area is zoned AE-20, or Exclusive Agriculture with a 20-acre minimum lot size and no more than 1 residence for each 5 acres. Raisin City is zoned A-1, or Agricultural District, and lot sizes must be at least 100,000 square feet.

4.14.3 Potential Impacts

POP a): Would the proposed 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) The proposed project will take place in primarily agricultural land and will not result in or contribute to the construction of new roads, homes, or other developments and therefore will not directly result in increased population growth.

During the construction phase of the project, there will be a temporary increase in the local daytime population, as contractors and construction crews are working on site. These construction crews and contractors will typically not stay within the local community and contribute towards the local population after the completion of the project. Additional housing and infrastructure will not be needed during the construction phase of the project.

POP b): Would the proposed project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

(No Impact) The proposed project will take place in primarily agricultural land with little to no residential areas and is designed to avoid any dwellings so people and/or housing will not be displaced. The project will not include the removal of existing infrastructure, including housing, so there will be no impact.

4.15 PUBLIC SERVICES (PUB)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
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?	☐	☐	☐	☒

4.15.1 Environmental Setting

Fire stations with jurisdiction in the project area include Fresno County Fire Protection Districts (FCFPD) located in the cities of Fresno, Mendota, and Tranquillity. The North Central Fire Protection District serves the city of Kerman and unincorporated areas around Fresno and Kerman.

The Fresno County Sheriff's Office (FCSO) provides patrol services for its more than 6,000 square miles. In 1983, patrol services were decentralized and divided into four patrol areas. Each area is commanded by a lieutenant who supervises field services from a substation located in each of the areas. Portions of the project area overlay with Patrol Areas 1 and 3. Patrol Area 1 covers most of the project area, from Mendota east to Kerman and south to the Helm area. While personnel are still assigned to work out of the Patrol Area 1 substation in San Joaquin, the substation is currently closed to the public due to staffing shortages. Patrol Area 3 comprises the Raisin City, Caruthers, and Riverdale regions.

Emergency response services are provided through dialing 911. American Ambulance Posts are located in the towns of Fresno, Kerman and San Joaquin and provide emergency transportation from the project area to the nearest emergency facility. The nearest emergency medical centers providing 24-hour care include Adventist Health Medical Office in Kerman and Community Regional Medical Center in Fresno. Other emergency rooms in Fresno include Saint Agnes Medical Center and Kaiser Permanente Fresno Medical Center.

Other nearest services are provided in the cities of San Joaquin, Tranquillity, and Mendota. Each city has a County Branch Library, City Hall, and senior/community centers. Elementary schools are found in

Helm, San Joaquin, Tranquillity, Mendota, Kerman, and Raisin City. High schools are found in Tranquillity, Mendota, and Kerman.

Applicable public services for the area include:

- Fresno County Fire Protection District, Tranquillity Station 95, 25101 Morton Street, PO Box 645, Tranquillity, CA 93668, (559) 698-5500
- Fresno County Fire Protection District, Mendota Station 96, 101 McCabe Ave, Mendota, CA 93640, (559) 655-4107
- North Central Fire Protection District, Station 55 Headquarters, 14850 W. Kearney Blvd, Kerman, CA, 93630, (559) 275-5531
- Fresno County Fire Protection District Headquarters, 210 S. Academy, Sanger, CA 93657, (559) 493-4300
- Fresno County Sheriff's Headquarters, 2200 Fresno Street, Fresno, CA 93721, (559) 600-8400.
- Adventist Health Medical Office – Kerman Central, 275 S Madera Ave # 201, Kerman, CA 93630, (559) 846-5240
- Community Regional Medical Center, 2823 Fresno St, Fresno, CA 93721, (559) 459-6000
- San Joaquin Branch Library, 8781 Main Street, San Joaquin, CA 93660 (559) 693-2171
- Tranquillity Branch Library, 25561 Williams Street, Tranquillity, CA 93668, (559) 698-5158
- Mendota Branch Library, 1246 Belmont Ave, Mendota, CA 93640, (559) 600-9291
- Kerman Branch Library, 15081 W Kearney Blvd, Kerman, CA 93630, (559) 846-8804
- San Joaquin Community Center, 22058 Railroad St, San Joaquin, California 93660, (559) 693-4311
- Kerman Senior Center, 720 S 8th St, Kerman, CA 93630, (559) 846-8643
- Mendota Community Center, 295 Tuft St, Mendota, CA 93640, (559) 655-4927

4.15.2 Regulatory Setting

4.15.2.1 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.

4.15.2.2 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.

4.15.2.3 County and Regional

Fresno County General Plan. The Fresno County general plan policies relevant for public services for the Project are:

PF-C.21. The County shall promote the use of surface water for agricultural use to reduce groundwater table reductions.

PF-E.2. The County shall encourage the agencies responsible for flood control of storm drainage to coordinate the multiple use of flood control and drainage facilities with other public agencies.

PF-E.12. The County shall coordinate with the local agencies responsible for flood control or storm drainage to ensure that future drainage system discharges comply with applicable State and Federal pollutant discharge requirements.

PF-E.17. The County shall encourage the local agencies responsible for flood control or storm drainage retention-recharge basins located in soil strata strongly conducive to groundwater recharge to develop and operate those basins in such a way as to facilitate year-round groundwater recharge.

PF-G.1. The County shall ensure the provision of effective law enforcement services to unincorporated areas in the county.

PF-H.1. The County shall work cooperatively with local fire protection districts to ensure the provision of effective fire and emergency medical services to unincorporated areas within the county.

4.15.3 Potential Impacts

PUB 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 including fire protection, police protection, schools, parks, or other services?

(No Impact) The proposed project will not change the need for public services because it will not increase population in the area or create hazards requiring an on-going public service response. No changes in levels of school or park use are anticipated. There is a potential for construction-related accidents to require public emergency service personnel, but these are not likely to be frequent and hospital service levels would not be affected. Local vector control agencies will be involved in implementing measures to control outbreaks of mosquitoes and other pests but will be able to do so using existing capacity. Impacts will be less than significant.

Fire Protection The proposed project would not lead to any residential or commercial development or any changes in land use, and no additional services would be required from the FCFPD. There will be no impacts associated with fire protection.

Police Protection The proposed project would not lead to any residential or commercial development or any changes in land use, and no additional services would be required from the FCSO. There will be no impacts associated with police protection.

Schools The proposed project would not result in any new residential structures or developments or alter existing land uses. The proposed project would not result in an increase of population that would impact existing school facility service levels or require additional school facilities to be constructed. There will be no impacts to schools.

Parks The proposed project would not result in a population increase and would not increase the number of employees in the area. There would be no need for new or expanded parks or recreational facilities, and there will be no impact.

Other Public Facilities The proposed project would not lead to any population increases, and would not increase the need for libraries, senior care centers, community centers, or other services. The project would help to recharge groundwater supplies and lead to more reliable groundwater supplies within the project area. There will be no impacts to other public facilities.

4.16 RECREATION (REC)

	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?	☐	☐	☐	☒

4.16.1 Environmental Setting

The project area, as well as the vicinity around the project area, is comprised primarily of agricultural and rural land.

Within the project area, the main protected areas with recreational opportunities are the Kerman Ecological Reserve (ER) and the Alkali Sink ER, both of which are managed by the California Department of Fish and Wildlife and offer wildlife viewing. Hunting is also available at the Kerman ER on a seasonal basis. The nearby Mendota Wildlife Area (MWA) offers a variety of recreational opportunities such as fishing, hunting, and wildlife viewing. The majority of the MWA is located adjacent to the northwest boundary of the project area and the Alkali Sink ER. The only parks located within the project area are the Easton Caruthers Baseball Field Complex and the playground located at the Raisin City Elementary School, both within the boundaries of Raisin City. Bikeways have been identified by the Fresno County General Plan along several primary roads, including SR-180, SR-145, McMullin Grade, and Manning Avenue (Fresno County 2000, 2013). No hiking trails or scenic roadways are located within the project area.

Outside the project area, three small federal parcels associated with the Tranquility Land Retirement Demonstration Site are located approximately 4 miles to the west of the project area. The next closest protected federal lands are over ten miles away (GreenInfo Network 2022). City parks outside the project area can be found within San Joaquin (approximately 2 miles) to the west, Kerman (approximately 1 mile) and Fresno (approximately 6 miles) to the east, and Selma (approximately 13 miles) to the southeast. The nearest Fresno County recreational facility is Kearney Park situated between Kerman and Fresno. In addition, playgrounds are associated with several schools and municipal parks in populated areas outside the project area.

4.16.2 Regulatory Setting

4.16.2.1 Federal

There are no federal regulations relating to recreation that are applicable to the Project or the Project site.

4.16.2.2 State

There are no state regulations relating to recreation that are applicable to the Project or the Project site.

4.16.2.3 County and Regional

The Fresno County General Plan. The Plan includes goals and policies to enhance recreational opportunities by encouraging development of public and private recreation lands and requiring developers to help fund additional parks and recreation facilities when developing new housing projects (Fresno County 2000, 2021c).

Goal OS-H (Policies OS-H.1 – OS-H.5). To designate land for and promote the development and expansion of public and private recreational facilities to serve the needs of residents and visitors.

4.16.3 Potential Impacts

REC 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) The California Protected Areas Database (CPAD) is an inventory of all land in California that is protected in fee ownership primarily for open-space use. It includes everything from small urban parks to large national parks. Any recreational areas indicated by CPAD that fall within the project area, as described above, will be avoided by the project canal alignment (GreenInfo Network 2022). The proposed conveyance canals may cross existing and planned bikeways designated by the Fresno County General Plan along several primary roads (Fresno County 2000, 2013). These road crossings will be constructed by using jack-and-bore methods, which will avoid any traffic disruption, including bike traffic, and therefore there will be no impacts to the bikeways. There are no established hiking trails or scenic roadways passing through the project area (Fresno County 2000, 2013). The only local parks in the project area are within the boundaries of Raisin City, and all project features fall outside the Raisin City boundaries. Construction and operation of the proposed project does not include a recreational component. Flooded recharge basins may result in increased migratory bird use of the area, increasing opportunities for bird watching and hunting. The proposed project is not growth-inducing and would not increase the use or deterioration of any established recreational facilities. The project will not impact recreational features.

REC b): Would the proposed 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 proposed project does not include recreational features. The project, as planned, would not result in construction or expansion of recreational facilities that would attract visitors to the area. Although there is a potential for future recreational use, such as using dedicated recharge areas for wildlife viewing or hunting during wet years, this would not be expected to attract visitors from outside the regional vicinity. No additional visitors would be attracted to the area due to the proposed project, aside from workers during construction, and no expansion of existing recreational facilities would occur. The proposed project will have no impact on recreational resources, and no new recreational resources are planned that could have an adverse physical effect on the environment.

4.17 TRANSPORTATION AND CIRCULATION (TRA)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☒	☐	☐

4.17.1 Environmental Setting

The project area is accessed by numerous state highways, local paved and unpaved roadways, and served by railroads, airports, and mass transit (Figure 4-8). The main arterials through the region include SR-145, which runs north-south from Helm to Kerman, and SR-180, running east-west from Mendota to Kerman. SR-145 is a two-lane conventional highway designated as a Surface Transportation Assistance Act (STAA) Terminal Access Route, which allows for large trucks to operate on the Interstate and certain primary routes collectively called the National Network, for goods movement (Fresno County 2021a). SR-180 transitions from a two-lane to four-lane highway through the project area. The Fresno County General Plan regional circulation diagram identifies the roadways in the project area, including proposed freeways (SR-180), expressways (SR-145, McMullin Grade Rd., Manning Rd.) and arterials (American Ave., James Rd., and W. Kamm Ave.) in the project area (Fresno County 2000). The Level of Service for all roads within the project area is categorized as a “D,” which is defined as approaching unstable flow, where freedom to maneuver in the traffic stream is severely limited, and with average speeds over 46 mph (Fresno County 2000).

The southernmost east-west road is Conejo Rd. The easternmost north-south road is S. Brawley Ave. The westernmost north-south road is W. Whitesbridge Rd. The northernmost boundary is formed by the San Joaquin River. There are several other paved and two-lane collector roads in the vicinity, most of which serve agricultural transportation needs.

Average Annual Daily Traffic (AADT) counts provide the average daily number of vehicles passing by a particular intersection, calculated by taking the total count for the year and dividing by 365 days. There are several AADT count locations in the project area. AADT counts are typically taken for both directions at the count location, and in some cases, differentiating between cars and trucks. Table 4-14 shows the AADT for the number of cars (and trucks, when that value was available) passing through several count locations in the project area (California State Geoportal 2021). At each count location, the number of

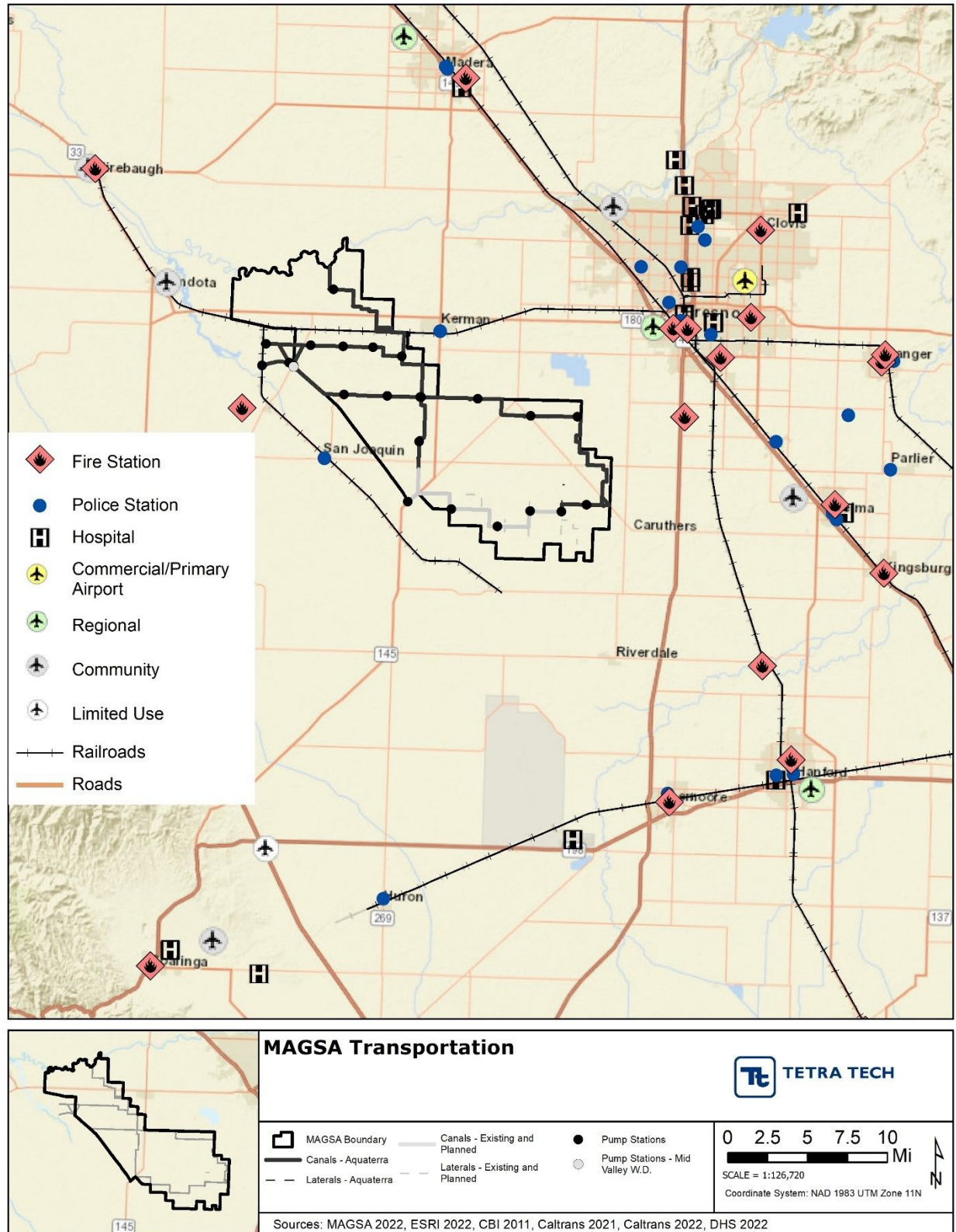


Figure 4-8: Transportation

vehicles passing in both directions is counted (called “ahead” and “back”). Many more passenger cars pass through the project area than trucks, but the greatest numbers of both are traveling along SR-180 and SR-145. Trucks counted include those with two to five axles.

Table 4-14: Average Annual Traffic Counts for 2019

Traffic Count Location	Vehicle AADT	Truck AADT
SR-180 at SR-145, Ahead	15,300	1,888
SR-180 at SR-145, Back	15,600	1,258
SR-180 at Panoche Rd, Ahead	7,500	NA
SR-180 at Panoche Rd, Back	7,400	NA
SR-180 at James Rd., Ahead	8,000	1,120
SR-180 at James Rd., Back	7,300	684
SR-145 at SR-180, Ahead	8,900	830
SR-145 at SR-180, Back	12,400	NA
SR-145 and American Ave, Ahead	6,600	NA
SR-145 and American Ave, Back	4,300	NA
SR-145 and McMullin Grade Rd., Ahead	2,200	NA
SR-145 and McMullin Grade Rd., Back	5,900	NA

Amtrak serves the region with one stop in the city of Fresno, but there are no passenger trains serving the project area (Amtrak 2022). An abandoned rail line runs through the project area from Raisin City to Kerman.

Fresno County Rural Transit Agency provides bus service within and to the project area (FCRTA 2022). The San Joaquin Intercity Transit line runs from San Joaquin to Tranquility and Kerman and reaches nearly to Mendota. The Westside Transit line provides bus service from Fresno to Kerman and Mendota via SR-180.

Fresno County’s General Plan Transportation and Circulation Element identifies SR-145 as a proposed rural bikeway that will be included in the updated Regional Bikeways Plan. Fresno County’s Regional Bicycle and Recreational Trails Master Plan identifies a proposed location for future development of a Class II Planned Rural Bikeway (Fresno County 2013). This bike lane would travel along Mc Mullin Grade Rd. south to Manning Ave, west to San Joaquin, and north to Tranquility and Mendota via Jefferson Ave and Santa Fe County Rd. This bike lane would be designated along an established street, separated from traffic by a 6-inch-wide stripe. The General Plan shows no existing or proposed formal pedestrian facilities or recreational trails in the project area (Fresno County 2000).

4.17.2 Regulatory Setting

4.17.2.1 Federal

Title 49, CFR, Sections 171-177 (49 CFR 171-177). Title 49 governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.

Title 49 CFR 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations. These regulations address safety considerations for the transport of goods, materials, and substances over public highways.

Title 49 CFR 397.9, the Hazardous Materials Transportation Act of 1974. This act 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.

4.17.2.2 State

The California Department of Transportation (CalTrans). Caltrans manages the operation of State Highways, including the freeways and State Routes passing through the Central Valley.

State of California Transportation Department Transportation Concept Reports. Each District of 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 project is within CalTrans District 6, and the TCRs for SR-145 and SR-180 identify how these highways will be developed and managed.

Agricultural Industries Transportation Services. Caltrans commissioned the Agricultural Industries Transportation Services (AITS) Needs Assessment and Pilot Program in 2001 to meet the transportation needs of the State's agricultural worker population and to improve transportation safety and affordability for agricultural workers. The program provides a transportation service for farm workers using certified vanpool vehicles and operators.

4.17.2.3 County and Regional

Fresno Council of Governments (FCOG) Regional Transportation Plan (2014). The FCOG has the responsibility for all regional transportation planning and programming activities within unincorporated Fresno County. The Regional Transportation Plan (RTP) identifies short-term improvements and long-term strategies for the highway and County's transportation network. Under the RTP, FCOG coordinates with transportation programs that serve commuters and agricultural workers, including AITS. The RTP also recognizes the importance of providing efficient distribution routes to active elements of the regional agricultural industry.

Fresno County Transportation and Circulation. The following objectives and policies from the Transportation and Circulation Element of the General Plan for Fresno County may be relevant for the Project:

Policy TR-A.2 Level of Service. The County shall plan and design its roadway system in a manner that strives to meet LOS D on urban roadways within the spheres of influence of the Cities of Fresno and Clovis and LOS C on all other roadways in the county.

TR-A.8 Development Impact Fees. The County shall assess fees on new development sufficient to cover the fair share portion of that development's impact on the local and regional transportation system.

4.17.3 Potential Impacts

TRA a): Would the project conflict with a program, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

(Less than Significant Impact) The proposed project will generate minor increases in truck and passenger vehicle traffic during construction. Up to 25 employee roundtrips and up to 30 truck trips per day are anticipated during construction. Such increases are well within the capacity of the area's roadways and will not affect LOS.

There will be minor increases in traffic during operations due to occasional vehicle use for periodic inspections and maintenance of pump stations and conveyance features. Vehicle trips will originate in Fresno, Kerman, Helm, or other local towns. The project will not result in permanent operational changes to any transportation facilities, including those for bicyclists, pedestrians, and transit riders. Temporary traffic disruptions may occur during construction or material deliveries, but such impacts will be minor and temporary.

There is expected to be virtually no change in the operating conditions of the roadways from current conditions, and the proposed project will not conflict with any applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of circulation systems. Any impact to local roadways will be less than significant.

TRA b): Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

(No Impact) “Vehicle miles traveled” refers to the amount and distance of automobile travel attributed to a project. A maximum of 25 workers would be required during construction of the proposed project. Transportation trips for these workers would be temporary over the approximately three-year construction period and would not result in any perceivable increase in vehicle miles traveled or an increase that would exceed a County threshold of significance. There would be no new regular vehicle trips associated with the proposed project other than locally generated trips for routine inspection and maintenance. The proposed project would be consistent with CEQA Guidelines Section 15064.3 subdivision (b), and no impact would occur.

TRA c): Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses?

(No Impact) The proposed project does not include the design or construction of any permanent roadway infrastructure that would cause a safety risk to vehicle operations. The proposed project will not alter the physical configuration of the existing roadway network serving the area, nor will it introduce new road uses or types of vehicles that are incompatible with existing uses of the road system. There would be no impact.

TRA d): Would the project result in inadequate emergency access?

(Less Than Significant Impact with Mitigation Incorporation) During the construction phase of the proposed project, slow-moving traffic in the area could affect emergency response times on roads in the project vicinity. Additionally, temporary traffic delays may be required to allow egress or ingress of haul trucks or construction equipment where proposed conveyance alignments cross beneath roadways. Staging areas would be located along existing roadways, either improved or unimproved, and would be readily accessible to emergency responders. An unimproved access road would be located alongside the conveyances. Potential impacts would be less than significant upon implementation of Mitigation Measure TRA-1, which requires that the construction contractor prepare a Traffic Safety Plan which will prioritize emergency access.

4.18 TRIBAL CULTURAL RESOURCES (TCR)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

4.18.1 Environmental Setting

The project area and surrounding region is within the ancestral land traditionally occupied by the Southern Valley Yokuts. The Yok-Utian language is divided into only two distinct subbranches: the Miwok-Costanoan and Yokuts (Golla 2007). An ethnographic review of tribal cultural resources was performed via the SSJVIC record search, NAHC SLF search, and review of available ethnographic documents.

This section relies on the information and findings presented in *Archaeological Resources Investigation for the Aquaterra Groundwater Bank Project* (Tetra Tech 2023). The archaeological report details the results of the archaeological resources study and includes: delineation of an Area of Potential Effects (APE); records searches conducted by the California Historical Resources Information System (CHRIS) Southern San Joaquin Valley Information Center (SSJVIC); Sacred Lands File (SLF) searches conducted by the California Native American Heritage Commission (NAHC); a review of historical topographic maps and aerial photographs; a general assessment of subsurface archaeological sensitivity (a separate geoarchaeological study was conducted for the project); and pedestrian field surveys.

In a letter dated February 27, 2023, the NAHC indicated that the SLF results were positive and provided a list of California Native American tribes to contact for information. On January 22, 2024, MAGSA sent coordination letters to tribes listed by the NAHC informing them of the proposed project and requesting information regarding known tribal resources in the area. The letters included figures depicting the location and features of the proposed project. Responses were received from four tribes. The Tuolumne Me-Wuk tribe and the Dunlap Band of Mono Indians had no comments. The Santa Rosa Rancheria Tachi Yokut Tribe and the Table Mountain Rancheria requested consultation with MAGSA. MAGSA is coordinating with the Rancherias regarding measures to prevent disturbance of tribal resources and curating any resources that are discovered during construction or operations.

4.18.2 Regulatory Setting

A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource may have a significant effect on the environment (PRC 21084.2). As specified in the PRC Section 21080.31, as amended by AB 52, a lead agency is required to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. Consultations must include discussing the type of environmental review necessary, the significance of tribal cultural resources, the significance of the project's impacts on the tribal cultural resources, and alternatives and mitigation measures recommended by the tribe (PRC 21080.3.1 (a) and 20184.3(b)(a)), and Government Code 65352.4).

Public Resource Code (PRC) section 21074 defines tribal resources as follows:

(a) "Tribal cultural resources" are either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources.

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 if it conforms with the criteria of subdivision (a).

14 California Code of Regulation 15120(d) Confidentiality

Section 15120(d) of the California Code of Regulations states that information and locational information regarding archaeological sites, sacred lands, or other information is confidential and is restricted from disclosure in public documents.

Also see California Health and Safety Code, Section 7052 and 7050.5 and California Public Resource Code, Section 5097 discussed in Section 6.5.2.

4.18.3 Potential Impacts

TCR) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

- a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)? and,**
- b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe?**

(Less Than Significant with Mitigation Incorporated) The SSJVIC record search identified three prehistoric archaeological sites (a lithic scatter, lithic/ceramic scatter, lithic scatter/bedrock milling feature, and lithic scatter/bedrock milling features/hearth), and five historic sites (refuse scatters, glass and ceramic shards, chert fragments). The prehistoric and historic sites are ineligible for the CRHR. Due to positive findings from the NAHC SLF search, MAGSA is coordinating with tribes to avoid impacts during construction and to ensure proper notification and protection in case of inadvertent discovery. Since the proposed project includes ground-disturbing activities, there remains the potential that indigenous archaeological resources could be encountered, including those that meet the definition of tribal cultural resources. If encountered, tribal cultural resources may be eligible for listing in the California Register or in a local register as defined in PRC Section 5020.1(k), or may be determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. Effects/impacts would be significant if construction or operations cause a substantial adverse change in the significance of a tribal cultural resource. Mitigation Measures CUL-1 and CUL-2 require worker training, construction monitoring, avoidance of resources, and treatment of inadvertent discoveries. Therefore, impacts to tribal cultural resources would be less than significant with mitigation incorporated.

4.19 UTILITIES AND SERVICE SYSTEMS (USS)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
a) Require or result in the construction of new or expanded water or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunication facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) 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?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

4.19.1 Environmental Setting

Electric transmission lines in the project area are owned and operated by Pacific Gas and Electric (PG&E) and include overhead single circuit 60kV and double circuit 230kV high-voltage transmission lines and the Kerman, Caruthers, and McMullin substations (PG&E 2022a). The transmission lines are suspended on large, steel towers that are mounted on concrete platforms in farm fields and run either north-south or west-east through the project area. PG&E's overhead electrical distribution service lines are dispersed throughout the project area delivering electricity for farming and associated settlement areas and businesses. The County of Fresno – Special District County Service Area (CSA) 43 provides street lighting and community park maintenance to unincorporated Raisin City. PG&E is also the natural gas service provider with transmission lines supplying local distribution lines and connecting to individual service lines throughout the project area (PG&E 2022b).

Telecommunication and internet services are available from various service providers depending on location within the project area. Water demand is met through groundwater extraction from the underground aquifer in the Kings subbasin. Pumped groundwater supplies homes, businesses, and most farming operations throughout the project area. CSA 43W provides water service accounts in Raisin City. Wastewater treatment in unincorporated, rural areas within the project area is accomplished through onsite septic systems. Wastewater treatment facilities near the project but beyond its boundary include the City of Kerman's treatment plant and the Fresno/Clovis Regional Wastewater Reclamation Facility. Non-recyclable and non-hazardous solid waste collected within the project area is taken to the American Avenue Landfill, owned and operated by Fresno County.

There is no designated underground stormwater collection infrastructure in the project area other than in Raisin City, which will not be affected by the proposed project. The project area has relatively little impervious surface area owing to the overwhelmingly rural setting and farming land use. Typically, stormwater runoff is directed into roadside ditches to percolate into the ground or may be directed into larger surface water detention basins and/or flowing surface water conveyances, such as the James Bypass, during larger precipitation events.

4.19.2 Regulatory Setting

4.19.2.1 Federal

Clean Water Act and National Pollutant Discharge Elimination System NPDES. As authorized by the CWA, the NPDES Permit Program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. In California, it is the responsibility RWQCBs 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 (California State Water Resources Control Board 2024). Fresno 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 SWPPP and the inclusion of any appropriate BMPs to control erosion and offsite transport of soils.

4.19.2.2 State

State Water Resources Control Board. 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 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 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 2786. 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). This act, 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.

Title 8, Section 1541 of the California Code of Regulations. This requires excavators to determine the approximate locations of subsurface installations, such as sewer, telephone, fuel, electric, and water lines (or any other subsurface installations that may reasonably be encountered during excavation work) prior to excavation.

California Government Code §4216 et seq. This law requires owners and operators of underground utilities to become members of and participate in a regional notification center. Underground Service Alert Northern California (USA North) covers Northern and Central California, including Fresno County. USA North receives planned excavation reports from public and private excavators and transmits that information to all participating members who may have underground facilities at the location of excavation. The USA North members mark or stake their facility, provide information, or give clearance to dig.

4.19.2.3 County and Regional

Fresno County General Plan. The following policies from the Fresno County General Plan are relevant for Utilities and Service Systems within the Project Area:

PF-J.1. The County shall encourage the provision of adequate gas and electric, communications, and telecommunications service and facilities to serve existing and future needs.

PF-J.2. The County shall work with local gas and electric utility companies to design and locate appropriate expansion of gas and electric systems while minimizing impacts to agriculture and minimizing noise, electromagnetic, visual, and other impacts on existing and future residents.

PF-J.3. The County shall require all new residential development along with new urban commercial and industrial development to underground utility lines onsite.

PF-J.4. The County shall require compliance with the Wireless Communications Guidelines for siting of communication towers in unincorporated areas of the County.

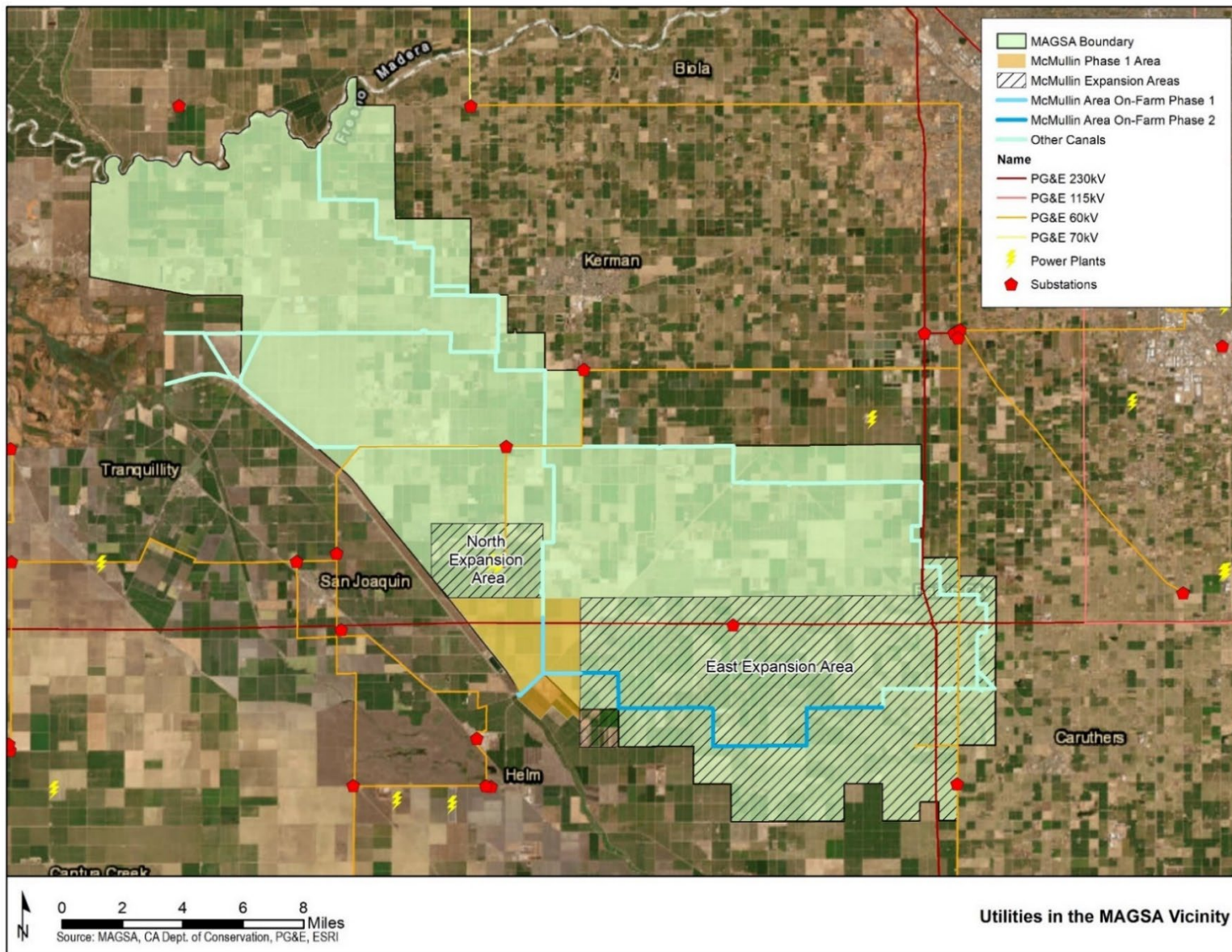


Figure 4-9: Utilities in the MAGSA Vicinity

4.19.3 Potential Impacts

USS a): Would the project require or result in the construction of new or expanded water or wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction of which could cause significant environmental effects?

(Less than Significant Impact) No new or expanded sewer hookups will be needed and no wastewater facilities are required for this project. Operations of the proposed project will not generate wastewater, and there will be no impacts.

The proposed project will add minor amounts of impervious surfaces with the construction of the diversion and lift pump stations. The amount of runoff from these impervious surfaces will be minimal and is not expected to increase flood flows or require new measures to detain stormwater runoff. Runoff from the pump station foundations in the interior of the area will be minimal and will be contained within the surrounding berms. Road crossings for the proposed conveyances will replace pavement during construction but are not anticipated to add impervious surface. There will be no other features that would affect stormwater drainage, and impacts will be less than significant.

The proposed project will result in construction of three diversion pump stations and 19 lift pump stations. These pump stations will be operated using a combination of electric, natural gas, and propane pumps. Approximately 82 percent of pumps will be electric, 11 percent will be natural gas, and 7 percent will be propane. The pump stations will require new associated natural gas, electrical, and control facilities with telecommunication networks to power and control their operation. In addition, it is estimated that approximately 90 electric recovery wells will be installed in various locations within recharge basin footprints. None of PG&E's transmission lines, towers, or platforms will be affected by construction or operations. Some pump station locations will require expansion of the overhead electrical distribution service lines to extend power from an existing PG&E distribution service system to the pump stations. Buried telecommunication services may also need to be extended from existing distribution points for controls integration. Environmental impacts associated with installation of new overhead electrical distribution lines and buried telecommunication lines where necessary will be minimal because utility poles have a very small footprint and underground conduits can be installed with minimal excavation and standard BMPs for erosion and dust control. Impacts associated with constructing new electrical, natural gas, and telecommunication utility infrastructure will be less than significant.

USS b): Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

(Less Than Significant Impact) Sufficient water supplies are available for construction of the proposed project. Operations of the proposed project will primarily require the water supplies involved in the bank deposits and withdrawals, and minor volumes for water quality sampling. The proposed project, recognized by Reclamation as a water bank, would contribute to aquifer storage through the required "leave behind", estimated to be approximately 10 percent of water bank deposits. The water bank will also enable bank partners to better manage their water supplies in nearby water management areas by reducing spillage losses. Spillage occurs when State and Federal water contractors have allocated water available in specific locations during wet seasons, but with insufficient storage capacity in the reservoir, they cannot be used for the intended purposes and instead must be released from the reservoir without being used. The project is not expected to result in an increased water demand for any purpose, including residential, commercial, agricultural, or industrial. It is expected to improve groundwater sustainability to facilitate continued long-term residential and agricultural use of water in the area. Since irrigation and municipal water supplies in MAGSA are inherently dependent on pumping groundwater from the aquifer, it is anticipated that the proposed project will be beneficial for the groundwater supply and will have a less than significant impact on the available water supply.

USS c): 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) The area of the project is not served by a centralized sewer or wastewater treatment provider, and instead relies primarily on septic treatment. Minimal amounts of wastewater will be generated during construction through normal construction processes and will be appropriately disposed of depending on its contents. Operation of the proposed project will not generate wastewater or sewage and is not expected to induce population growth in the area. The projected demand of the area will be unchanged from the current demand because of the project; therefore, there will be no impact associated with wastewater treatment capacity.

USS d): Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

(Less Than Significant Impact) Construction of the project will not generate substantial amounts of solid waste, other than minor amounts of waste, such as packaging materials, scrap wood or metals, waste concrete, and other standard materials generated during construction. Such waste is expected to total less than 1,000 cy, which is well within the capacity of the nearby American Avenue Landfill, which is expected to fill by 2031. Excavated soils will be distributed on adjacent fields, and no soil will be removed from the site or sent to solid waste disposal sites. Project operations will not generate solid waste, but maintenance activities will occasionally generate insignificant amounts of solid waste such as packaging. Therefore, impacts will be less than significant.

USS e): Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

(No Impact) Solid wastes generated during construction will be disposed of in accordance with all statutes and regulations related to solid waste. The construction contractor will prepare a Waste Management Plan and maintain a Waste Log prior to applying for a building permit from Fresno County. No solid waste will be generated during operations. There will be no impact.

4.20 WILDFIRE (WDF)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

4.20.1 Environmental Setting

The project area is comprised primarily of maintained and irrigated cropland, and wildfire risk is low. The Office of the State Fire Marshall has developed Fire Hazard Severity Zone Maps that designate local responsibility areas (LRAs), state responsibility areas (SRAs), and federal responsibility areas (FRAs). The project area is entirely within LRA zones. Most of the project area is located on agricultural lands that are LRA unzoned, but it also includes a few areas that are LRA moderate fire hazard severity zones. These moderate zones include non-agricultural areas such as the Kerman Ecological Reserve, the Alkali Sink Ecological Reserve, and parcels near the American Avenue Landfill. The project area does not contain any LRA high or LRA very high fire hazard severity zones (CAL FIRE 2007). Wildfires in Fresno County typically occur in the foothill and mountainous areas in the east and west ends of the county (Fresno County 2023), which fall under SRA and FRA zones (California Board of Forestry and Fire Protection 2022).

In addition to state regulations about fire management, regulations for emergency planning at the federal level and local levels are also relevant. At the federal level, Homeland Security Presidential Directive 5 initiated formation of the National Incident Management System, which guides all levels of government, nongovernmental organizations, and the private sector to work together to prevent, protect against,

mitigate, respond, and recover from incidents, including wildfire. Presidential Policy Directive 8 March 30, 2011, National Preparedness, is aimed at strengthening the security and resilience of the United States through systematic preparation for the threats that pose the greatest risk to the security of the nation, including acts of terrorism, cyber-attacks, pandemics, and catastrophic natural disasters.

At the county and regional level, the Fresno County Master Emergency Services Plan (Fresno County 2023) establishes a local emergency management system, completes a comprehensive emergency management plan, and specifies policies, roles, resources, and activities necessary to manage an emergency among other purposes. The Fresno County Multi-Jurisdictional Hazard Mitigation Plan (Amec Foster Wheeler 2018) addresses hazards and risks in Fresno County. Based on the risk assessment, a hazard mitigation planning committee identified goals and objectives for reducing the county's vulnerability to hazards. To meet identified goals and objectives, the plan recommends several mitigation actions, including actions specific to each participating jurisdiction. This plan has been formally adopted by the County and the participating jurisdictions and will be updated at minimum every five years.

4.20.2 Regulatory Setting

4.20.2.1 Federal

Homeland Security Presidential Directive 5, National Incident Management System. This directive initiated formation of the National Incident Management System, which guides all levels of government, nongovernmental organizations, and the private sector to work together to prevent, protect against, mitigate, respond, and recover from incidents, including wildfire.

Presidential Policy Directive 8 March 30, 2011, National Preparedness. This policy directive is aimed at strengthening the security and resilience of the United States through systematic preparation for the threats that pose the greatest risk to the security of the nation, including acts of terrorism, cyber-attacks, pandemics, and catastrophic natural disasters.

4.20.2.2 State

California Government Code Section 51179. This section states “a local agency shall designate, by ordinance, very high fire hazard severity zones in its jurisdiction within 120 days of receiving recommendations from the director pursuant to subdivisions (b) and (c) of Section 51178.” The Office of the State Fire Marshall has developed local responsibility area and state responsibility area Fire Hazard Severity Zone Maps.

4.20.2.3 County and Regional

The Fresno County Master Emergency Services Plan (Fresno County 2017) establishes a local emergency management system; completes a comprehensive emergency management plan; and specifies policies, roles, resources, and activities necessary to manage an emergency among other purposes.

The Fresno County Multi-Jurisdictional Hazard Mitigation Plan (Amec Foster Wheeler 2018) addresses hazards and risks in Fresno County. Based on the risk assessment, a hazard mitigation planning committee identified goals and objectives for reducing the county's vulnerability to hazards. To meet identified goals and objectives, the plan recommends several mitigation actions, including actions specific to each participating jurisdiction. This plan has been formally adopted by the County and the participating jurisdictions and will be updated at minimum every five years.

4.20.3 Potential Impacts

WDF- all

(No Impacts) The proposed project is not located in or near state responsibility areas or lands classified as very high fire hazard severity zones, therefore none of the criteria are applicable. No impacts to wildfire risk, response, management, or evacuation procedures would result from the proposed project.

5 MANDATORY FINDINGS OF SIGNIFICANCE (MFS)

MFS (a): Does the project have the potential to substantially 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, substantially 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 With Mitigation Incorporated) The analysis presented in this Initial Study/Mitigated Negative Declaration results in a determination that the proposed project will have a less than significant impact to Federally protected wetlands or other sensitive natural communities and no impact to habitat conservation plans or local policies or ordinances protecting biological resources. The analysis finds that the proposed 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 proposed project.

MFS (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 With Mitigation) The project’s impacts would not be cumulatively considerable. Construction impacts would be temporary and mitigable, and operations impacts would be either beneficial or less than significant; therefore, any potential cumulative impacts would be less than significant. No other projects are currently proposed in the vicinity of the project that, when combined with the effects of the proposal, would result in significant impacts. The project would have beneficial impacts to groundwater levels and would reduce downstream flood risk. Additionally, with incorporation of mitigation measures, any adverse impacts from the project would be less than significant.

MFS (c): Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

(Less Than Significant With Mitigation) As identified and described in this Initial Study, the project would have potentially significant impacts on air quality, biological resources, cultural and tribal resources, geology and soils, hydrology and water quality, hazards and hazardous materials, and traffic and transportation that would be mitigated from potentially significant to less than significant. The project would have less than significant impacts on aesthetics, greenhouse gases, noise, utilities and service systems, and public services. The project would have no impact on population and housing, recreation, agriculture and forest resources, land use and planning, and mineral and energy resources. As a result, the proposed project would have no environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

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7 ACRONYMS

AADT	Average Annual Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
AB	Assembly Bill
AEP	Annual Exceedance Probability
AF	acre-feet
AFD	acre-feet per day
AFY	acre-feet per year
AITS	Agricultural Industries Transportation Services
AJD	Approved Jurisdictional Determination
ALUCP	Airport Land Use Compatibility Plan
APE	Area of Potential Effects
API	American Petroleum Institute
ARD	Aquatic Resource Determination
BAT	Best Available Technology
BCT	Best Conventional Technology
BE	Biological Evaluation
bgs	Below Ground Surface
BMP	Best Management Practice
BOD	Biochemical Oxygen Demand
BPS	Best Performance Standards
CAA	Clean Air Act
CAFO	Confined Animal Feeding Operation
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCAP	Climate Change Action Plan
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CDLs	Clandestine Drug Labs
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations

CFS	cubic feet per second
CGP	Construction General Permit
CHRIS	California Historical Resources Information System
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO2	Carbon Dioxide
CoC	Constituents of Concern
CPAD	California Protected Areas Database
CRA	California Resources Agency
CRHR	California Register of Historic Places
CRHR	California Register of Historical Resources
CSA	County Service Area
CVP	Central Valley Project
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
cy	Cubic Yard
dB	Decibel
dBA	A-weighted Decibel
DBCP	Dibromo-3-chloropropane
DMC	Delta Mendota Canal
DMR	California Division of Mine Reclamation
DPR	California Department of Pesticide Regulation (DPR)
DTSC	Department of Toxic Substances Control
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EPA	Environmental Protection Agency
ER	Ecological Reserve
FAA	Federal Aviation Administration
FCFPD	Fresno County Fire Protection Districts
FCOG	Fresno Council of Governments
FCSO	Fresno County Sheriff's Office
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FFCP	Flood Flow Capture Plan
FIRM	Flood Insurance Rate Maps
FKR	Fresno Kangaroo Rat
FRAs	Federal Responsibility Areas
ft	feet
FTA	Federal Transit Administration

GAMA	Groundwater Ambient Monitoring and Assessment Program
GAR	Groundwater Assessment Report
GDE	Groundwater Dependent Ecosystem
GHG	Greenhouse Gas
GPM	Gallons per Minute
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWh	Gigawatt hours
GWQPS	Groundwater Quality Protection Strategy
HCD	California Department of Housing and Community Development
HCP	Habitat Conservation Plan
HMTA	Hazardous Materials Transportation Act
HSC	California Health & Safety Code
HSG	Hydrologic Soils Group
HWMP	Hazardous Waste Management Plan
ILRP	Irrigated Lands Regulatory Program
IPaC	Information for Planning and Consultation
IRWMP	Integrated Regional Water Management Plan
KBWA	Kings Basin Water Authority
KRWA	Kings River Water Association
LOS	Level of Service
LQG	Large Quantity Generator
LRA	Local Responsibility Area
LUST	Leaking Underground Storage Tank
MAGSA	McMullin Area Groundwater Sustainability Agency
MBTA	Migratory Bird Treaty Act
MCLs	Maximum Contaminant Levels
MLC	Mineral Land Classification
MM	Mitigation Measures
MRZ	Mineral Resource Zone
NAHC	Native American Heritage Commission
NEHRP	National Earthquake Hazards Reduction Program
NFPA	The National Fire Protection Association
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act
NRCS	Natural Resources Conservation Service

NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PG&E	Pacific Gas and Electric
PPV	Peak Particle Velocity
PRC	Public Resources Code
PRP	California Department of Food and Agriculture Pesticide Regulation Program
RCRA	Resource Conservation and Recovery Act
RMS	Root Mean Square
ROG	Reactive Organic Gases
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAGBI	Soil Agricultural Groundwater Banking Index
SB	State Bill
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SJKF	San Joaquin Kit Fox
SJR	San Joaquin River
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLF	Sacred Lands File
SLR	San Luis Reservoir
SMARA	Surface Mining and Reclamation Act
SMCL	Secondary Drinking Water Standard
SPRP	Spill Prevention and Response Plan
SPRP	Spill Prevention and Response Plan
SQG	Small Quantity Generator
SRAs	State Responsibility Areas
SSJVIC	Southern San Joaquin Valley Information Center
SSURGO	Soil Survey Geographic Database
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
SWRCB	State Water Resources Control Board
TCP	Trichloropropane
TCR	Transportation Concept Report
TDS	Total Dissolved Solids
ug/L	Micrograms per liter
US	United States
USACE	United States Army Corps of Engineers

USC	United States Code
USCS	Universal Soil Classification System
USDOT	U.S. Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
USTs	Underground Storage Tanks
VDE	Visible Dust Emissions
WDRs	Waste Discharge Requirements
WQCP	Water Quality Control Plan
WWTF	Wastewater Treatment Facility

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