HELIX Environmental Planning

Consolidation of South Kern and Old River Mutual Water Companies into the City of Bakersfield Water System

AR 6060 Prop 1 Project

Public Review Draft
Initial Study/Mitigated Negative Declaration

October 2024 | Project No. 02632.00014.001

Prepared for:

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
APE	Area of Potential Effect
bcf	billion cubic feet
BMP	best management practices
BPS	best performance standards
bgs	below ground surface
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH_4	methane
CGP	Construction General Permit
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historic Places
CVRWQCB	Central Valley Regional Water Quality Control Board
dB	decibel
dBA	A-weighted decibel
DOC	California Department of Conservation
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EO	executive order
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FGC	Fish and Game Code
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbons
Hz	hertz

ACRONYMS AND ABBREVIATIONS (cont.)

IPCC	Intergovernmental Panel on Climate Change
KCFD	Kern County Fire Department
KCSO	Kern County Sheriff's Office
KDWD	Kern Delta Water District
KRGSA	Kern River Groundwater Sustainability Agency
L_{EQ}	hourly sound level
L_{MAX}	maximum noise level
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
µg/L	micrograms per liter
MLD	most likely descendant
MT	metric tons
MWC	Mutual Water Company
NAHC	Native American Heritage Commission
NAAQS	National Ambient Air Quality Standards
NO_X	nitrogen oxides
N_2O	nitrous oxide
NRCS	National Resources Conservation Service
NRHP	National Register of Historic Places
NPDES	National Pollutant Discharge Elimination System
NSLU	Noise-sensitive land use
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PFC	perfluorocarbons
PM_{10}	particulate matter 10 microns or less in diameter
$PM_{2.5}$	particulate matter 2.5 microns or less in diameter
PPV	peak particle velocity
PRC	Public Resources Code
RCNM	roadway construction noise model
ROG	reactive organic gas
ROW	right-of-way
SF_6	sulfur hexafluoride
SHPO	State Historic Preservation Officer
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District

ACRONYMS AND ABBREVIATIONS (cont.)

SLF	Sacred Lands File
SO_2	sulfur dioxide
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCP	trichloropropane
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled
VOC	volatile organic compound

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1.0 INTRODUCTION

1.1 INITIAL STUDY INFORMATION SHEET

1.	Project title:	Consolidation of South Kern and Old River Mutual Water Companies into the City of Bakersfield Water System Project
2.	Lead agency name and address:	City of Bakersfield 1000 Buena Vista Rd. Bakersfield, CA 93311
3.	Contact person and phone number:	Kristina Budak, P.E. Water Director City of Bakersfield (661) 326-3715
4.	Project location:	Along Old River Road between McCutchen Road and State Route (SR)-119, as well as in the community of Old River located southeast of the intersection of SR-119 and Old River Road
5.	General plan designation:	Low-density residential; resource-intensive agricultural; general commercial; estate residential; heavy commercial
6.	Zoning:	Residential (R-1); Planned Unit Development (P.U.D.); Exclusive Agriculture (A); Highway Commercial (CH); General Commercial (C-2); Medium Density Residential (R-2)

7. Description of project:

Old River Mutual Water Company (MWC) and South Kern MWC provide water service to residential and commercial customers located in the community of Old River in unincorporated Kern County. Each MWC operates using a single well, and both wells produce water that exceeds allowable levels of uranium. Therefore, the proposed project includes the abandonment of the two wells and the extension of the City of Bakersfield's water system to consolidate both MWCs into the City of Bakersfield's water system.

The proposed project would involve the construction of approximately 6,000 linear feet of a new 10-inch water main, 1,600 linear feet of 8-inch lateral pipelines, and 29 household connections. Three fire hydrants would also be installed, and two wells would be abandoned as part of the project. The new 16-inch water main would be located within the disturbed portions of Old River Road and SR-119. The proposed 8-inch lateral pipelines and household connections would be located within disturbed portions of Par Street, Beam Street, and front yards of existing residences.

8. Surrounding land uses and setting:

The proposed project is located partially within the City of Bakersfield city limits and partially within unincorporated Kern County. The land adjacent to the proposed project to the west of Old River Road is within the Bakersfield city limits. The land uses in this area are primarily agricultural and residential, with some commercial uses near the intersection of Old River Road and SR-119. The land to the east of Old River Road and to the south of SR-119, including the community of Old River, is located in unincorporated Kern County, and the land uses are primarily agricultural, with some commercial uses near the intersection of SR-119 and Old River Road. Land uses in the community of Old River are primarily residential, with some commercial uses along SR-119. Land surrounding the community of Old River to the north, west, south, and east is primarily used for agricultural purposes, with some commercial uses to the north directly across SR-119. The character of the community and surrounding areas is rural.

9. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

- State Water Resource Control Board (SWRCB)
- California Air Resources Board (CARB)
- California Department of Fish and Wildlife (CDFW)
- California Department of Public Health
- Native American Heritage Commission (NAHC)
- Office of Historic Preservation
- Kern County
- Kern River Groundwater Sustainability Agency (KRGSA)
- Kern Delta Water District

10. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

On August 1, 2024, letters inviting tribes to consult under Assembly Bill (AB) 52 were sent to the following 15tribes: Big Pine Paiute Tribe of Owens Valley, Chumash Council of Bakersfield, Coastal Band of the Chumash Nation, Fernandeño Tataviam Band of Mission Indians, Kern Valley Indian Community, Kitanemuk & Yowlumne Teion Indians, San Fernando Band of Mission Indians, San Manuel, Band of Mission Indians, Santa Rosa Rancheria Tachi Yokut Tribe, Teion Indian Tribe, Tubatulabals of Kern County, Tule River Indian Tribe, Wuksache Indian Tribe/Eshom Valley Band, and the yak tityu tityu yak tiłhini Northern Chumash Tribe. As of the date of this report, two responses from tribes have been received, neither of which requested consultation. No additional responses or requests for consultation have been received.

2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The proposed project is located in Kern County southwest of the City of Bakersfield (Figure 1, *Regional Location*). Old River MWC currently serves an approximately 10.7-acre area at the southeast corner of Old River Road and SR-119 (Taft Highway). South Kern MWC serves an approximately 9.7-acre area east of Old River Road and immediately south of the Old River MWC service area (Figure 2, *Mutual Water Company Site Locations*). Both service areas are located in unincorporated Kern County, just outside of Bakersfield city limits.

2.2 PROJECT BACKGROUND

Old River MWC and South Kern MWC currently provide water service to residential and commercial customers located in the community of Old River in unincorporated Kern County. Each MWC operates using a single well located within their respective service areas, which provides water to adjacent parcels and nearby customers.

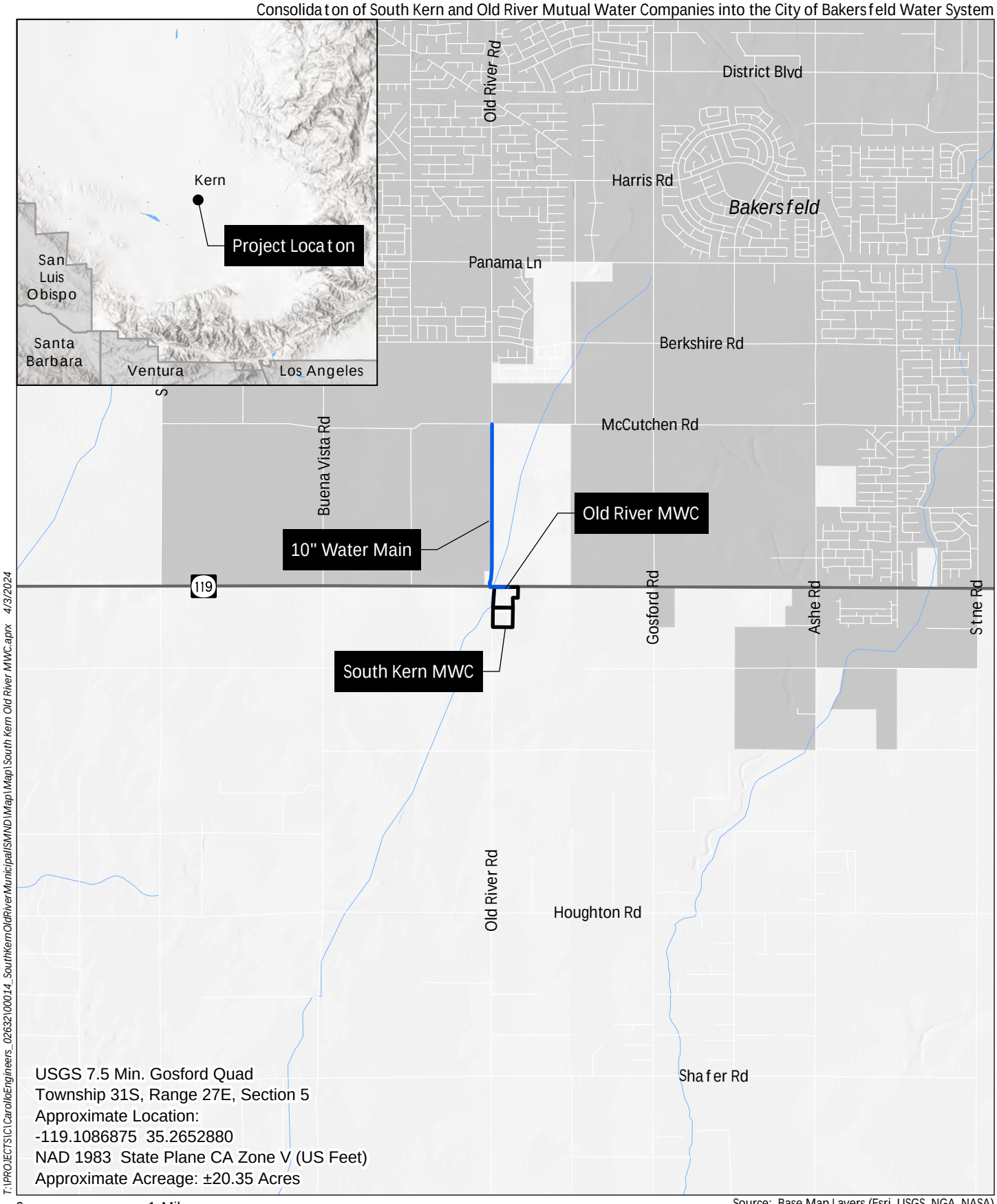
Old River MWC provides water to 46 residents via 14 connections in its 10.7-acre service area. Water is provided by a single well, located within the service area. The Old River MWC well was constructed in 1962 and has a ten-inch diameter steel casing perforated from 189 to 291 feet below ground surface (bgs). Water delivered by the Old River MWC system contains uranium levels that exceed the maximum contaminant level (MCL) of 30 micrograms per liter (µg/L) established by State and federal regulations. Water from this well also exceeds the 1, 2, 3-trichloropropane (TCP) MCL of 0.005 µg/L. The Old River MWC well lacks source reliability and storage capacity to serve the customers. The MWC also lacks technical, managerial, and financial capacity.

South Kern MWC provides water to 32 residents via 15 service connections in its 9.7-acre service area. Water is provided by a single well in the northeast corner of the service area. The South Kern MWC well was constructed in 1959 and has a ten-inch diameter steel casing perforated from 230 to 337 feet bgs. The well currently produces water that exceeds the uranium MCL of 30 µg/L. Water from this well also exceeds the 1, 2, 3- TCP MCL of 0.005 µg/L. The South Kern MWC well also lacks source reliability and storage capacity to serve the customers. The MWC also lacks technical, managerial, and financial capacity.

The proposed project would abandon the Old River MWC well and the South Kern MWC well and extend the City of Bakersfield's water system to serve the areas previously served by these two MWCs, thereby consolidating both MWCs into the City of Bakersfield's water system. Based on water supply information provided by the City and predicted MWC demands, the City has sufficient capacity to service the MWCs.

2.3 PROJECT COMPONENTS

Old River MWC and South Kern MWC provide water service to residential and commercial customers. Each MWC operates using a single well, and both wells produce water that exceeds allowable levels of uranium and 1, 2, 3-TCP. Therefore, the proposed project would abandon the two wells and extend the City of Bakersfield's water system to consolidate both MWCs into the City of Bakersfield's water system.



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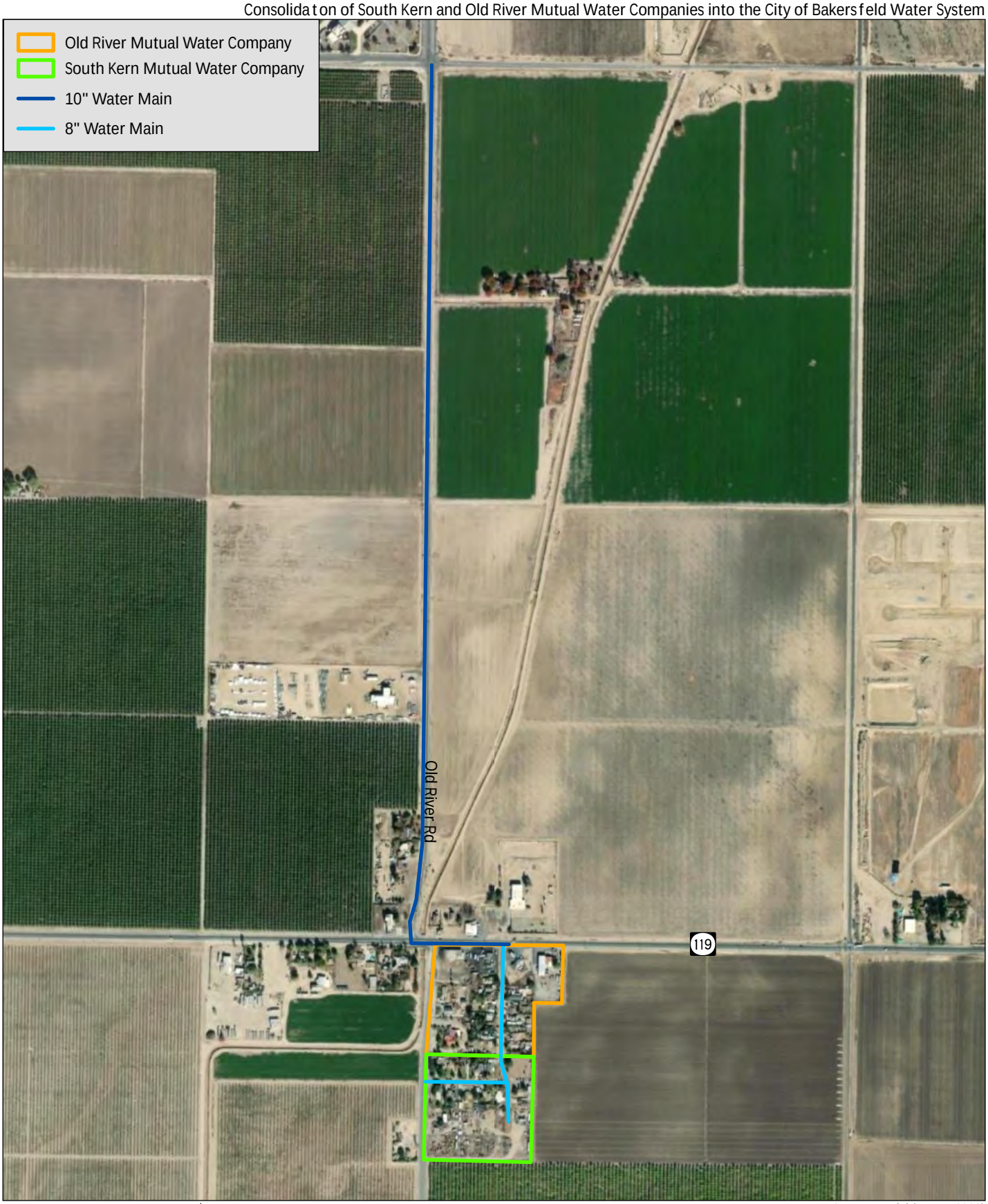
Site and Vicinity Map

Figure 1



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Source: Aerial (Maxar, 2022)

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Project Location and Mutual Water Company Site Locations

Figure 2

To extend service from the City of Bakersfield's water system to the areas currently served by Old River MWC and South Kern MWC, the proposed project would construct approximately 6,000 linear feet of new 10-inch water main, 1,600 linear feet of 8-inch lateral pipelines with connections to 29 households. Three fire hydrants would also be installed for use in case of emergency. The point of connection to the City of Bakersfield's water system would be the existing 16-inch diameter water main at McCutchen Road and Old River Road (Figure 3, *Site Plan*). Once the connection to the City of Bakersfield water system is complete, the Old River MWC and the South Kern MWC wells would be abandoned and no longer provide water to the community.

2.4 CONSTRUCTION EQUIPMENT AND SCHEDULE

Project construction is anticipated to begin as early as April 2026 and continue for approximately nine months. Construction of the pipeline would take place within disturbed portions of Old River Road, SR-119, Par Street, and Beam Street. Pipeline trench depth is expected to be between four and ten feet, with a total excavation width of five feet. It is anticipated that construction of the pipeline would proceed at a rate of approximately 200 linear feet per day.

During construction, approximately 4,000 cubic yards of soil would be excavated and backfilled once the pipe has been installed. An excavator, trencher, and pipe layer would be used to create a trench and lay pipe within it, as well as trench shoring equipment to keep the trench open while work is being performed. A steel auger would be used to cut through soil as pipe is advanced using trenchless installation for portions of the pipe that would be installed under roads and culverts. Once pipe installation is completed, soil would be backfilled, and a compactor would be used to compact the soil above the pipe. A short portion of the 10-inch pipeline would be installed underneath an existing irrigation canal/culvert using trenchless tunneling and installation of pipe commonly known as "jack and bore".

In accordance with the City of Bakersfield and Kern County noise ordinances and to minimize disruptions to the local community, construction and equipment maintenance would be limited to between 6:00 a.m. and 9:00 p.m. on weekdays and between 8:00 a.m. and 9:00 p.m. for any work taking place on weekends.

2.5 REQUIRED PERMITS AND APPROVALS

A listing and brief description of the permits and approvals required to implement the proposed project are provided below.

City of Bakersfield

- **Consideration of the Environmental Document:** The City of Bakersfield will act as the Lead Agency as defined by California Environmental Quality Act (CEQA) and will have authority to determine if the environmental document is adequate under CEQA and State CEQA Guidelines.

- **Project Approval:** The City of Bakersfield will consider approval of the project and entitlements described above.

Agencies

- **Kern County:** The CEQA environmental document will be posted with Kern County Clerk and State Clearinghouse.

- **Central Valley Regional Water Quality Control Board (CVRWQCB):** The State Water Resources Control Board, Division of Water Quality, requires that a Construction General Permit be obtained for projects that disturb more than 1 acre of soil. Typical conditions issued with such a permit include the submittal of and adherence to a Stormwater Pollution Prevention Plan (SWPPP), as well as prohibitions on the release of oils, grease, or other hazardous materials during construction. The project applicant and/or construction contractor would be required to file a Notice of Intent with the CVRWQCB.

- **California Department of Transportation (Caltrans):** An encroachment permit will be required for work performed within the Caltrans rights-of-way.

- **Kern Delta Water District (KDWD):** An encroachment permit or easement may be required to have the 10-inch line under their canal/within their rights-of-way.

- **Kern River Groundwater Sustainability Agency (KRGSA):** Coordination may be needed with KRGSA as the project is located within KRGSA's boundaries.

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Source: Aerial (Maxar, 2022)

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Site Plan

Figure 3

3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

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

3.1 DETERMINATION

On the basis of this initial evaluation:

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☒	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect I) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
☐	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date

Printed Name

For

4.0 ENVIRONMENTAL INITIAL STUDY CHECKLIST

The lead agency has defined the column headings in the environmental checklist as follows:

A. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

B. "Less Than Significant with Mitigation Incorporated" applies where the inclusion of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." All mitigation measures are described, including a brief explanation of how the measures reduce the effect to a less than significant level. Mitigation measures from earlier analyses may be cross-referenced.

C. "Less Than Significant Impact" applies where the project does not create an impact that exceeds a stated significance threshold.

D. "No Impact" applies where a project does not create an impact in that category. "No Impact" answers do not require an explanation if they are adequately supported by the information sources cited by the lead agency which show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project specific screening analysis).

The explanation of each issue identifies the significance criteria or threshold used to evaluate each question; and the mitigation measure identified, if any, to reduce the impact to less than significance. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration [CEQA Guidelines Section 15063(c)(3)(D)]. Where appropriate, the discussion identifies the following:

a) Earlier Analyses Used. Identifies where earlier analyses are available for review.

b) Impacts Adequately Addressed. Identifies which effects from the checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and states whether such effects were addressed by mitigation measures based on the earlier analysis.

c) Mitigation Measures. For effects that are "Less Than Significant with Mitigation Incorporated," describes the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

I. AESTHETICS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, 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)	Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). 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?	☐	☐	☒	☐

Environmental Setting

The proposed project is located in unincorporated Kern County immediately south of the city limits of Bakersfield. There are no designated scenic vistas within the City of Bakersfield or in the vicinity of the proposed project. Kern County has three designated scenic highways within the County, but these scenic highways are not located in the vicinity of the project (County 2009). The closest scenic routes in the County are located approximately 70 miles southeast of the project site. The region surrounding the project site is visually characterized by agricultural and rural residential land as well as SR-119. The landform in the area is naturally flat, but parts of it have been leveled for agricultural production.

Impact Analysis

a) Have a substantial adverse effect on a scenic vista?

No Impact. The proposed project is located immediately south of the Bakersfield city limits along Old River Road and SR-119. The existing visual environment in the area adjacent to the proposed project is single family residences and agricultural land. The area is not regarded or designated within the Metropolitan Bakersfield General Plan or the Kern County General Plan as visually important or "scenic." During construction, equipment would be visible in the project area but would be located there temporarily and removed upon completion of construction. The proposed project would install water infrastructure, which would be located entirely underground after construction activities are complete. Therefore, no permanent changes to scenic vistas would occur due to the proposed project. No impact would occur.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The only state designated scenic highway in Kern County is from SR-58 near Mojave to SR-395 near Little Lake (Caltrans 2024). The Kern County General Plan describes three scenic highways, which includes SR-14 and SR-395, SR-58 between Mojave and Boron, and five miles of SR-41 in northwestern Kern County. All scenic highways are over 70 miles from the proposed project, and the proposed project would not be visible from any of these highways. As discussed above under question a), permanent project components would be located underground and construction activities that would occur above ground would be temporary in nature. Thus, the proposed project would not result in damage to scenic resources in a state scenic highway, and no impact would occur.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). 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. Public Resources Code 21071 defines the term “urbanized area” for the purposes of CEQA to mean an incorporated city that has a population of at least 100,000 persons or has a population of less than 100,000 persons if the population of that city and not more than two contiguous incorporated cities combined equals at least 100,000 persons. U.S. Census Bureau data from 2020 indicates that the City of Bakersfield has a population of 403,455 persons (U.S. Census Bureau 2024). The project site is located immediately south of the Bakersfield city limits (an urbanized area) and therefore, is evaluated relative to applicable zoning and other regulations governing scenic quality.

Following construction, the proposed project would operate entirely underground and would not be visible to the public nor subject to regulations that govern visual character. The only visible aspect of the proposed project during operation would be three fire hydrants along Par Street, which would be consistent with the residential character of the neighborhood. While installation equipment may be visible during construction, any disruption to the visual character of the area would be temporary in nature. Impacts would be less than significant.

d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Less Than Significant Impact. In accordance with the City of Bakersfield and Kern County noise ordinances, construction and maintenance activities for the proposed project will be limited to between the hours of 6:00 a.m. and 9:00 p.m. on weekdays and between 8:00 a.m. and 9:00 p.m. for any work taking place on weekends. Since construction would primarily occur during daylight hours and no major light sources would be required for project operation, no permanent new sources of light would be introduced by the proposed project. Once operational, project components would be located underground and would not be a source of light or glare. Impacts would be less than significant.

II. AGRICULTURE AND FORESTRY RESOURCES

		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 non-agricultural use?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non- forest use?	☐	☐	☐	☒

Environmental Setting

According to the California Department of Conservation (DOC) Important Farmland Mapper, the project site is mapped as Urban and Built-Up Land (DOC 2024a). The proposed project consists of the installation of a water pipe along Old River Road and into the community of Old River. While there is agricultural land on both sides of Old River Road, installation of the proposed project would take place within the existing road right-of-way (ROW) and would not disturb the adjacent agricultural areas. None of the land adjacent to the project site is under a Williamson Act contract.

Impact Analysis

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

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

No Impact. The project site consists of existing road ROW and land developed for residential and commercial uses. According to the California Important Farmland Finder, land surrounding the proposed project site is designated as Urban and Built-up Land (DOC 2024). While land to the east of Old River

Road is zoned for agricultural use, none of the areas adjacent to the project site are under Williamson Act contracts. The proposed project would be constructed in existing road ROW and would not disturb adjacent agricultural areas. The proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to a non-agricultural use. No impact would occur for questions a) and b).

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

No Impact. The project site consists of developed roadways and residential and commercial properties, which are not zoned for or used as forest land, timberland, or timberland zoned Timberland Production. These uses are not present, and no rezoning would be required. Therefore, no impact would occur.

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

No Impact. The project site consists of developed roadways and properties, which are not used as forest land, timberland, or timberland zoned Timberland Production. Therefore, the proposed project would not result in the conversion of forest land to a non-forest use. No impact would occur.

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?

No Impact. As discussed under questions a) through d) above, the project site does not contain agricultural or forest land uses. The proposed project would not result in conversion of these uses, and no impact would occur.

III. AIR QUALITY

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. 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 non-attainment under an applicable federal or state 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?	☐	☐	☒	☐

The discussion below is based on an Air Quality and Greenhouse Gas (GHG) Emissions Letter Report prepared by HELIX Environmental Planning, Inc. and attached to this Initial Study as Appendix A.

Environmental Setting

The proposed project is located in unincorporated Kern County, which lies within the San Joaquin Valley Air Basin (SJVAB). Air quality in the SJVAB is regulated by the U.S. Environmental Protection Agency (USEPA) at the federal level, by the California Air Resources Board (CARB) at the State level, and by the San Joaquin Valley Air Pollution Control District (SJVAPCD) at the regional level.

The SJVAB comprises all or part of eight counties: San Joaquin, Stanislaus, Fresno, Merced, Madera, Kings, Tulare, and Kern. The distinctive climate of the SJVAB is determined by its terrain and geographic location. The SJVAB is in the southern half of California's Central Valley and is 250 miles long and averages 35 miles wide. The SJVAB is bounded by the Sierra Nevada Mountains to the east, the Coast Ranges to the west, the Tehachapi Mountains to the south, and is open to the Sacramento Valley and San Francisco Bay Area to the north.

The SJVAB is in a Mediterranean climate zone which is characterized by typically hot and dry summers and sparse rainfall mainly during the winter. Especially in summer, winds in the SJVAB most frequently blow from the northwesterly direction. The region's topographic features restrict air movement and channel the air mass towards the southeastern end of the basin. A secondary but significant summer wind pattern is from the southeasterly direction and can be associated with nighttime drainage winds from the Sierra Nevada Mountains, and prefrontal conditions. Many days in the winter are marked by stagnation events where winds are very weak. Transport of pollutants during winter can be very limited. The vertical dispersion of air pollutants in the SJVAB can be limited by persistent temperature inversions. Temperature inversions that occur on the summer days are usually encountered 2,000 to

2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor. The mountains surrounding the basin are mostly above the typical summer height of inversion layers, restricting dispersion of pollutants (SJVAPCD 2015).

Solar radiation and temperature are particularly important in the chemistry of ozone formation. The SJVAB averages over 260 sunny days per year. Generally, the higher the temperature, the more ozone formed, since reaction rates increase with temperature. From 1937 through 2016 annual average maximum daily temperature as measured at the Bakersfield Airport climatic station, approximately 7 miles northeast of the project site, was 77.8 degrees Fahrenheit (°F). The highest monthly average maximum daily temperature (98.6°F) occurs in July, and the lowest monthly average minimum daily temperature (38.5°F) occurs in December and January. The average annual precipitation is approximately 6.2 inches (Western Regional Climate Center 2016).

Regulatory Setting

Criteria Pollutants

Criteria pollutants are defined and regulated by State and federal law as a risk to the health and welfare of the public and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources, including carbon monoxide (CO); reactive organic gases ([ROGs] also known as volatile organic compounds [VOCs]); [1] nitrogen oxides (NO_X); sulfur dioxide (SO_2); coarse particulate matter (PM_{10}); fine particulate matter ($PM_{2.5}$); and lead. Of these primary pollutants, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead are criteria pollutants. ROGs and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. The principal secondary criteria pollutants are ozone and nitrogen dioxide (NO_2). In addition to being primary pollutants, PM_{10} and $PM_{2.5}$ can be secondary pollutants formed by chemical reactions in the atmosphere.

Ambient air quality is described in terms of compliance with State and national standards, and the levels of air pollutant concentrations considered safe, to protect the public health and welfare. These standards are designed to protect people most sensitive to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. The USEPA has established national ambient air quality standards (NAAQS) for criteria pollutants. As permitted by the Clean Air Act (CAA), California has adopted the more stringent California ambient air quality standards (CAAQS) and expanded the number of regulated air pollutant constituents.

CARB is required to designate areas of the State as in attainment, nonattainment, or unclassified for any State standard. An “attainment” designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A “nonattainment” designation indicates that a pollutant concentration violated the standard at least once.

The project site is located in unincorporated Kern County that lies within the SJVAB and, as such, is in an area designated as “nonattainment” for certain pollutants that are regulated under the CAA. Table 1, *San Joaquin Valley Air Basin – Attainment Status,* lists the federal and State attainment status of the

[1] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

SJVAB (including Kern County and the project site) for the NAAQS and CAAQS. As shown in Table 1, the SJVAB is designated as attainment for PM_{10}; attainment/unclassified for CO, NO_2, SO_2; extreme nonattainment for 8-hour ozone; and nonattainment for $PM_{2.5}$ with respect to the NAAQS. The SJVAB is designated as attainment for CO, NO_2, SO_2, and lead; severe nonattainment for 1-hour ozone; and as nonattainment for 8-hour ozone, $PM_{2.5}$, and PM_{10} with respect to the CAAQS (SJVAPCD 2024a).

Table 1
SAN JOAQUIN VALLEY AIR BASIN – ATTAINMENT STATUS

Pollutant	Federal Standards	State Standards
Ozone – One hour	No Federal Standard	Nonattainment/Severe
Ozone – Eight hour	Nonattainment/Extreme	Nonattainment
PM_{10}	Attainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment/Unclassified	Attainment/Unclassified
NO_2	Attainment/Unclassified	Attainment
SO_2	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Unclassified	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Source: SJVAPCD 2024a

Toxic Air Contaminants

The Health and Safety Code (§39655, subd. (a).) defines a toxic air contaminant (TAC) as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal CAA (42 United States Code Section 7412[b]) is a TAC. Under State law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health.

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is referred to as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns in diameter (CARB 2024). Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, CARB identified DPM as a TAC based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a notable effect on California's population—it is estimated that about 70 percent of total known cancer risk related to air toxins in California is attributable to DPM (CARB 2024).

San Joaquin Valley Air Pollution Control District

The proposed project is located in unincorporated Kern County, which lies within the SJVAB. Air quality in the SJVAB is regulated by the USEPA at the federal level, by the CARB at the state level, and by SJVAPCD at the regional level. As a regional agency, the SJVAPCD works directly with local governments

and cooperates actively with all federal and State government agencies. The SJVAPCD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary.

Air Quality Plans

The SJVAPCD has developed plans to attain State and federal standards for ozone and particulate matter. The SJVAPCD's air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control methods have worked, and to show how air pollution will be reduced. The plans also use computer modeling to estimate future levels of pollution and make sure that the San Joaquin Valley will meet air quality goals.

1-Hour Ozone Plan – Although the USEPA revoked its 1979 1-hour ozone standard in June 2005, many planning requirements remain in place, and the SJVAB must still attain this standard before it can rescind CAA Section 185 fees. The SJVAPCD's *2013 Plan for the Revoked 1-hour Ozone Standard* demonstrated attainment of the 1-hour ozone standard by 2017 (SJVAPCD 2015). On July 18, 2016, the USEPA published in the Federal Register the final action to determine that the SJVAB has attained the 1-hour ozone standard (USEPA 2016). On June 15, 2023, the SJVAPCD adopted the *2023 Maintenance Plan and Redesignation Request for the Revoked 1-hour Ozone Standard* that includes provisions for a maintenance plan and requirements for meeting all five criteria of Section 107(d)(3)(E) of the CAA (SJVAPCD 2023).

8-Hour Ozone Plan – The SJVAPCD's *2007 Ozone Plan* demonstrates attainment of the 1997 NAAQS 8-hour ozone standard by 2023. The USEPA approved the 2007 Ozone Plan effective April 30, 2012. (SJVAPCD 2015). In June 2016, the SJVAPCD adopted the *2016 Plan for the 2008 8-Hour Ozone Standard* to map strategies for attainment of the updated NAAQS 8-hour ozone standard (SJVAPCD 2016a). The SJVAPCD adopted the *2022 Plan for the 2015 8-Hour Ozone Standard* in December 2022. This Plan satisfies Clean Air Act requirements and ensures expeditious attainment of the 70 parts per billion 8-hour ozone standard (SJVAPCD 2022). On April 24, 2024, the SJVAPCD adopted the *Ozone Contingency State Implementation Plan Revision for the 2008 and 2015 8-Hour Ozone Standards* to address the contingency provisions for the 2008 and 2015 8-hour ozone standards (SJVAPCD 2024b).

PM_{10} Plan – Based on PM_{10} measurements from 2003-2006, USEPA found that the SJVAB has reached Federal PM_{10} standards. On September 21, 2007, the SJVAPCD adopted the *2007 PM10 Maintenance Plan and Request for Redesignation*. On September 25, 2008, the SJVAB was redesignated to attainment/maintenance (SJVAPCD 2015).

$PM_{2.5}$ Plan – The SJVAPCD's *2008 $PM_{2.5}$ Plan* demonstrated 2014 attainment of USEPA's first $PM_{2.5}$ standard, set in 1997. The USEPA lowered the $PM_{2.5}$ standard in 2006, and the SJVAPCD's *2012 $PM_{2.5}$ Plan* showed attainment of this standard by 2019, with the majority of the SJVAB seeing attainment much sooner (SJVAPCD 2015). The SJVAPCD adopted the *2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard* on September 15, 2016. This plan addresses the updated NAAQS 2012 annual $PM_{2.5}$ standard and includes an attainment impracticability demonstration and request for reclassification of the SJVAB from moderate nonattainment to serious nonattainment (SJVAPCD 2016b). These plans came together when the SJVAPCD adopted the *2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards* on November 15, 2018. This plan addresses the federal standards for each of those years (SJVAPCD 2018).

The SJVAPCD adopted the *2024 Plan for the 2012 Annual $PM_{2.5}$ Standard* on June 20, 2024, to fulfill the remaining CAA requirements, including the final modeling analysis, attainment strategy and emission

reduction commitments, reasonable further progress/quantitative milestones, and contingency measures. This Plan demonstrates expeditious attainment of the 2012 PM2.5 standard by 2030 (SJVAPCD 2024c).

Rules and Regulations

The following rules promulgated by the SJVAPCD would be applicable to construction of the proposed project (SJVAPCD 2024d):

Rule 4101 Visible Emissions: prohibit the emissions of visible air contaminants to the atmosphere.

Rule 4102 Nuisance: protect the health and safety of the public.

Rule 8021 Construction, Demolition, Excavation, Extraction, and other Earth Moving Activities: limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities.

Sensitive Receptors

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: adults over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015). Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers.

The closest existing sensitive receptors to the project site are single-family residential homes located 50-feet from the proposed water mains. The closest school is Independence High School located approximately 350 feet northwest of the northern terminus of the proposed 10-inch water main along Old River Road.

Methodology and Assumptions

Criteria pollutant and precursor emissions, and GHG emissions for the proposed project construction activities were calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1. CalEEMod is a Statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air districts. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The model calculates emissions of criteria pollutants, ozone precursors, and GHGs, including PM_{10}, $PM_{2.5}$, ROGs, NO_X, and CO_2e. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices C, D, and G (CAPCOA 2022). The input data and subsequent construction emission estimates for the proposed project are discussed below. The CalEEMod output files are included in Attachment B to Appendix A.

Construction Assumptions

As described above, construction emissions were estimated using CalEEMod. Construction input data for CalEEMod include, but are not limited to, (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; (3) areas to be excavated and graded; and (4) volumes of materials to be exported from and imported to the project area.

Construction of the proposed project is anticipated to begin April 1, 2026, and be completed on December 31, 2026. Most of the pipeline would be installed using convention trenching, commonly known as "cut-and-cover". A short portion of the 10-inch pipeline would be installed underneath an existing irrigation canal/culvert using trenchless tunneling and installation of pipe commonly known as "jack and bore". The total 1.4-acre disturbed area was estimated based on information provided by the project engineer, and it was assumed that the total paved area would be 100 percent asphalt. The construction activity schedule was provided by the project engineer and is outlined in Table 2, *Project Construction Schedule*, below. It was assumed that all construction activities would occur concurrently.

Table 2
PROJECT CONSTRUCTION SCHEDULE

Construction Activity	Construction Start Date	Construction End Date	Number of Working Days
Pavement Demolition	4/1/2026	12/31/2026	197
Trenching-Cut	4/1/2026	12/31/2026	197
Trenching-Cover	4/1/2026	12/31/2026	197
Pipeline Installation	4/1/2026	12/31/2026	197
Pavement Repair	4/1/2026	12/31/2026	197
Jack and Bore Preparation	7/1/2026	7/2/2026	2
Jack and Bore	7/3/2026	7/9/2026	5
Jack and Bore Cleanup	7/10/2026	7/13/2026	2
Restriping	12/1/2026	12/5/2026	4

Source: CalEEMod Output (Attachment B to Appendix A)

Construction equipment for each construction activity was provided by the project engineer and was based on CalEEMod defaults. Table 3, *Project Construction Equipment*, below, presents a summary of the assumed equipment that would be involved in each activity of construction. For this project, a crawler tractor is a Caterpillar PL61 Pipelayer and an off-highway truck is a water truck.

Table 3
PROJECT CONSTRUCTION EQUIPMENT

Construction Activity	Equipment	Number
Pavement Demolition	Tractors/Loaders/Backhoes	2
	Concrete/Industrial Saws	2
	Off-Highway Trucks	1
Trenching-Cut	Excavators	2
Trenching-Cover	Tractors/Loaders/Backhoes	2
	Rollers	2
Pipeline Installation	Crawler Tractors	2
Pavement Repair	Tractors/Loaders/Backhoes	2
	Pavers	2
	Rollers	2

Construction Activity	Equipment	Number
Jack and Bore Preparation	Excavators	1
	Skid Steer Loaders	1
	Tractors/Loaders/Backhoes	1
Jack and Bore	Bore/Drill Rigs	1
	Excavators	1
	Pumps	1
Jack and Bore Cleanup	Skid Steer Loaders	1
	Tractors/Loaders/Backhoes	1
Restriping	Air Compressors	2

Source: CalEEMod Output (Attachment B to Appendix A)

Per the project engineer, 210 tons of old asphalt would be exported during pavement demolition. Emissions calculations assume application of water during pavement demolition and a 15 miles per hour (mph) speed limit on unpaved surfaces in compliance with SJVAPCD Rule 8021, *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities*.

Construction trips were estimated based on information provided by the project engineer and CalEEMod defaults. It was assumed that the proposed project would require five, one-way worker trips per day and one, one-way vendor trip per day for installation of the pipeline. It was also assumed that the proposed project would require one, one-way truckload per day for pavement imports and two, one-way worker trips per day for restriping.

Operational Assumptions

Operation of the proposed project would not result in a population increase and would not generate new vehicle trips beyond occasional maintenance activities. Operation of the proposed project would not require new backup pumps or backup generators. Therefore, changes in project operational emissions would be negligible compared to operational emissions from the existing water systems. Therefore, project operational emissions were not quantified.

Standards of Significance

According to Appendix G of the State CEQA Guidelines, a project would have a significant air quality environmental impact if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan; or

2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard; or

3. Expose sensitive receptors to substantial pollutant concentrations; or

4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Appendix G of the State CEQA Guidelines states that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The SJVAPCD has established significant thresholds to assess the impacts of project-related air pollutant emissions. The significance thresholds are updated, as needed, to appropriately

represent the most current technical information and attainment status in the SJVAB. Table 4, *SJVAPCD Air Quality Significance Thresholds*, presents the most current significance thresholds, including thresholds for construction and operational emissions and maximum incremental cancer risk and hazard indices for TACs. A project with emission rates and risk values below these thresholds is generally considered to have a less than significant impact on air quality.

Table 4
SJVAPCD AIR QUALITY SIGNIFICANCE THRESHOLDS

Mass Daily Thresholds (tons per year)		
Pollutant	**Construction**	**Operation**
ROG	10	10
NO_X	10	10
CO	100	100
PM_{10}	15	15
$PM_{2.5}$	15	15
SO_X	27	27
Toxic Air Contaminants		
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Chronic & Acute Hazard Index ≥ 1.0 (project increment)	

Source: SJVAPCD 2015
ROG: reactive organic gas; NOx: nitrogen oxides; CO: carbon monoxide; PM_{10}: coarse particulate matter with a diameter of 10 microns or less; $PM_{2.5}$: fine particulate matter with a diameter of 2.5 microns or less; SO_X: sulfur oxides; TACs: toxic air contaminants; NO_2: nitrogen dioxide; ppm: parts per million; $\mu g/m^3$: micrograms per cubic meter.

As set forth in the SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts, any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. Impacts of local pollutants (CO, TACs) are cumulatively significant when modeling shows that the combined emissions from the project and other existing and planned projects would exceed air quality standards.

Impact Analysis

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The SJVAPCD has established thresholds of significance for a project's criteria pollutant and precursor emissions for both temporary construction-related emissions and long-term operational-related emissions, which are shown above in Table 4. According to the SJVAPCD, these significant thresholds have been established to assist lead agencies in determining whether a project may have a significant air quality impact. A project with emissions lower than the thresholds would not conflict with or obstruct implementation of the district's air quality plans for attainment of the applicable NAAQS and CAAQS (SJVAPCD 2015). As discussed below, the proposed project would not exceed the temporary construction-related thresholds of significance for criteria pollutants and precursor emissions. Additionally, the proposed project would not result in a population increase and would not generate new vehicle trips, and occasional project maintenance activities would be similar to maintenance activated for the exiting water systems. Operation of the proposed project would not require new pumps or backup generators. Therefore, operational emissions would be negligible.

In addition, control measures in the air quality plans adopted by the SJVAPCD are based in part on growth projections in local planning documents such as the County and City General Plans. The proposed project would not require a change of General Plan land use designation, and the proposed project would not result in population or employment growth in the County or City. Therefore, the proposed project would not conflict with or obstruct implementation of the applicable air quality plans, and the impact would be less than significant.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact. The SJVAB is designated as attainment for PM_{10}; attainment/unclassified for CO, NO_2, SO_2; extreme nonattainment for 8-hour ozone; and in nonattainment for $PM_{2.5}$ with respect to federal air quality standards. The SJVAB is designated as attainment for CO, NO_2, SO_2, and lead; severe nonattainment for 1-hour ozone; and as nonattainment for 8-hour ozone, $PM_{2.5}$, and PM_{10} with respect to State air quality standards. The proposed project's emissions of these criteria pollutants and precursors during construction and operation are evaluated below.

Construction Emissions

CalEEMod was used to quantify project-generated construction emissions, as discussed in *Methodology and Assumptions*, above. The model output sheets are included in Attachment B of Appendix A. Construction of the proposed project is anticipated to start April 1, 2026, and be completed on December 31, 2026. The quantity, duration, and intensity of construction activity influence the amount of construction emissions and related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction activity is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of: (1) a more modern and cleaner-burning construction equipment fleet mix than assumed in CalEEMod; and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval).

The proposed project's construction period emissions of ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ were compared to the SJVAPCD construction thresholds in Table 5, *Annual Construction Criteria Pollutant and Precursor Emissions*. Table 4 presents the most current significance thresholds, including thresholds for construction and operational emissions and maximum incremental cancer risk and hazard indices for TACs. As shown in Table 5, the proposed project's construction period emissions of ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ would not exceed the SJVAPCD thresholds. Therefore, impacts related to construction-generated emissions of ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ would be less than significant.

Table 5
ANNUAL CONSTRUCTION CRITERIA POLLUTANT AND PRECURSOR EMISSIONS

Construction Activities	Pollutant Emissions (tons per year)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Pavement Demolition, Trenching-Cut, Trenching-Cover, Pipeline Installation, Pavement Repair, Jack and Bore Preparation, Jack and Bore, Jack and Bore Cleanup, Restriping	0.30	2.37	3.55	0.01	0.23	0.11
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Attachment B to Appendix A).

Operational Emissions

As discussed in *Methodology and Assumptions*, operational emissions were not quantified. Operation of the proposed project would not result in a population increase and would not generate new vehicle trips, and occasional project maintenance activities would be similar to maintenance activated for the exiting water systems. Operation of the proposed project would not require new pumps or backup generators. Therefore, operational emissions would be negligible, and the impact would be less than significant.

Impact Conclusion

Construction and operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment, and the impact would be less than significant.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. As discussed in *Sensitive Receptors*, the closest existing sensitive receptors to the project site are single-family residential homes located 50-feet from the proposed water laterals in the Old River community. The closest school is Independence High School, which is located approximately 350 feet northwest of the northern terminus of the proposed 10-inch water main along Old River Road.

The dose (of TAC) to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has to the substance; a longer exposure period to a fixed quantity of emissions would result in higher health risks. Current models and methodologies for conducting cancer health risk assessments are associated with longer-term exposure periods (typically 30 years for individual residents based on guidance from OEHHA) and are best suited for evaluation of long-duration TAC emissions with predictable schedules and locations. These assessment models and methodologies do not correlate well with the temporary and highly variable nature of construction activities. Cancer potency factors are based on animal lifetime studies or worker studies where there is long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime (OEHHA 2015). Concentrations of mobile source DPM emissions disperse rapidly and are typically reduced by 70 percent at approximately 500 feet (CARB

2005). Considering the highly dispersive nature of DPM and the fact that construction activities would occur for short durations at various locations in the project area, it is not anticipated that construction of the proposed project would expose sensitive receptors to substantial DPM concentrations.

The use of diesel-powered equipment for occasional project operational maintenance would be similar maintenance equipment use for the existing water system. Operation of the proposed project would not require the use of new stationary sources of TACs, such as backup generators. Therefore, construction and operation of the proposed project would not expose sensitive receptors to substantial pollutant concentrations, and the impact would be less than significant.

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. The proposed project could produce odors during construction activities as a result of heavy diesel equipment exhaust and VOC released during application of asphalt. The odor of these emissions is objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not be at a level that would affect a substantial number of people. Any odors emitted during construction activities would be temporary, short-term, and intermittent in nature, and would cease at the end of project construction. As a result, impacts associated with temporary odors during construction are not considered significant.

The SJVAPCD has developed screening distances for common sources of operational odors, including Wastewater Treatment Facility; Sanitary Landfill; Transfer Station; Composting Facility; Petroleum Refinery; Asphalt Batch Plant; Chemical Manufacturing; Fiberglass Manufacturing; Painting/Coating Operations (e.g., auto body shops); Food Processing Facility; Feed Lot/Dairy; and Rendering Plant (SJVAPCD 2015a). As the proposed project would install water pipelines and fire hydrants, operation of the proposed project would not result in odors affecting a substantial number of people.

Neither construction nor operation of the proposed project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, and the impact would be less than significant.

IV. BIOLOGICAL RESOURCES

		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 Wildlife 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 Wildlife or US 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?	☐	☐	☒	☐

The discussion below is based on a Biological Resources Technical Letter Report prepared by HELIX Environmental Planning, Inc. and attached to this Initial Study as Appendix B.

Environmental Setting

The approximately 27-acre project site is comprised of a developed agricultural road corridor and a small rural community. Several houses and paved roads are found throughout the project site as well as barren areas. Agricultural uses along the road corridor support orchards, annual crops, and some fallowed lands. Based on historical aerial imagery, the project site has been primarily an agricultural community since at least 1952 with the current neighborhood complex served by both water districts having been built between 1956 and 1968 (NETR 2024).

Soils

The Natural Resources Conservation Service (NRCS) has mapped three soil units within the project site: Granoso sandy loam, 0 to 2 percent slopes, overwash; Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17; and Bakersfield fine sandy loam, drained, 0 to 1 percent slopes (NRCS 2024). These soil types are briefly discussed below.

Granoso sandy loam, 0 to 2 percent slopes, overwash has a parent material of alluvium derived from mixed rock sources. A typical soil profile is sandy loam (0 - 10 inches), loamy sand (10 - 20 inches) then sand (20 - 62 inches). This soil is somewhat excessively drained, has a very low runoff class, a rare frequency of flooding, and no frequency of ponding.

Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17 has a parent material of alluvium derived from igneous and sedimentary rock. A typical soil profile is fine sandy loam (0 - 45 inches) and silt loam (45 - 71 inches). This soil is well drained, has a very low runoff class, a rare frequency of flooding, and no frequency of ponding.

Bakersfield fine sandy loam, drained, 0 to 1 percent slopes has a parent material of alluvium derived from granitoid rock. A typical soil profile is fine sandy loam (0 - 16 inches), stratified sand to loam (19 - 45 inches), loam (45 - 51 inches), stratified sandy loam to silt loam (51 – 58 inches), and stratified sand to loam (58 - 66 inches). This soil is somewhat poorly drained, has a negligible class, a rare frequency of flooding, and no frequency of ponding.

Habitat Types

Vegetation communities within the project site include ruderal, barren, and urban. These communities are described in more detail below.

***Ruderal*.** Ruderal habitat is land that retains a soil substrate but is subject to recent or on-going disturbance that prevents the formation of natural vegetation communities. Vegetation in ruderal areas is dominated by naturalized and/or invasive non-native species and ruderal native annuals. The species composition is determined by local colonization potential or past introductions. Ruderal habitat on the project site is dominated by a variety of non-native herbs and forbs, including black mustard (*Brassica nigra*), puncturevine (*Tribulus terrestris*), and medusa head (*Elymus caput-medusae*) as well as non-native shrubs such as big saltbush (*Atriplex lentiformis*). Approximately 0.54 acre of the project site is composed of ruderal habitat and is present along the borders of fallowed farmlands.

Barren. Barren habitat is defined by its absence of vegetation. Approximately 1.94 acres of the project site is barren and has been stripped of vegetation along roadsides and the margins of agricultural operations. The barren areas found within the project site did not show signs of mammal burrows that may serve as suitable habitat for special-status wildlife and nesting birds.

***Urban*.** Urban habitat is land that has been modified for human use and vegetation communities are those planted for aesthetic purposes, unmaintained areas will be colonized by similar vegetation as found in ruderal habitats. Urban habitat found within the project site includes the roads within the project site and the communities served by the Old River MWC and South Kern MWC. Ornamental trees found throughout this habitat include fruitless mulberry (*Morus alba*), Italian cypress (*Cupressus sempervirens*), and California black walnut (*Juglans californica*). Approximately 24.61 acres of the project

site was classified as Urban. Ornamental trees found within the neighborhood complex may serve as suitable habitat for nesting birds.

Methodology

The section below outlines the survey objectives and methodology for determining potential impacts to biological resources associated with the proposed project.

Analysis Objectives

- Identify and describe the vegetation communities in the project site;
- Evaluate and identify sensitive biological resources and special-status plant and animal species that could occur on the project site or be affected by any project-related activities, and;
- Provide conclusions and recommendations for surveys or permits that may be required before site development.

Database Queries

HELIX conducted a review of special-status species records for the *Lamontolor, Gosford, Oil Center, Oildale, Rosedale, Stevens, Weed Patch, Conner,* and *Millux, California,* U.S. Geological Survey (USGS) 7.5-minute quadrangles (quad) from the following databases:

- U.S. Fish and Wildlife Service IPaC (USFWS 2024);
- CDFW California Natural Diversity Database (CNDDB) (CDFW 2024);
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2024);
- National Wetlands Inventory (NWI); and
- NRCS.

Species listed were analyzed for their potential to occur in the project site based on habitat affinities, elevation range, and geographic range. For the purposes of this assessment, special-status species and other protected biological resources are those that fall into one or more of the following categories:

- Species listed as rare, threatened, or endangered under the federal Endangered Species Act (FESA) or California Endangered Species Act (CESA), including candidates and species proposed for listing;
- Species designated as rare, protected, or fully protected pursuant to the California Fish and Game Code (FGC);
- Species considered a Species of Special Concern (SSC) by the CDFW;
- Species meeting the definition of rare or endangered under Section 15380 of CEQA;

- Plants having a California Rare Plant Rank (CRPR) of 1, 2, or 3;
- Nesting bird species protected by FGC; and
- Aquatic resources or other sensitive habitats potentially regulated by federal, state, and/or local agencies,

Field Reconnaissance

A biological reconnaissance survey was conducted by HELIX biologist Dave Pfuhler on June 19, 2024. The project site was assessed for plant communities, habitat types, aquatic resources, and wildlife present at the time of the survey, as well as for the potential for the project site to support special-status species. To classify the habitat types occurring on the project site, HELIX consulted the generalized plant community classification schemes of CDFW's California Wildlife Habitat Relationship Habitat Classification Scheme (Mayer and Laudenslayer 1988). Our final classification and characterization of the habitat types within the project site were based on field observations.

Preliminary wetland boundaries within the project site were mapped as part of the reconnaissance surveys. While a formal aquatic resources delineation was not performed, the extent of aquatic resources mapped are believed to be reflective of wetland conditions at the project site in an average rainfall year.

Species Observations

There were no special-status plant or wildlife species observed in the project site during the field reconnaissance on June 19, 2024. The field reconnaissance was conducted outside of the bloom period when some annual plants would be identifiable, but due to the frequent disturbance activities along Old River Road by vehicular and agricultural operations, special-status plants are not anticipated to be found within the project site. Other wildlife species observed on the project site and in the vicinity of the project site include red winged blackbird (*Agelaius phoeniceus*), house finch (*Haemorhous mexicanus*), house sparrow (*Passer domesticus*), northern mockingbird (*Mimus polyglottos*), black chinned hummingbird (*Archilochus alexandri*), Anna's hummingbird (*Calypte anna*), and mourning dove (*Zenaida macroura*).

Special-Status Plant Species

According to the database query, 22 listed and/or special-status plants have the potential to occur in the vicinity of the project site (CDFW 2024; CNPS 2024; USFWS 2024). Based on field observations, published information, and literature review, no special-status plants have potential to occur within the project site. The frequent disturbance and herbicide application implemented by agricultural activities, and the continued maintenance of urbanized areas do not present suitable habitat for special status-plants.

Special-Status Wildlife Species

According to the database query, 41 listed and/or special-status wildlife have the potential to occur in the vicinity of the project site (CDFW 2024; USFWS 2024). Based on field observations, published information, and literature review, one special-status animal has potential to occur within the project site: Swainson's hawk (*Buteo swainsoni*). This species has the potential to utilize ornamental trees found

within the margins of the urbanized habitat for nesting due to their proximity to suitable foraging habitat. In addition to this special-status wildlife species, other migratory birds and raptors protected under federal, State, and local laws/policies also have the potential to occur within the project site. No other critical, or sensitive habitats that would host special-status species were identified within the project site.

Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under CEQA, Section 1600 of the FGC (i.e., riparian areas) and/or Sections 401 and 404 of the Clean Water Act, which include wetlands and other waters of the U.S. Additionally, sensitive habitats, including native trees and oak woodland habitat, are protected under the specific policies outlined in the Kern County General Plan. Sensitive habitats were not identified within the project site.

Impact Analysis

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 Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated.

Special-Status Plants

Based on field observations, published information, and literature review, no special-status plants have potential to occur within the project site. The frequent disturbance and herbicide application implemented by agricultural activities, and the continued maintenance of urbanized areas do not present suitable habitat for special status-plants. Therefore, the proposed project would have a less than significant impact on special-status plants.

Special-Status Wildlife Species

Based on field observations, published information, and literature review, one special-status animal has potential to occur within the project site: Swainson's hawk (*Buteo swainsoni*). This species has the potential to utilize ornamental trees found within the margins of the urbanized habitat for nesting due to their proximity to suitable foraging habitat. In addition to this special-status wildlife species, other migratory birds and raptors protected under federal, State, and local laws/policies also have the potential to occur within the project site.

Project construction activities have the potential to affect Swainson's hawk if it were to nest within the project site. If Swainson's hawk were to nest within or adjacent to the site, impacts to nesting could occur through noise, vibration, and the presence of construction equipment and personnel. Eggs and young still dependent on the nest would be susceptible to injury or mortality through physical contact or through nest abandonment caused by displacement of adults. Needless destruction of eggs or young would be a violation of the Fish and Game Code. Mitigation Measure BIO-1 would be implemented to reduce potential impacts to Swainson's hawk. With implementation of Mitigation Measure BIO-1, the impact would be less than significant.

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 Code of Federal Regulations (CFR) 10; this also includes feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Additionally, 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., hawks, owls, eagles, and falcons), including their nests or eggs; Section 3513 specifically states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

A number of migratory birds and raptors have the potential to nest in or adjacent to the project site. Suitable nest locations within and adjacent to the project site include trees, housing eaves, other artificial structures, and bare ground. There is potential for direct and indirect impacts to nesting birds if they were to nest within or adjacent to the project site. Eggs and young still dependent on the nest would be susceptible to injury or mortality through physical contact or through nest abandonment caused by the displacement of adults. Needless destruction of eggs or young would be a violation of the Fish and Game Code. Mitigation Measure BIO-1 would be implemented to reduce potential impacts to nesting and migratory birds and raptors. With implementation of Mitigation Measure BIO-1, the impact would be less than significant.

Impact Conclusion

No special-status plants have potential to occur within the project site, and the impact would be less than significant. One special-status animal has potential to occur within the project site: Swainson's hawk. Mitigation Measure BIO-1 would be implemented to reduce potential impacts to Swainson's hawk. Additionally, a number of migratory birds and raptors have the potential to nest in or adjacent to the project site. Mitigation Measure BIO-1 would be implemented to reduce potential impacts to nesting and migratory birds and raptors. With implementation of Mitigation Measure BIO-1, the impact would be less than significant.

BIO-1 Pre-Construction Surveys and Worker Environmental Awareness Training. To avoid impacts to nesting birds, all ground disturbing activity and all vegetation clearing, including removal of trees and shrubs, shall be completed between September 1 and January 31, if feasible.

If vegetation removal and grading activities begin during the nesting season (February 1 to August 31), a qualified biologist shall conduct a pre-construction survey of the project footprint for active nests. Additionally, the surrounding 500 feet should be surveyed for active raptor nests, where accessible. A windshield survey for potential Swainson's hawk nests shall be conducted within 0.25 mile of the footprint as part of the survey. The pre-construction survey shall be conducted within 14 days before the commencement of ground-disturbing activities. If the pre-construction survey shows that there is no evidence of active nests, a letter report shall be prepared to document the survey, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, an additional survey is required before starting work. If active nests are identified, the following measure shall be implemented:

- A species-specific buffer shall be established by a qualified biologist around active nests and no construction activities within the buffer shall be allowed until a qualified biologist has determined that the nest is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest, or the nest has failed). Encroachment into the buffer may occur at the discretion of a qualified biologist. Any encroachment into the buffer shall be monitored by a qualified biologist to determine whether nesting birds are being impacted.

A qualified biologist shall conduct environmental awareness training to all project-related personnel before the initiation of work within the nesting season (February 1-August 31).

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

No Impact. No riparian habitats, sensitive natural communities, or other protected habitats are located on or adjacent to the project site. Therefore, no impact would occur.

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?

No Impact. There are no potential waters of the U.S. or state on the site. Therefore, there would be no impact to potential waters of the U.S. or state.

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?

No Impact. The project site is comprised of a developed agricultural road corridor and a small rural community. Several houses and paved roads are found throughout the project site as well as barren areas. Agricultural uses along the road corridor support orchards, annual crops, and some fallowed lands. Although birds may use trees on-site, the project site does not function as a wildlife corridor or nursery site. In addition, the proposed project's aboveground impacts would be limited to the construction period and would not result in permanent aboveground changes impeding wildlife movement. The proposed project would not substantially interfere with wildlife movement or nursery sites, and no impact would occur.

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

No Impact. The proposed project would not conflict with any local policies or ordinances protecting biological resources. No trees would be removed and therefore there would be no impact.

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?

Less Than Significant Impact. The project site is within the area for the Metropolitan Bakersfield Habitat Conservation Plan (MBHCP; City 1994). However, the proposed project would not conflict with the provisions of the MBHCP because the project-specific Mitigation Measure BIO-1 outlined in the

discussion of impact a) would address impacts to special-status wildlife species with potential to occur in the project area. Therefore, as the proposed project does not conflict with the provisions of the MBHCP, the impact would be less than significant.

V. CULTURAL RESOURCES

	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 pursuant to Section 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

The discussion below is based on a Cultural Resources Letter Report prepared by HELIX Environmental Planning, Inc. (HELIX 2024) and attached to this Initial Study as Appendix C.

Methodology

Records Searches

HELIX Archaeologists conducted a records search at the Southern San Joaquin Valley Information Center on May 15, 2024, which revealed that 26 cultural resource surveys have been conducted within a 0.5-mile radius of the project's Area of Potential Effect (APE), and that 11 of these studies included the APE as part of their survey area. One cultural resource had been previously recorded within the proposed project's APE, and 17 cultural resources have been previously recorded within a 0.5-mile radius of the APE. None of the resources are anticipated to be affected by the proposed project.

On May 15, 2024, HELIX requested that the Native American Heritage Commission (NAHC) conduct a search of their Sacred Lands File (SLF) for the presence of Native American sacred sites or human remains in the vicinity of the proposed project area. A written response received from the NAHC on May 30, 2024, stated that the results of the SLF search were negative. Subsequently, on June 17, 2024, HELIX sent letters to eight (8) Native American contacts that were recommended by the NAHC as potential sources of information related to cultural resources in the vicinity of the project area. The letters described the proposed project, provided location maps, and requested information regarding cultural resources in the immediate area, as well as any feedback or concerns they may have related to the proposed project, for informational purposes only. On July 2, 2024, HELIX received a written response from Robert Pennell, the Cultural Resource Director for the Table Mountain Rancheria. The letter stated that the proposed project was beyond the Table Mountain Rancheria's area of interest. As of the date of this report, no other responses have been received from the Native American contacts.

For information about tribal consultation under the CEQA (AB 52 consultation) between the tribes and the Lead Agency, see Section 7.XVIII, Tribal Cultural Resources.

Regulatory Framework

Federal Laws, Regulations, and Policies

National Historic Preservation Act of 1966 (16 USC 470)

The National Historic Preservation Act of 1966 (16 USC 470), enacted in 1966, declared a national policy of historic preservation, and instituted a multifaceted program, administered by the Secretary of the Interior, to encourage the achievement of preservation goals at the federal, state, and local levels. The NHPA authorized the expansion and maintenance of the NRHP, established the position of State Historic Preservation Officer (SHPO) and provided for the designation of State Review Boards, set up a mechanism to certify local governments to carry out the purposes of the NHPA, assisted Native American tribes in preserving their cultural heritage, and created the Advisory Council on Historic Preservation (ACHP).

National Register of Historic Places

The National Register of Historic Places (NRHP) was established by the National Historic Preservation Act (HPA) of 1966 as "an authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR Part 60.2).

The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A property is eligible for the NRHP if it is significant under one or more of the following criteria:

- Criterion A: It is associated with events that have made a significant contribution to the broad patterns of our history.
- Criterion B: It is associated with the lives of persons who are significant in our past.
- Criterion C: It embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction.
- Criterion D: It has yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

Cemeteries, birthplaces, graves of historic figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, and properties that are primarily commemorative in nature are not considered eligible for the NRHP unless they satisfy certain conditions. In general, a resource must be at least 50 years old to be considered for the NRHP, unless it satisfies a standard of exceptional importance.

State Laws, Regulations, and Policies

California Environmental Quality Act

Pursuant to CEQA, a historical resource is a resource listed in, or eligible for listing in, the California Register of Historical Resources (CRHR). In addition, resources included in a local register of historic resources or identified as significant in a local survey conducted in accordance with State guidelines, are also considered historic resources under CEQA, unless a preponderance of the facts demonstrates otherwise. According to CEQA, the fact that a resource is not listed in, or determined eligible for listing in, the CRHR, or is not included in a local register or survey, shall not preclude a Lead Agency, as defined by CEQA, from determining that the resource may be a historic resource as defined in California Public Resources Code (PRC) Section 5024.1.7.

CEQA applies to archaeological resources when (1) the historic or prehistoric archaeological resource satisfies the definition of a historical resource, or (2) the historic or prehistoric archaeological resource satisfies the definition of a "unique archaeological resource." A unique archaeological resource is an archaeological artifact, object, or site that has a high probability of meeting any of the following criteria (PRC Section 21083.2(g)):

1. The archaeological resource contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information.

2. The archaeological resource has a special and particular quality, such as being the oldest of its type or the best available example of its type.

3. The archaeological resource is directly associated with a scientifically-recognized important prehistoric or historic event or person.

California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks, numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historic resources surveys, or designated by local landmarks programs may be nominated for inclusion in the CRHR.

A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria (PRC Section 5024.1(c)):

Criterion 1: It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

Criterion 2: It is associated with the lives of persons important in our past.

Criterion 3: It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.

Criterion 4: It has yielded, or may be likely to yield, information important in history or prehistory.

Resources nominated to the CRHR must retain enough of their historic character or appearance to be recognizable as historic resources and to convey the reasons for their significance. It is possible that a resource whose integrity does not satisfy NRHP criteria may still be eligible for listing in the CRHR. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR if, under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data. Resources that have achieved significance within the past 50 years also may be eligible for inclusion in the CRHR, provided that enough time has lapsed to obtain a scholarly perspective on the events or individuals associated with the resource.

California Health and Safety Code 7050.5

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined if the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the NAHC within 24 hours of this identification.

Native American Heritage Commission

PRC Section 5097.91 established the NAHC, whose duties include the inventory of places of religious or social significance to Native Americans and the identification of known graves and cemeteries of Native Americans on private lands (PRC Section 5097.94). The NAHC is responsible for bring forth actions regarding the prohibition or mitigation of severe or irreparable damage to Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property. PRC Section 5097.94 and Section 5097.98 specify steps to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner, including repatriation under the Native American Graves and Repatriation Act of 2001 and assisting landowners with developing agreements with appropriate Native American groups for the dignified treatment of Native American burials and associated cultural material.

California Public Resources Code Section 5097.98

Section 5097.98 of the California Public Resources Code states that the NAHC, upon notification of the discovery of Native American human remains pursuant to Health and Safety Code Part 7050.5, shall immediately notify those persons (i.e., the Most Likely Descendant or "MLD") it believes to be descended from the deceased. With permission of the landowner or a designated representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site.

Impact Analysis

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less Than Significant with Mitigation Incorporated. The records search conducted by HELIX on May 15, 2024, determined that 17 previously recorded cultural resources are located within 0.5 mile of the current APE, but outside of the APE itself, and that one additional cultural resource was located within the APE. According to SSJCIV records, the Stine Canal was recommended as ineligible for inclusion in the NRHP on May 7, 1996, by Bryan Apper, AICP, of the California Department of Transportation office in Fresno, California. In a response letter dated May 24, 1996, Ms. Cherilyn Widell, California SHPO, concurred with the recommendation that the Stine Canal was not eligible for inclusion on the NRHP under any of the criteria established by 36 CFR 60.4, and that the canal does not have strong association with historic events or persons, nor does it possess significance as an architectural or engineering structure. As this was the only potential historical resource identified within the APE and has been deemed ineligible for inclusion on the NRHP, the proposed project is not anticipated to cause a substantial change in the significance of a historic resource. No archaeological resources within the APE or in the project vicinity have been previously documented and listed within the SSJCIV records system.

On May 15, 2024, HELIX requested that the NAHC conduct a search of their Sacred Lands File for the presence of Native American sacred sites or human remains in the vicinity of the proposed project site. A written response received from the NAHC on May 30, 2024, stated that the results of the Sacred Lands File search were negative. On June 17, 2024, HELIX sent letters to 8 Native American contacts that were recommended by the NAHC as potential sources of information related to cultural resources in the vicinity of the project site. The letters advised the tribes and specific individuals of the proposed project and requested information regarding cultural resources in the immediate area, as well as any feedback or concerns related to the proposed project. The letters were sent to the following individuals:

- Delia Dominguez, Chairperson, Kitanemuk & Yowlumne Tejon Indians
- Violet Walker, Chairperson, Northern Chuman Tribal Council
- Bob Pennell, Cultural Resource Director, Table Mountain Rancheria
- Michelle Heredia-Cordova, Chairperson, Table Mountain Rancheria
- Candice Garza, CRM Scheduler, Tejon Indian Tribe
- Kerri Vera, Environmental Department, Tule River Indian Tribe
- Joey Garfield, Tribal Archaeologist, Tule River Indian Tribe
- Neil Peyron, Chairperson, Tule River Indian Tribe

On July 2, 2024, HELIX received a written response from Robert Pennell, the Cultural Resource Director for the Table Mountain Rancheria. The letter stated that the proposed project was beyond the Table

Mountain Rancheria's area of interest. No other responses have been received from these Native American points of contact. For information about tribal consultation under CEQA (AB 52 consultation) between tribes and the Lead Agency, see Section 7.XVIII, Tribal Cultural Resources.

The results of records searches have led HELIX to recommend that there would be no effect on historical resources or historic properties, including archaeological and built-environment resources, as a result of project implementation. No additional studies or archaeological work are recommended at this time. However, HELIX recommends that the Accidental Discovery of Cultural Resources protocol (Mitigation Measure CUL-1) be implemented to prepare the project team for the unlikely event that cultural resources are encountered during excavation and construction activities. Without mitigation, the impact is potentially significant. Implementation of Mitigation Measures CUL-1 would reduce the impact to less than significant. Therefore, the impact on historical and archaeological resources pursuant to PRC Section 15064.5 would be less than significant with mitigation incorporated for questions a) and b).

CUL-1 Accidental Discovery of Cultural Resources. In the event that cultural resources are exposed during ground-disturbing activities, construction activities should be halted within 100 feet of the discovery. Cultural resources could consist of but are not limited to stone, bone, wood, or shell artifacts, or features including hearths, structural remains, or historic dumpsites. If the resources cannot be avoided during the remainder of construction, an archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards should then be retained, in coordination with the City to assess the resource and provide appropriate management recommendations. If the discovery proves to be CRHR- or NRHP-eligible, additional work, such as data recovery excavation, may be warranted and should be discussed in consultation with the City.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact with Mitigation Incorporated. Records searches conducted by HELIX staff did not find indications of precontact cultural resources within the APE. However, the possibility exists that ground-disturbing activities during construction may inadvertently uncover previously unknown buried human remains or cultural resources. Although it is highly unlikely that there would be an impact to human remains from construction or operation of the proposed project, there is always the possibility that ground-disturbing activities during construction may uncover previously unknown buried human remains. Therefore, implementation of Mitigation Measure CUL-2, Accidental Discovery of Human Remains, would ensure that impacts related to the inadvertent discovery of human remains remain less than significant. Impacts would be less than significant with mitigation incorporated.

CUL-2 Accidental Discovery of Human Remains. Although considered highly unlikely, there is always the possibility that ground disturbing activities during construction may uncover previously unknown human remains. In the event of an accidental discovery or recognition of any human remains, PRC Section 5097.98 must be followed. Once project-related earthmoving begins and if there is a discovery or recognition of human remains, the following steps shall be taken:

1. There shall be no further excavation or disturbance of the specific location or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains are Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC

shall identify the person or persons it believes to be the "most likely descendant" of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in PRC Section 5097.98, or

2. Where the following conditions occur, the landowner or their authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or on the project area in a location not subject to further subsurface disturbance:

    a. The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission;

    b. The descendent identified fails to make a recommendation; or

The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner.

VI. ENERGY

	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 a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

The discussion below is based on an Air Quality and Greenhouse Gas Emissions Letter Report prepared by HELIX Environmental Planning, Inc. and attached to this Initial Study as Appendix A.

Environmental Setting

California's electricity needs are satisfied by a variety of entities, including investor-owned utilities, publicly owned utilities, electric service providers and community choice aggregators. In 2020, the California power mix totaled 272,576 gigawatt hours. In-state generation accounted for 51 percent of the state's power mix. The remaining electricity came from out-of-state imports (CEC 2021a). Table 6, *California Electricity Sources 2020*, provides a summary of California's electricity sources as of 2020.

Table 1
CALIFORNIA ELECTRICITY SOURCES 2020

Fuel Type	Percent of California Power
Coal	2.74
Large Hydro	12.21
Natural Gas	37.06
Nuclear	9.33
Oil	0.01
Other (Petroleum Coke/Waste Heat)	0.19
Renewables (Excluding Large Hydro)	33.09
Unspecified	5.36

Source: CEC 2021a

Natural gas provides the largest portion of the total in-state capacity and electricity generation in California, with nearly 45 percent of the natural gas burned in California used for electricity generation in a typical year. Much of the remainder is consumed in the residential, industrial, and commercial sectors for uses such as cooking, space heating, and as an alternative transportation fuel. In 2012, total natural gas demand in California for industrial, residential, commercial, and electric power generation was 2,313 billion cubic feet per year (bcf/year), up from 2,196 bcf/year in 2010 (CEC 2021b).

Transportation accounts for a major portion of California's energy budget. Automobiles and trucks consume gasoline and diesel fuel, which are nonrenewable energy products derived from crude oil. Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline being consumed by light-duty cars, pickup trucks, and sport utility vehicles (SUVs). In 2015, 15.1 billion gallons of gasoline were sold in California (CEC 2021c). Diesel fuel is the second most consumed fuel in California, used by heavy-duty trucks, delivery vehicles, buses, trains, ships, boats, and farm and construction equipment. In 2015, 4.2-billion gallons of diesel were sold in California (CEC 2021d).

The project site is serviced by Pacific Gas & Electric (PG&E) for electricity and is serviced by Southern California Gas for gas.

Impact Analysis

a) 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. Construction of the proposed project would consume energy, primarily in the form of petroleum-based fuels (i.e., gasoline and diesel). Heavy-duty off-road construction equipment, on-road trucks, vendor trips, and worker maintenance trips would consume these fuels. Project-related consumption of such energy resources for construction would be temporary, typical for this type of construction, and cease upon the completion of construction. No inefficient or unnecessary construction methods are proposed such that excessive energy resources would be consumed during project construction. During project operation, no energy resources would be required since the proposed project would not require new backup pumps or generators. Therefore, the project would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and impacts would be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less than Significant Impact. See discussion under question a) above. The proposed project would not conflict with or obstruct a State or local plan for renewable energy efficiency. The project would conform to all applicable State, federal, and local laws, and codes. Therefore, impacts would be less than significant.

VII. GEOLOGY AND SOILS

	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 (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Environmental Setting

The project site is located within the Great Valley Geomorphic Province of California, which is an alluvial plain about 50 miles wide and 400 miles long between the Coast Ranges and the Sierra Nevada. The Great Valley is drained by the Sacramento and San Joaquin rivers, which join and enter San Francisco Bay (County 2004). The major faults and faulting systems in the County include the San Andreas Fault, Garlock Fault, White Wolf Fault, Pond-Poso Creek Fault, Kern Front Fault, Owens Valley Fault, and Buena Vista Fault.

The mapped soil types within the project site are described below (NRCS 2024):

- Granoso sandy loam, 0 to 2 percent slopes, overwash. This soil has a parent material of alluvium derived from mixed rock sources. A typical soil profile is sandy loam (0 - 10 inches), loamy sand (10 - 20 inches) then sand (20 - 62 inches). This soil is somewhat excessively drained, has a very low runoff class, a rare frequency of flooding, and no frequency of ponding.

- Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17. This soil has a parent material of alluvium derived from igneous and sedimentary rock. A typical soil profile is fine sandy loam (0 - 45 inches) and silt loam (45 - 71 inches). This soil is well drained, has a very low runoff class, a rare frequency of flooding, and no frequency of ponding.

- Bakersfield fine sandy loam, drained, 0 to 1 percent slopes. This soil has a parent material of alluvium derived from granitoid rock. A typical soil profile is fine sandy loam (0 - 16 inches), stratified sand to loam (19 - 45 inches), loam (45 - 51 inches), stratified sandy loam to silt loam (51 – 58 inches), and stratified sand to loam (58 - 66 inches). This soil is somewhat poorly drained, has a negligible class, a rare frequency of flooding, and no frequency of ponding.

Impact Analysis

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?

Less Than Significant Impact. The project site is not located on or near an Alquist-Priolo Earthquake Fault Zone (DOC 2024b). The nearest active fault to the project site is the White Wolf Fault located approximately 20 miles southeast of the project site (DOC 2024c). As there are no faults mapped within or near the project site, ground rupture as a result of the proposed project would be unlikely. Therefore, the impact would be less than significant.

   ii. Strong seismic ground shaking?

Less Than Significant Impact. The proposed project would install approximately 6,000 linear feet of a new 10-inch water main, 1,600 linear feet of 8-inch lateral pipelines, and 29 household connections. Three fire hydrants would also be installed, and two wells would be abandoned as part of the proposed project. There is always potential in California for seismic ground shaking; however, the proposed project would not construct new buildings, residences, or other aboveground structures that have the potential to be inhabitable or hazardous to humans or other structures in a ground-shaking event.

The proposed pipeline alignments and fire hydrants would be constructed in compliance with current codes and standards, including California Building Code (CBC) requirements to reduce potential hazards resulting from strong seismic ground shaking. Therefore, the impact would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Seismic ground shaking of relatively loose, granular soils that are saturated or submerged can cause the soil to liquefy and temporarily behave as a dense fluid. Liquefaction is caused by a sudden temporary increase in pore water pressure due to seismic densification or other displacement of submerged granular soils. Liquefaction most often occurs in areas underlain by young alluvium where the groundwater table is higher than 50 feet below the ground surface (County 2004).

The project site is not located on or near the Alquist-Priolo Earthquake Fault Zone and is not located within a liquefaction zone (DOC 2024b). As the proposed project would not construct habitable structures, it is not expected that implementation of the proposed project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving liquefaction. The proposed pipeline alignments and fire hydrants would be constructed in compliance with current codes and standards, including CBC requirements to reduce potential hazards resulting from liquefaction. Therefore, the impact would be less than significant.

iv. Landslides?

Less Than Significant Impact. Areas in Kern County subject to landslides are primarily located in the Coast Range, San Emidio Mountains, and in the vicinity of Bear Mountain (County 2004). The proposed project would be located within the ROW of Old River Road, SR-119, Par Street, Beam Street, and front yards of existing residences. The project area is generally flat with elevations that range from 338 feet to 346 feet above mean sea level (amsl). Additionally, the project site is not located within a landslide zone (DOC 2024b).

Due to the natural topography of the proposed project area and the small scale of required construction activities, it is not expected that implementation of the proposed project would expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. Therefore, the impact would be less than significant.

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

Less Than Significant Impact. The proposed project would install approximately 6,000 linear feet of a new 10-inch water main, 1,600 linear feet of 8-inch lateral pipelines, and 29 household connections. Three fire hydrants would also be installed, and two wells would be abandoned as part of the proposed project. The new 10-inch water main would be located within the disturbed portions of Old River Road and SR-119, and the proposed 8-inch lateral pipelines and household connections would be located within disturbed portions of Par Street, Beam Street, and front yards of existing residences.

Construction of the proposed project would require surface disturbance, which may include the removal of stabilizing surfaces, excavation, and backfill. However, after completion of construction activities, these surfaces would be restabilized, and there would be no change of erosion potential in the project area. Potential short-term impacts from construction would be addressed through conformance with applicable elements of the National Pollutant Discharge Elimination System (NPDES) Construction General Permit, including implementation of a SWPPP. The SWPPP would implement Best Management Practices (BMPs) during construction to reduce on-site erosion of disturbed soil. Therefore, with implementation of the SWPPP and BMPs, the project would not result in substantial soil erosion or the loss of topsoil, and the impact would be less than significant.

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. The proposed project site includes the following soil types: Granoso sandy loam, 0 to 2 percent slopes, overwash; Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17; and Bakersfield fine sandy loam, drained, 0 to 1 percent slopes (NRCS 2024). As described above in the impact analysis for question a.iv) above, the proposed project would not result in adverse effects related to landslides. The potential for lateral spreading and subsidence is related to a site's potential for liquefaction. As described in question a.iii), the project site is not located within a liquefaction zone and the potential adverse effects related to liquefaction would be less than significant. Therefore, it is not anticipated that lateral spreading or subsidence would occur at the project site.

Additionally, the proposed pipeline and fire hydrants would be constructed in compliance with current codes and standards, including CBC requirements to reduce potential hazards resulting from landslides, lateral spreading, subsidence, liquefaction, or collapse. Therefore, the impact would be less than significant.

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

Less Than Significant Impact. Expansive soils are fine-grained soils (generally high plasticity clays) that can undergo a significant increase in volume with an increase in water content, and a significant decrease in volume with a decrease in water content. Changes in the water content of a highly expansive soil can result in severe distress to structures constructed on or against the soil. The shrink swell behavior of expansive soils can lead to damage of project improvements over time if not addressed appropriately before construction. Expansive soils generally consist of clay type soils such as smectite, bentonite, montmorillonite, beidellite, vermiculite, and others are known to expand with changes in moisture content.

The project site is comprised of sandy loam soils, including Granoso sandy loam, 0 to 2 percent slopes, overwash; Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17; and Bakersfield fine sandy loam, drained, 0 to 1 percent slopes (NRCS 2024). Granoso sandy loam and Kimberline fine sandy loam are well drained soils that have very low runoff classes, while Bakersfield fine sandy loam is somewhat poorly drained. All soil types present on the project site have a rare frequency of flooding and no frequency of ponding, and are not considered to be expansive. The project would not construct habitable structures and would thereby not create risks to life or property. Therefore, the impact would be less than significant.

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?

No Impact. The proposed project does not propose septic tanks or alternative wastewater disposal systems. Therefore, no impact would occur.

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

Less Than Significant Impact with Mitigation Incorporated. No previous surveys conducted in the proposed project area have identified the proposed project site as sensitive for paleontological

resources or other geologically sensitive resources, nor have testing or ground disturbing activities performed to date uncovered any paleontological resources or geologically sensitive resources. The new 10-inch water main would be located within the disturbed portions of Old River Road and SR-119, and the proposed 8-inch lateral pipelines and household connections would be located within disturbed portions of Par Street, Beam Street, and front yards of existing residences. While the likelihood of encountering paleontological resources and other geologically sensitive resources is considered low, project-related ground disturbing activities could affect the integrity of a previously unknown paleontological or other geologically sensitive resource. Implementation of Mitigation Measure GEO-1 would reduce potentially significant impacts to a level of less than significant.

GEO-1 Avoid and Minimize Impacts to Paleontological Resources. In the event paleontological or other geologically sensitive resources (such as fossils or fossil formations) are identified during any phase of project construction, all excavations within 100 feet of the find shall be temporarily halted until the find is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards. The paleontologist shall notify the appropriate representative at the City who shall coordinate with the paleontologist as to any necessary investigation of the find. If the find is determined to be significant under CEQA, the City shall implement those measures which may include avoidance, preservation in place, or other appropriate measures, as outlined in Public Resources Code Section 21083.2.

VIII. GREENHOUSE GAS EMISSIONS

		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 an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

The discussion below is based on an Air Quality and Greenhouse Gas Emissions Letter Report prepared by HELIX Environmental Planning, Inc. and attached to this Initial Study as Appendix A.

Environmental Analysis

The proposed project is located in unincorporated Kern County, which lies within the SJVAB. Air quality in the SJVAB is regulated by the USEPA at the federal level, by CARB at the state level, and by the SJVAPCD at the regional level.

The SJVAB comprises all or part of eight counties: San Joaquin, Stanislaus, Fresno, Merced, Madera, Kings, Tulare, and Kern. The distinctive climate of the SJVAB is determined by its terrain and geographic location. The SJVAB is in the southern half of California's Central Valley and is 250 miles long and averages 35 miles wide. The SJVAB is bounded by the Sierra Nevada Mountains to the east, the Coast Ranges to the west, the Tehachapi Mountains to the south, and is open to the Sacramento Valley and San Francisco Bay Area to the north.

The SJVAB is in a Mediterranean climate zone which is characterized by typically hot and dry summers and sparse rainfall mainly during the winter. Especially in summer, winds in the SJVAB most frequently blow from the northwesterly direction. The region's topographic features restrict air movement and channel the air mass towards the southeastern end of the basin. A secondary but significant summer wind pattern is from the southeasterly direction and can be associated with nighttime drainage winds from the Sierra Nevada Mountains, and prefrontal conditions. Many days in the winter are marked by stagnation events where winds are very weak. Transport of pollutants during winter can be very limited. The vertical dispersion of air pollutants in the SJVAB can be limited by persistent temperature inversions. Temperature inversions that occur on the summer days are usually encountered 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor. The mountains surrounding the basin are mostly above the typical summer height of inversion layers, restricting dispersion of pollutants (SJVAPCD 2015).

Solar radiation and temperature are particularly important in the chemistry of ozone formation. The SJVAB averages over 260 sunny days per year. Generally, the higher the temperature, the more ozone formed, since reaction rates increase with temperature. The 1937 through 2016 annual average maximum daily temperature as measured at the Bakersfield Airport climatic station,

approximately 7 miles northeast of the project site, is 77.8 degrees °F. The highest monthly average maximum daily temperature (98.6°F) occurs in July, and the lowest monthly average minimum daily temperature (38.5°F) occurs in December and January. The average annual precipitation is approximately 6.2 inches (Western Regional Climate Center 2016).

Regulatory Setting

Global climate change refers to changes in average climatic conditions on Earth including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by atmospheric gases. These gases are commonly referred to as GHGs because they function like a greenhouse by letting sunlight in but preventing heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with: (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The GHGs defined under California's AB 32, described below, include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Estimates of GHG emissions are commonly presented in carbon dioxide equivalents (CO_2e), which weigh each gas by its global warming potential (GWP). Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. GHG emissions quantities in this analysis are presented in metric tons (MT) of CO_2e. For consistency with United Nations Standards, modeling, and reporting of GHGs in California and the U.S. use the GWPs defined in the Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report (IPCC 2007): CO_2 – 1; CH_4 – 25; N_2O – 298.

GHG Reduction Regulations and Plans

The primary GHG reduction regulatory legislation and plans (applicable to the project) at the State and levels are described below. Implementation of California's GHG reduction mandates are primarily under the authority of CARB at the State level, and under the authority of the SJVAPCD at the regional level.

Executive Order S-3-05: On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. Executive Orders are not laws and can only provide the governor's direction to State agencies to act within their authority to reinforce existing laws.

Assembly Bill 32 – Global Warming Solution Act of 2006: The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that CARB develop and enforce regulations for the reporting and verification of Statewide GHG emissions. CARB is directed by AB 32 to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

Executive Order B-30-15: On April 29, 2015, EO B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28-nation European Union. California is on track to meet or exceed the target of reducing GHGs emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the goal established by EO S-3-05 of reducing emissions to 80 percent under 1990 levels by 2050.

Senate Bill 32: Signed into law by Governor Brown on September 8, 2016, Senate Bill (SB) 32 (Amendments to the California Global Warming Solutions Action of 2006) extends California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a Statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EO B-30-15 of 80 percent below 1990 emissions levels by 2050.

Executive Order S-01-07: This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a Statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010.

Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS Statewide.

Senate Bill 100: Approved by Governor Brown on September 10, 2018, SB 100 requires that all retail sales of electricity to California end-use customers be procured from 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

Executive Order N-79-20: EO N-79-20, signed by Governor Newsom on September 23, 2020, establishes three goals for the implementation of zero emissions vehicles in California: first, 100 percent of in-State sales of new passenger cars and trucks will be zero-emissions by 2035; second, 100 percent of medium- and heavy-duty vehicles in the State will be zero-emissions vehicles by 2045 for all operations where feasible, and by 2035 for drayage trucks; and third, 100 percent of off-road vehicles and equipment will be zero emissions by 2035 where feasible.

Assembly Bill 1279: Approved by Governor Newsom on September 16, 2022, AB 1279, the California Climate Crisis Act, declares the policy of the State to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels. AB 1279 anticipates achieving these policies through direct GHG emissions reductions, removal of CO_2 from the atmosphere (carbon capture), and an almost complete transition away from fossil fuels.

California Air Resources Board Scoping Plan: The Scoping Plan is a strategy CARB develops and updates at least once every five years, as required by AB 32. It lays out the transformations needed across our society and economy to reduce emissions and reach our climate targets. The current 2022 Scoping Plan

is the third update to the original plan that was adopted in 2008. The initial 2008 Scoping Plan laid out a path to achieve the AB 32 mandate of returning to 1990 levels of GHG emissions by 2020, a reduction of approximately 15 percent below business as usual. The 2008 Scoping Plan included a mix of incentives, regulations, and carbon pricing, laying out the portfolio approach to addressing climate change and clearly making the case for using multiple tools to meet California's GHG targets. The 2013 Scoping Plan assessed progress toward achieving the 2020 mandate and made the case for addressing short-lived climate pollutants (SLCPs). The 2017 Scoping Plan also assessed the progress toward achieving the 2020 limit and provided a technologically feasible and cost-effective path to achieving the SB 32 mandate of reducing GHGs by at least 40 percent below 1990 levels by 2030. On December 15, 2022, CARB approved the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan). The 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by AB 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels; further reductions in SLCPs; support for sustainable development; increased action on natural and working lands to reduce emissions and sequester carbon; and the capture and storage of carbon (CARB 2022).

San Joaquin Valley Air Pollution Control District: In December 2009, the SJVAPCD adopted the following guidance documents applicable to the project:

- Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009a), and

- District Policy: Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009b).

This guidance and policy are the documents referenced in the SJVAPCD's *Guidance for Assessing and Mitigating Air Quality Impacts,* adopted in March 2015 (SJVAPCD 2015). Consistent with the District Guidance and District Policy above, SJVAPCD acknowledges the current absence of numerical thresholds, and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

1. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;

2. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement best performance standards (BPS); and

3. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent, compared to business-as-usual.

The SJVAPCD adopted a Climate Change Action Plan (CCAP) in 2008 and issued guidance for development project compliance with the plan in 2009. The guidance adopted an approach that relies on the use of BPS to reduce GHG emissions. Projects implementing BPS would be determined to have a less than cumulatively significant impact. For projects not implementing BPS, demonstration of a 29 percent reduction in project-specific (i.e., operational) GHG emissions from business-as-usual conditions is required to determine that a project would have a less than cumulatively significant impact (SJVAPCD

2009a). Both the SJVAPCD CCAP and the guidance for development project compliance are limited to achieving the State 2020 GHG reduction goals mandated by AB 32. The SJVAPCD CCAP and the guidance for development project compliance do not address California's post-2020 GHG reduction goals. Kern County currently does not have a CAP or other GHG reduction plan which addresses post-2020 GHG reductions mandated by SB 32 and AB 1279.The City of Bakersfield is currently in the process of preparing its first Climate Action Plan (CAP), and released a draft CAP for public comment in 2023; however, at the time of this analysis, the City has not adopted the CAP (City 2024a).

Sensitive Receptors

CARB and the OEHHA have identified the following groups of individuals as the most likely to be affected by air pollution: adults over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015). Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers.

The closest existing sensitive receptors to the project site are single-family residential homes located 50-feet from the proposed water laterals. The closest school is Independence High School located approximately 350 feet northwest of the northern terminus of the proposed 10-inch water main along Old River Road.

Methodology and Assumptions

For the methodology and assumptions for GHG emissions, please see Section 4.III, Air Quality.

Standards of Significance

Given the relatively small levels of emissions generated by a project in relationship to the total amount of GHG emissions generated on a national or global basis, individual projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts. According to Appendix G of the State CEQA Guidelines, the following criteria may be considered in establishing the significance of GHG emissions:

Would the project:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

The SJVAPCD has adopted the guidance in *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* and the 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 BPS to assess the significance of project-specific GHG emissions on global climate change

during the environmental review process. However, SJVAPCD's adopted BPS are specifically directed at reducing GHG emissions from stationary sources; therefore, the adopted BPS would not generally be applicable to the proposed project as construction of the pipelines would not be a stationary source of emissions. The SJVAPCD guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project-related impacts on global climate change.

Neither the County, City, nor the SJVAPCD has adopted a GHG emissions threshold for construction and operational emissions. In the event that a local air district's guidance for addressing GHG impacts does not use numerical GHG emissions thresholds, at the lead agency's discretion, GHG thresholds adopted by neighboring California air districts may be used to determine impacts. The Sacramento Metropolitan Air Quality Management District (SMAQMD) has adopted a GHG construction threshold of 1,100 MT CO_2e per year for a project's construction emissions (SMAQMD 2021). A project with an emission rate below this threshold is generally considered to have a less than significant impact on GHG emissions.

Impact Analysis

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact.

Construction Emissions

GHG emissions would be generated by the proposed project during construction from vehicle engine exhaust from construction equipment, on-road trucks, vendor trips, and worker maintenance trips.

Construction GHG emissions were calculated using CalEEMod, as described in *Methodology and Assumptions*. The results of the construction GHG emissions calculations were compared to the SMAQMD threshold in Table 7, *Construction GHG Emissions*. As shown in Table 7, the construction GHG emissions would not exceed the SMAQMD construction GHG threshold, and the impact would be less than significant.

Table 7
CONSTRUCTION GHG EMISSIONS

Year of Emissions	Emissions (MT CO_2e)
2026	567
SMAQMD Construction Threshold (per year)	*1,100*
Exceed Threshold?	No

Source: CalEEMod (output data is provided in Attachment B to Appendix A).

Operational Emissions

As discussed in *Methodology and Assumptions*, operational emissions were not quantified. Operation of the proposed project would not result in a population increase and would not generate new vehicle trips, and occasional project maintenance activities would be similar to maintenance activated for the exiting water systems. Operation of the proposed project would not require new pumps or backup generators. The proposed project would not result in changes in water use, and the electricity used by the proposed project to treat and divide water to customers would be similar to the electricity used by

the existing water systems. Therefore, operational GHG emissions would be negligible, and the impact would be less than significant.

Impact Conclusion

Construction and operation of the proposed project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The impact would be less than significant.

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is AB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. SB 32 requires further reductions of 40 percent below 1990 levels by 2030. AB 1279 requires the State to achieve net zero GHG emissions no later than 2045. The mandates of AB 32, SB 32, and AB 1279 are implemented at the State level by the CARB's Scoping Plan. Because the proposed project's operational year is post-2020, the project aims to reach the quantitative goals set by SB 32 and AB 1279. Statewide plans and regulations such as GHG emissions standards for vehicles and transportation fuels, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the Statewide level; as such, compliance at the project level is not addressed. Therefore, the proposed project would not conflict with those plans and regulations.

As noted in impact question a) above, construction GHG emissions would not exceed the GHG thresholds, and would be less than significant. In addition, operation of the proposed project would not result in a population increase and would not result in substantial changes in GHG emissions compared to operation of the existing water systems. As a result, the proposed project would not conflict with the GHG reduction objectives of the State's Scoping Plan, including net zero GHG emissions by 2045, mandated by AB 1279, or the SJVAPCD's CCAP. The impact would be less than significant.

IX. HAZARDS AND HAZARDOUS MATERIALS

		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 which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise 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?	☐	☐	☒	☐

Environmental Setting

The proposed project is located in Kern County southwest of the City of Bakersfield. The nearest school to the project site is Independence High School, located approximately 350 feet northwest of the project site. The nearest public airport is the Bakersfield Municipal Airport located approximately 7 miles east of the project site.

The following databases were reviewed for the project site and surrounding area to identify potential hazardous contamination sites: the State Water Resources Control Board's GeoTracker tool (SWRCB 2024), California Department of Toxic Substance Control's (DTSC) EnviroStor online tool (DTSC 2024); and the USEPA's Superfund National Priorities List (USEPA 2024). Based on the results of the databases reviewed, no hazardous waste sites are on the proposed project site.

Federal and State laws include provisions for the safe handling of hazardous substances. The federal Occupational Safety and Health Administration (OSHA) administers requirements to ensure worker safety. Construction activity must also be in compliance with the California OSHA regulations (Occupational Safety and Health Act of 1970).

Impact Analysis

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. Construction activities may involve the limited transport, storage, use, and/or disposal of hazardous materials, such as for the fueling and servicing of construction equipment on-site. These activities would be short-term or one-time in nature and would be subject to federal, State, and local health and safety regulations, which would minimize hazards related to the use of these materials.

Long-term operation of the proposed project would involve little or no hazardous materials since the proposed project would be mainly subterranean and would not emit hazardous materials. The proposed project would not result in a significant hazard related to the transport, use, or disposal of hazardous materials, and impacts would be less than significant.

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?

Less Than Significant Impact. Old River MWC provides water to 46 residents via 14 connections in its 10.7-acre service area. Water is provided by a single well, located within the service area. Water delivered by the Old River MWC system contains uranium levels that exceed the MCL of 30 µg/L established by State and federal regulations. Water from this well also exceeds the 1, 2, 3-TCP MCL of 0.005 µg/L. South Kern MWC provides water to 32 residents via 15 service connections in its 9.7-acre service area. Water is provided by a single well in the northeast corner of the service area. The well currently produces water that exceeds the uranium MCL of 30 µg/L. Water from this well also exceeds the 1, 2, 3-TCP MCL of 0.005 µg/L. The proposed project would abandon the Old River MWC well and the South Kern MWC well and extend the City of Bakersfield's water system to serve the areas previously served by these two MWCs, thereby consolidating both MWCs into the City of Bakersfield's water system. Operation of the proposed project would replace the contaminated wells, thereby reducing the community residents' potential exposure to hazardous materials.

As discussed in the analysis of impact a), limited amounts of hazardous materials would be used during construction; however, these materials would be used and stored in accordance with applicable regulations that would limit the potential for their accidental release. As the proposed pipeline would be mainly subterranean and would not involve the use of hazardous materials, there are no reasonably foreseeable upset or accident conditions that would result in the release of hazardous materials into the environment. Therefore, the impact would be less than significant.

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

Less Than Significant Impact. The nearest school to the project site is Independence High School, located approximately 350 feet northwest of the northern terminus of the water main to be installed

along Old River Road. As discussed under question a), construction activities may involve the limited transport, storage, use, and/or disposal of hazardous materials, such as for the fueling and servicing of construction equipment on-site. These activities would be short-term or one-time in nature and would be subject to federal, State, and local health and safety regulations, which would minimize hazards related to the use of these materials. Long-term operation of the proposed project would involve little or no hazardous materials since the proposed project would be mainly subterranean and would not emit hazardous materials. Therefore, the impact would be less than significant.

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

No Impact. As noted above, the following databases were reviewed for the project site and surrounding area to identify potential hazardous contamination sites: the SWRCB GeoTracker tool (SWRCB 2024), DTSC EnviroStor online tool (DTSC 2024); and the USEPA's Superfund National Priorities List (USEPA 2024). Based on the results of the databases reviewed, no hazardous waste sites are on the proposed project site. Therefore, the proposed project would not create a significant hazard to the public or the environment and no impact would occur.

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 or excessive noise for people residing or working in the project area?

No Impact. The proposed project is not located within an airport land use plan and is not located within two miles of a public airport or public use airport. The nearest public airport is the Bakersfield Municipal Airport located approximately 7 miles east of the project site. Therefore, the proposed project would not result in a safety hazard or excessive noise for people residing or working in the project area and no impact would occur.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact with Mitigation Incorporated. The proposed project would construct approximately 6,000 linear feet of new 10-inch water main, 1,600 linear feet of 8-inch lateral pipelines with connections to 29 households. Three fire hydrants would also be installed for use in case of emergency. The majority of the proposed project would be subterranean, and the proposed pipelines would run underneath Old River Road, SR-119, Par Street, and Beam Street.

Project construction is anticipated to begin as early as April 2026 and continue for approximately nine months. Construction of the pipeline would take place within the ROW of Old River Road, SR-119, Par Street, and Beam Street. Old River Road is categorized as an arterial roadway, while SR-119 is a highway. Both roads would likely be used by local residents in the event of an evacuation or emergency. The proposed construction along Old River Road, SR-119, Par Street, and Beam Street may result in temporary disturbance to traffic or lane closures along these roads. Full closure of these roads is not anticipated, but individual lanes may be temporarily closed during construction. Mitigation Measure HAZ-1 would require the preparation of Traffic Management Plan before construction to address potential disruption to or re-routing of traffic that might be needed during project construction. With implementation of Mitigation Measure HAZ-1, the impact would be less than significant.

HAZ-1 Traffic Management Plan. If lane closures or speed restrictions are necessary to allow adequate space for project construction, a Traffic Management Plan shall be developed for the proposed project to manage traffic during temporary lane closures along Old River Road, SR-119, and Beam Street. The Traffic Management Plan shall be prepared by the applicant and shall be reviewed and approved by the City before the commencement of construction activities.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less Than Significant Impact. The proposed project would construct approximately 6,000 linear feet of new 10-inch water main, 1,600 linear feet of 8-inch lateral pipelines with connections to 29 households. Three fire hydrants would also be installed for use in case of emergency. As the majority of the proposed project would be subterranean, impacts associated with wildland fires would not be anticipated. Additionally, according to California Department Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zone Map, the project site is located within a Local Responsibility Area (LRA; CAL FIRE 2024). The project site is not located on or near the Fire Hazard Severity Zone (FHSZ; CAL FIRE 2024). Therefore, the proposed project would not expose people or structures to people or structures to significant risk, and the impact would be less than significant.

X. HYDROLOGY AND WATER QUALITY

	Potentially 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 or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease 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 or through the addition of impervious surfaces, 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 off-site?	☐	☐	☒	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional resources of polluted runoff?	☐	☐	☒	☐
iv. Impede or redirect flood 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?	☐	☐	☒	☐

Environmental Setting

Surface Water

The project area is within the South Valley Floor Watershed with Region 5 – Tulare Lake Hydrologic Basin (CVRWQCB 2018). The SWRCB publishes updates to the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) to improve water quality and maintain beneficial uses in the drainage area of the San Joaquin Valley south of the San Joaquin River. The Basin Plan describes water quality concerns for the area that include agriculture, forestry, urban land uses, and stormwater runoff (CVRWQCB 2018). The proposed project is located adjacent to the Stine Canal, which crosses underneath SR-119 just east of its intersection with Old River Road.

Groundwater

Old River MWC and South Kern MWC currently provide water service to residential and commercial customers in the project area. Each MWC operates using a single well, located within their respective service areas, which provides water to adjacent parcels and nearby customers.

Old River MWC provides water to 46 residents via 14 connections in its 10.7-acre service area. Water is provided by a single well, located within the service area. The Old River MWC well was constructed in 1962 and has a ten-inch diameter steel casing perforated from 189 to 291 feet bgs. Water delivered by the Old River MWC system contains uranium levels that exceed the MCL of 30 µg/L established by State and federal regulations. Water from this well also exceeds the 1, 2, 3-TCP MCL of 0.005 µg/L. The Old River MWC well lacks source reliability and storage capacity to serve the customers. The MWC also lacks technical, managerial, and financial capacity.

South Kern MWC provides water to 32 residents via 15 service connections in its 9.7-acre service area. Water is provided by a single well in the northeast corner of the service area. The South Kern MWC well was constructed in 1959 and has a ten-inch diameter steel casing perforated from 230 to 337 feet bgs. The well currently produces water that exceeds the uranium MCL of 30 µg/L. Water from this well also exceeds the 1, 2, 3-TCP MCL of 0.005 µg/L. The South Kern MWC well also lacks source reliability and storage capacity to serve the customers. The MWC also lacks technical, managerial, and financial capacity.

Floodplain

The proposed project is located on Federal Emergency Management Agency (FEMA) panel 06029C2300E effective September 26, 2008 (FEMA 2024). The proposed project is not located within a 100-year floodplain.

Impact Analysis

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact with Mitigation Incorporated. The proposed project would abandon the Old River MWC well and South Kern MWC well and extend the City of Bakersfield's water system to serve the areas previously served by these two MWCs. To extend service from the City of Bakersfield's water system to the areas currently served by Old River MWC and South Kern MWC, the proposed project would construct approximately 6,000 linear feet of new 10-inch water main, 1,600 linear feet of 8-inch lateral pipelines with connections to 29 households. Three fire hydrants would also be installed, and two wells would be abandoned as part of the proposed project. Construction of the proposed project would require surface disturbance, which may include the removal of stabilizing surfaces, excavation, and backfill. Potential water quality impacts associated with the proposed project could include short-term construction-related discharge of pollutants in the Stine Canal.

Projects that disturb one acre of soil or more are required to obtain NPDES coverage under the NPDES Construction General Permit (CGP). Construction activities subject to the CGP include clearing, grading, and other ground disturbances such as stockpiling or excavation. The CGP requires the development and implementation of a SWPPP, which would include construction and operational BMPs to reduce on-site soil erosion and subsequent pollution of stormwater runoff, ultimately protecting California's surface

water resources. As the proposed project would disturb greater than one acre, a SWPPP would be prepared and BMPs would be implemented. Development and implementation of a site-specific SWPPP, as well as construction and operational BMPs, would reduce the proposed project's potential to violate any water quality standards, waste discharge requirements, or otherwise substantially degrade surface or ground water quality. Where the proposed project would cross the Stine Canal, jack and bore construction would be used to install the pipeline underneath the canal. Project construction would take place primarily during agricultural season, during which it is anticipated that the canal could have flow. The Stine Canal is an earthen canal, and there is potential for groundwater intrusion during jack and bore construction. Implementation of Mitigation Measure HYD-1 would require detailed dewatering methods and coordination with the Kern Delta Water District. Any potential shoring activities required for the jack and bore operation to connect the pipeline under the Stine Canal would be prepared in accordance with local engineering standards.

Upon completion of construction, project components would be located underground and would not result in runoff that could degrade water quality. With implementation of construction BMPs required by the project-specific SWPPP, and implementation of Mitigation Measure HYD-1, impacts related to water quality would be less than significant with mitigation incorporated.

HYD-1 Prepare and Implement Dewatering and Shoring Plans. In the event that dewatering activities are implemented for any construction activities, a dewatering plan shall be submitted to the City for approval before the issuance of a grading permit. At a minimum, the dewatering plan shall include dewatering methods, location of dewatering activities, equipment, groundwater sampling, disposal, and discharge point in accordance with the applicable waste discharge requirements of the Central Valley Regional Water Quality Control Board. In the event that shoring methods are implemented for any excavations, shoring plans shall be prepared and submitted to the City for approval before the issuance of a grading permit. Shoring activities required for the jack and bore operations to connect utility lines under the Stine Canal shall be prepared in accordance with the City engineering standards. Additionally, the project applicant shall coordinate with the Kern Delta Water District regarding boring under Stine Canal, and any applicable recommendations shall be implemented.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. Old River MWC and South Kern MWC currently provide water service to residential and commercial customers in the project area. Each MWC operates using a single well, located within their respective service areas, which provides water to adjacent parcels and nearby customers. The proposed project would extend water service from the City of Bakersfield to this area and the South Kern and Old River wells would be abandoned.

Construction of the pipelines would be mainly subterranean and would take place within the ROW of Old River Road, SR-119, Par Street, and Beam Street. The pipeline trench depth is expected to be between four and ten feet, with a total excavation width of five feet. The proposed project would require a trenchless crossing underneath Old River Road, the Stine Canal, SR-119, and an existing culvert.

After completion of the proposed construction, the roadways would return to their existing condition. As the proposed pipelines would be constructed within existing road ROW, there would be minimal

increase in the amount of impervious surface at the project site. Additionally, the proposed project would not require the withdrawal of groundwater. Once the project is implemented, operation of the South Kern and Old River MWC wells will cease and they will no longer draw from local groundwater. Therefore, the proposed project would not decrease groundwater supplies or interfere with groundwater recharge, and the impact would be less than significant.

c) 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. The proposed project would install approximately 6,000 linear feet of a new 10-inch water main, 1,600 linear feet of 8-inch lateral pipelines, and 29 household connections. Three fire hydrants would also be installed, and two wells would be abandoned as part of the proposed project. The new 10-inch water main would be located within the disturbed portions of Old River Road and Taft Highway, and the proposed 8-inch lateral pipelines and household connections would be located within disturbed portions of Par Street, Beam Street, and front yards of existing residences. The proposed project would require a jack and bore crossing underneath Old River Road, the Stine Canal, SR-119, and an existing culvert.

Construction of the proposed project would require surface disturbance, which may include the removal of stabilizing surfaces, excavation, and backfill. However, after completion of construction activities, these surfaces would be restabilized, and there would be no change of erosion potential in the project area. Additionally, as the majority of the proposed project would be subterranean and within existing road ROW, the potential for erosion would be minimized. As outlined in question a), potential short-term impacts from construction would be addressed through conformance with applicable elements of the NPDES CGP, including preparation and implementation of a SWPPP. The SWPPP would implement BMPs during construction to reduce on-site erosion of disturbed soil. Therefore, with implementation of the SWPPP and BMPs, the proposed project would not result in substantial soil erosion or the loss of topsoil, and impacts would be less than significant.

    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. As described in question b), construction of the pipelines would be mainly subterranean and would take place within the ROW of Old River Road, SR-119, Par Street, and Beam Street. The pipeline trench depth is expected to be between four and ten feet, with a total excavation width of five feet. The proposed project would require a trenchless crossing underneath Old River Road, the Stine Canal, SR-119, and an existing culvert.

After completion of the proposed construction, the roadways would return to their existing condition. As the proposed pipelines would be constructed within existing road ROW and roads would remain the same width, there would be no increase in the amount of impervious surface at the project site. Therefore, the proposed project would not substantially increase the rate or amount of surface runoff that would result in flooding on- or off-site and the impact would be less than significant.

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional resources of polluted runoff?

Less Than Significant Impact. As described in question b), construction of the pipelines would be mainly subterranean and would take place within the ROW of Old River Road, SR-119, Par Street, and Beam Street. The pipeline trench depth is expected to be between four and ten feet, with a total excavation width of five feet. The proposed project would require a trenchless crossing underneath Old River Road, the Stine Canal, SR-119, and an existing culvert. As the proposed pipelines would be constructed within existing roadways and roadways would return to their existing conditions after construction, there would be no increase in the amount of impervious surface at the project site.

Additionally, as described in question a), potential short-term impacts from construction would be addressed through conformance with applicable elements of the NPDES CGP, including preparation and implementation of a SWPPP. The SWPPP would implement BMPs during construction to reduce on-site erosion of disturbed soil and to prevent substantial polluted runoff from entering the stormwater drainage system. Therefore, the proposed project would not create or contribute runoff water which would exceed the capacity of stormwater drainage systems and the impact would be less than significant.

iv. Impede or redirect flood flows?

Less Than Significant Impact. As described in question b), construction of the pipelines would be mainly subterranean and would take place within the ROW of Old River Road, SR-119, Par Street, and Beam Street. The pipeline trench depth is expected to be between four and ten feet, with a total excavation width of five feet. The proposed project would require a trenchless crossing underneath Old River Road, the Stine Canal, SR-119, and an existing culvert. After completion of the proposed construction, the roadways would return to their existing condition. As the proposed pipelines would be constructed within existing road ROW, there would be minimal increase in the amount of impervious surface at the project site.

Additionally, the proposed project is located on FEMA panel 06029C2300E effective September 26, 2008 (FEMA 2024). The proposed project is not located within a 100-year floodplain. Therefore, the proposed project would not impede or redirect potential flood flows and the impact would be less than significant.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less Than Significant Impact. As described in question c.iv), the proposed project is not located within a 100-year floodplain. The proposed project site is not at risk of inundation due to a tsunami as it is located approximately 70 miles east of the Pacific Ocean. Additionally, the proposed project site is not subject to seiche as the nearest lake or reservoir, Lake Webb, is located approximately 8 miles southwest of the project site. Therefore, the impact would be less than significant.

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

Less Than Significant Impact. The proposed project would comply with the Water Quality Control Plan for the Tulare Lake Basin and NPDES Stormwater Program by implementing a SWPPP and BMPs to prevent construction pollutants from violating any water quality standards or waste discharge requirements. Additionally, the proposed project is within the Kern County Subbasin of the San Joaquin

Valley Groundwater Basin Groundwater Sustainability Plan (GSP; County 2024a). The proposed project does not involve pumping or extraction of groundwater, and following construction of the pipeline, the roadways would return to their existing condition. Therefore, the proposed project would comply with the Kern County Subbasin GSP, and the impact would be less than significant.

XI. LAND USE AND PLANNING

		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 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?	☐	☐	☒	☐

Environmental Setting

The proposed project is located partially within the City of Bakersfield city limits and partially within unincorporated Kern County. The proposed project consists of the construction of a water main and laterals which would connect the City of Bakersfield water system to the unincorporated community of Old River in Kern County. The proposed water main would connect to an existing water main located at the intersection of McCutcheon Road and Old River Road within the City limits. The new pipeline would then run approximately one mile south along Old River Road to its intersection with SR-119, where the proposed pipeline would run east and connect to the Old River community. The land adjacent to the proposed project to the west of Old River Road is within the Bakersfield city limits. The land to the east of Old River Road and to the south of SR-119, including the community of Old River, is located in unincorporated Kern County.

General Plan Land Use Designation

The proposed pipeline extension would begin at the intersection of McCutchen Road and Old River Road and would run approximately one mile south along Old River Road to the Old River community. Land along the western side of Old River Road falls within the city limits and is designated primarily as low density residential and resource-intensive agricultural, with some parcels designated as general commercial and estate residential near the intersection with SR-119 (City 2024b). Land to the east of Old River Road lies within County jurisdiction and is designated primarily as resource-intensive agricultural, with a few parcels designated as heavy commercial and general commercial near the intersection with SR-119. Land in the community of Old River lies in the County jurisdiction and is designated as low density residential and consists mainly of single-family residential units and some commercial development (County 2024b).

Zoning Classification

Land to the west of Old River Road in the City of Bakersfield is primarily zoned for residential development (R-1 One Family Dwelling and P.U.D. Planned Unit Development), with an area zoned for commercial activities at the northwest corner of SR-119 and Old River Road. Land to the east of Old River Road in unincorporated Kern County is primarily zoned for agricultural activities (A, Exclusive Agriculture), with a small area at the northeast corner of the intersection of SR-119 and Old River Road zoned for commercial activities (CH, Highway Commercial, and C-2, General Commercial). In the

community of Old River, the parcels bordering SR-119 are zoned for commercial use (CH, Highway Commercial, and C-2, General Commercial). The rest of the community is zoned for residential use (R-2, Medium Density Residential). South of SR-119, the areas surrounding the community of Old River to the west, south, and east are zoned for agricultural use (County 2024b).

Impact Analysis

a) Physically divide an established community?

No Impact. The proposed project would provide new water service connections from the Bakersfield water system to the existing residential and commercial users within the unincorporated Old River community. The proposed project would involve the construction of a 10-inch water main within the disturbed portions of Old River Road and SR-119, three fire hydrants, 8-inch lateral pipelines within the residential portion of the site, and 29 household connections. The proposed fire hydrants, 8-inch lateral pipelines, and household connections would be located within disturbed portions of Par Street, Beam Street, and front yards of existing residences. The pipelines would operate passively underground and would not physically divide an existing community. No impact would occur.

b) Cause 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?

Less Than Significant Impact. As mentioned above in question a), the proposed project would be installed underground within the road ROW and front yards of existing residences and would not result in changes to land use types in the project area. During construction, staging would occur along the road ROW and would not result in changes to land uses. Therefore, the proposed project would not result in changes to land use and would not result in other land use policy conflicts, and impacts would be less than significant.

XII. MINERAL RESOURCES

		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 a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Environmental Setting

Mineral resources in Kern County include borax, cement production, petroleum, and construction aggregates (County 2004). The Kern County General Plan Land Use, Open Space, and Conservation Element (General Plan) outlines policies to protect the current and future extraction of mineral resources that provide value to Kern County (County 2009). The Surface Mining and Reclamation Act of 1975 (SMARA) was enacted in response to land use conflicts between urban growth and essential mineral production. It requires the California Geological Survey to classify California lands into mineral resource zones (MRZs), defined as follows:

- MRZ-1: areas where adequate information indicates that no significant mineral deposits are present or where it is judged that little likelihood exists for their presence.
- MRZ-2: areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.
- MRZ-3: areas containing mineral deposits, the significance of which cannot be evaluated from available data.
- MRZ-4: areas where available information is inadequate for assignment into any other MRZ.

Kern County contains MRZs designated as MRZ-1 and MRZ-2. Policy 17 of The General Plan Land Use, Conservation, and Open Space Element states that lands classified as MRZ-2 should be protected from encroachment of incompatible land uses. The project site is located approximately four miles north of a designated MRZ-1 and approximately six miles southwest of a designated MRZ-2. Policy 25 aims to discourage incompatible land use adjacent to map code 8.4 (Mineral and Petroleum areas). The proposed project site is located approximately eight miles east of a Mineral and Petroleum area. No mining activity occurs on the project site, and the nearest mine is located approximately 15 miles from the project site (County 2024c).

Impact Analysis

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

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

No Impact. The proposed project site is not located within the immediate vicinity of a designated mineral resource zone and would not encroach upon Mineral and Petroleum land use designations. The construction and operation of the proposed project would occur primarily within the disturbed areas of existing roadways. Therefore, there is little to no potential for mineral resource recovery to occur within the project site. The proposed project would not result in the loss of availability of mineral resources or a delineated mineral resource recovery site. No impact to mineral resources would occur.

XIII. NOISE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:					
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?	☐	☐	☐	☒

HELIX conducted quantitative modeling related to noise generated by the proposed project using the Roadway Construction Noise Model (RCNM). The RCNM output files are attached to this Initial Study as Appendix D.

Noise Metrics

All noise-level and sound-level values presented herein are expressed in terms of decibels (dB), with A weighting, abbreviated "dBA," to approximate the hearing sensitivity of humans. Time averaged noise levels of one hour are expressed by the symbol "L_{EQ}" unless a different time period is specified. Maximum noise levels are expressed by the symbol "L_{MAX}."

Because decibels are logarithmic units, S_{PL} cannot be added or subtracted through standard arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than from one source under the same conditions. For example, if one automobile produces an S_{PL} of 70 dBA when it passes an observer, two cars passing simultaneously would not produce 140 dBA—rather, they would combine to produce 73 dBA. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dBA louder than one source.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1 dBA changes in sound levels, when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000 Hertz [Hz]–8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dBA are generally not perceptible. It is widely accepted, however, that people begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5 dBA increase is generally

perceived as a distinctly noticeable increase, and a 10 dBA increase is generally perceived as a doubling of loudness.

Vibration Metrics

Groundborne vibration consists of rapidly fluctuating motions or waves transmitted through the ground with an average motion of zero. Sources of groundborne vibrations include natural phenomena and anthropogenic causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions). Peak particle velocity (PPV) is commonly used to quantify vibration amplitude. The PPV, with units of inches per second (in/sec), is defined as the maximum instantaneous positive or negative peak of the vibration wave.

Noise and Vibration Sensitive Land Uses

Noise-sensitive land uses (NSLU) are land uses that may be subject to stress and/or interference from excessive noise, such as residential dwellings, schools, transient lodgings (hotels), hospitals, educational facilities, and libraries. Industrial and commercial land uses are generally not considered sensitive to noise. Noise receptors are individual locations within an NSLU that may be affected by noise. The nearest existing NSLU to the proposed project are single-family residential homes located 50-feet from the proposed water mains. The closest school is Independence High School located approximately 350 feet northwest of the northern terminus of the proposed 10-inch water main along Old River Road.

Land uses in which ground-borne vibration could potentially interfere with operations or equipment, such as research, hospitals, and university research operations are considered “vibration-sensitive.” The degree of sensitivity depends on the specific equipment that would be affected by the ground-borne vibration. In addition, excessive levels of ground-borne vibration of either a regular or an intermittent nature can result in annoyance to residential uses, schools, or transient lodging. Land uses in the project area that are subject to annoyance from vibration include the residences described above. Ground-borne vibration can also cause structural damage or architectural damage (e.g., cracking plaster) to buildings.

Regulatory Framework

Kern County Code of Ordinances

The Kern County code of ordinances contains the following section applicable to project construction noise:

8.36.020 Prohibited sounds.

It is unlawful for any person to do, or cause to be done, any of the following acts within the unincorporated areas of the county:

H. Create noise from construction, between the hours of nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, which is audible to a person with average hearing faculties or capacity at a distance of one hundred fifty (150) feet from the construction site, if the construction site is within one thousand (1,000) feet of an occupied residential dwelling except as provided below:

1. The development services agency director or his designated representative may for good cause exempt some construction work for a limited time.

2. Emergency work is exempt from this section.

City of Bakersfield Municipal Code

The City of Bakersfield municipal code contains the following section applicable to project construction noise:

9.22.050 Noise during construction.

A. Except as provided herein or in subsection B, C or D of this section, it is unlawful for any person, firm or corporation to erect, demolish, alter or repair any building, or to grade or excavate land, streets or highways, other than between the hours of six a.m. and nine p.m. on weekdays, and between eight a.m. and nine p.m. on weekends; provided, however, that city crews and those of the city's contractors performing street work between nine p.m. and six a.m. are exempt here from if the city engineer has directed that work be performed between such hours to alleviate potential traffic congestion.

B. Notwithstanding any other provisions of this chapter, if the city manager determines that the public health and safety will not be impaired by the erection, demolition, alteration or repair of any building or the excavating and grading of land, streets or highways between the hours of nine p.m. and six a.m., and if he or she further determines that loss or inconvenience would result to any party in interest by virtue of the requirements provided in subsection A of this section, he or she may grant a permit for such work to be done between the hours of nine p.m. and six a.m., upon application being made at the time the permit for the work is awarded or during the progress of the work. Such permit may be granted for a period not to exceed three days, and may be extended by the city manager for a period not to exceed three days.

C. The provisions of this section shall not apply to any work of construction performed one thousand feet or more from the nearest residential dwelling.

D. The provisions of this section shall not apply to performance of emergency work as defined in this chapter.

Impact Analysis

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?

Less Than Significant Impact. Proposed project construction work would occur outside the City limits, however, some noise sensitive land uses along the pipeline alignments are within the City limits. Therefore, both the Kern County code of ordinances and the City municipal code are considered in evaluation of project construction noise impacts.

Construction of the proposed project is anticipated to begin April 1, 2026, and be completed on December 31, 2026. Most of the pipeline would be installed using convention trenching, commonly

known as “cut-and-cover”. A short portion of the 10-inch pipeline would be installed underneath an existing irrigation canal/culvert using trenchless tunneling and installation of pipe commonly known as “jack-and-bore”. Construction equipment would include backhoes, concrete saws, excavators, pipelayers, trenchless tunneling machines, pavers, vibratory rollers, and water trucks. Construction equipment would not all operate at the same time or location and would not be in constant use during the 8-hour operating day. Noise produced by the construction equipment was calculated using the RCNM Version 1.1 (US Department of Transportation [USDOT] 2008). The loudest anticipated construction equipment would be a concrete saw which could be used 50 feet from single-family residences during pavement demolition. The calculated noise from a concrete saw at a distance of 50 feet would be 82.6 dBA L_{EQ}. The RCNM results are attached to this Initial Study as Appendix D. Per the both the County ordinance Section 8.36.020 and City ordinance section 9.22.050, there are no standards for allowable construction noise levels, however construction work is unlawful except between the hours of 6:00 a.m. and 9:00 p.m. on weekdays, and between 8:00 a.m. and 9:00 p.m. on weekends. Both ordinance sections provided that, if the Kern County development services agency or City manager have determined that, for good cause, construction work may be exempted from the above construction hours limitation for a limited time. Compliance with the Kern County and City ordinances for construction noise hours would ensure that disturbance of nearby NSLUs would be minimized and less than significant.

The proposed project would not install any new operational noise generating equipment such as new pumps or new emergency backup generators. Project periodic maintenance activities would be similar to activities currently conducted for the existing water systems and would not result in any new operational noise.

Therefore, the construction and operation of the proposed project would not result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed project in excess of standards established in the local general plan or noise ordinance. The impact would be less than significant.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Construction activities would result in groundborne vibration from the use of heavy construction equipment, but it is not anticipated that project construction would require blasting or pile drivers. The largest potential source of vibration during project construction would be a vibratory roller primarily used to achieve soil compaction and pavement compaction, which could be used as close as 50 feet from the nearest vibration sensitive land uses (single-family residences). Per the Federal Transit Administration’s Transit Noise and Vibration Impact Assessment Manual, a large vibratory roller could create approximately 0.210 in/sec PPV at a distance of 25 feet (FTA 2018). A vibratory roller producing a 0.210 in/sec PPV vibration level could result in vibrations as high as 0.10 in/sec PPV at a distance of 50 feet[2], below the FTA’s building damage threshold for groundborne vibration of 0.2 in/sec PPV for non-engineered timber and masonry buildings (FTA 2018). Therefore, project construction activities would not result in groundborne vibration exceeding the FTA standards at the closest vibration sensitive land uses. Once operational, the proposed project would not be a source of ground-borne vibration or ground-borne noise. Therefore, construction and operation of the

[2] Equipment PPV = Reference PPV * $(25/D)^n$ (in/sec), where Reference PPV is PPV at 25 feet, D is distance from equipment to the receiver in feet, and n = 1.1 (the value related to the attenuation rate through the ground); formula from FTA 2018.

proposed project would not result in excessive ground-borne vibration or ground-borne noise levels. The impact would be less than significant.

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 nearest airport or private airstrip to the project site is the Bakersfield Municipal Airport located approximately 7 miles to the east. The project site is not with the Bakersfield Municipal Airport influence area or any of the airport noise contours (County 2012). Therefore, the proposed project would not expose people residing or working in the project area to excessive noise levels from aircraft or airport operations. There would be no impact.

XIV. POPULATION AND HOUSING

	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?	☐	☐	☐	☒

Environmental Setting

The proposed project is in unincorporated Kern County immediately adjacent to the City of Bakersfield. The proposed project would provide the unincorporated Old River community with water supply from the City of Bakersfield water system.

In 2021, the population of Kern County as a whole was 905,644, with 398,756 of those residents living in the City of Bakersfield (County 2024d). The current population of the Old River community is approximately 78. The County of Kern Draft 2024-2031 Housing Element Update and Kern Council of Government's 2022 Regional Transportation Plan anticipates a projected County population of 1,025,700 in 2030, which is a 13.2 percent increase from the U.S. Census Bureau population count of 905,644 in 2021 (County 2022; County 2024b).

Impact Analysis

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)?

Less Than Significant Impact. Construction of the proposed project is expected to continue for approximately nine months and would likely draw from the existing labor pool in Kern County. The presence of construction workers at the project site would be temporary and would not require workers to relocate their households. Therefore, short-term increased employment of construction workers at the project site would not result in a substantial increase in population in the vicinity of the proposed project. Upon completion of construction, the extension of the Bakersfield water system and associated operational and maintenance would be handled by existing City staff. Construction and operation of the proposed project is not expected to generate an increase in employment that would increase the City or County population.

The Old River community is comprised of mostly single-family residences and some commercial uses, which would be served by the Bakersfield water system under the proposed project. The proposed project would consolidate the existing MWCs into the Bakersfield water system to provide the residents

in the Old River community area with a reliable, uncontaminated water supply. The proposed project would install 29 household connections in the unincorporated community of Old River and would not extend infrastructure beyond the existing households. As discussed above, the County of Kern Draft 2024-2031 Housing Element anticipates a countywide population increase of approximately 13.2 percent by 2030. The Old River area is a small community bordered by land zoned for agricultural use, and therefore it is unlikely that the extension of City water service to this area would induce substantial population growth beyond what has been anticipated in the General Plan. The proposed project would not induce substantial unplanned population growth in the Old River community or surrounding areas, and the impact would be less than significant.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed project would install approximately 6,000 linear feet of 10-inch water main and 1,600 linear feet of 8-inch lateral pipelines with connections to 29 households underground within disturbed areas of Old River Road, SR-119, Par Street, Beam Street, and the front yards of existing residences. Construction staging would occur within the road ROW and would not displace existing people or housing or necessitate the construction replacement housing. No impact would occur.

XV. PUBLIC SERVICES

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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:				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☒	☐
d) Parks?	☐	☐	☒	☐
e) Other public facilities?	☐	☐	☒	☐

Environmental Setting

The proposed project would install a water main along the border of the Bakersfield city limits which would provide water service to the community of Old River in unincorporated Kern County. This community receives public services provided by both Kern County and the City of Bakersfield, discussed in greater detail below.

The project site falls within the fire protection authority of Kern County Fire Department (KCFD). KCFD has 47 full-time fire stations. The nearest KCFD fire station to the project site is Kern County Fire Station 53, located in the Old River community (County 2024e).

The Kern County Sheriff's Office (KCSO) provides police protection services to the unincorporated areas of the County. KCSO headquarters are in the City of Bakersfield and include 15 substations. The nearest KCSO station to the project site is the Lamont Substation, located approximately 11 miles to the east (County 2024f).

Kern County is served by 46 K-12 school districts, and the project site is within the Kern High School District and Lakeside Union School District boundaries. The nearest schools to the project site in these districts are Independence High School, located approximately 350 feet northwest of the northern terminus of the proposed water main, and Donald E. Suburu Elementary School, located approximately 3 miles northeast (County 2024g).

Kern County Parks and Recreation manages eight regional parks and 40 neighborhood parks (County 2024h). The City of Bakersfield Recreation and Parks Department manages 63 public parks (City 2024c). Existing parks within the vicinity of the project site include Greystone Park, located approximately 2.5 miles northwest of the site; Wilderness Park and Tradewinds Park, each located approximately 2.7 miles northeast of the site; Silver Creek Park, located approximately 3 miles northeast of the site; Coral Keys

Park, located approximately 3.3 miles northeast of the site; Stone Creek Park, located approximately 3.4 miles east of the site; Seasons Park, located approximately 3.5 miles northeast of the site; and Tevis Park, located approximately 3.8 miles north of the site.

Impact Analysis

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, to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

a) Fire protection?

b) Police protection?

c) Schools?

d) Parks?

e) Other public facilities?

Less Than Significant Impact. The project site receives fire and police protection services from the Kern County Fire Department and Kern County Sheriff's Office. As discussed in Section 4.XIV, Population and Housing, the proposed extension of the Bakersfield water system services to the Old River community may result in indirect, less than significant impacts to population growth in the community due to the provision of reliable, uncontaminated water services. The proposed project would operate passively underground and would not require the installation of aboveground structures that would require fire or police protection during operation. However, there may be potential for a minimal increase in fire or police protection during the nine-month construction period due to increased construction personnel and risk for accidents on-site. These potential public service demands would be minimal and could be served by the existing staff of the KCFD and KCSO.

The project site is served by the Kern High School District and Lakeside Union School District. As discussed in Section 4.XIV, Population and Housing, the proposed extension of Bakersfield water system services to the Old River community area may result in indirect, less than significant impacts to population growth in the community due to the provision of reliable, uncontaminated water services. However, the potential for population growth would be minimal and would not overburden the surrounding school districts or schools.

The project site is located within four miles of eight public parks managed by the City of Bakersfield Recreation and Parks Department which are all located roughly north and east of the site within Bakersfield city limits. As discussed in Section 4.XIV, Population and Housing, the proposed extension of Bakersfield water system services to the Old River community area may result in indirect, less than significant impacts to population growth in the community due to the provision of reliable, uncontaminated water services. However, the potential for population growth would be minimal and would not overburden the existing park facilities.

As detailed above and in Section 4.XIV, Population and Housing, the proposed project may indirectly induce less than significant impacts to population growth in the Old River community area due to the provision of reliable, uncontaminated water services from the proposed extension to the Bakersfield water system. This potential for less than significant increases in the population of the Old River community area may result in minor demand increases for the aforementioned public services, but not beyond their existing capacity. Therefore, impacts to public services would be less than significant.

XVI. RECREATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) 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?	☐	☐	☐	☒

Environmental Setting

Kern County Parks and Recreation and the City of Bakersfield Recreation and Parks Department manage regional and community parks in the vicinity of the proposed project. According to the 2010 Kern County Parks and Recreation Master Plan, Kern County contains 4,726 acres of park land with 4,282 acres of regional parks and 389 acres of local neighborhood parks, both leased and owned by the County (County 2010). As described in Section 4.XV, Public Services, the project site is located within four miles of eight neighborhood parks, including: Greystone Park, located approximately 2.5 miles northwest of the site; Wilderness Park and Tradewinds Park, each located approximately 2.7 miles northeast of the site; Silver Creek Park, located approximately 3 miles northeast of the site; Coral Keys Park, located approximately 3.3 miles northeast of the site; Stone Creek Park, located approximately 3.4 miles east of the site; Seasons Park, located approximately 3.5 miles northeast of the site; and Tevis Park, located approximately 3.8 miles north of the site.

Impact Analysis

a) 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?

Less Than Significant Impact. As discussed in Section 4.XIV, Population and Housing, proposed project construction would be temporary and is not expected to require the relocation of construction workers to the project site area. Once constructed, the proposed project would provide residents in the Old River community with a reliable, uncontaminated water supply. The project area is adequately served by parks in the vicinity, and construction of the proposed project would not result in a substantial increase in the use of the existing parks such that deterioration would occur. The impact would be less than significant.

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The proposed project would include the extension of a water main from the Old River community to the existing water main in the City of Bakersfield and would not construct any recreational facilities. Additionally, the proposed project would not substantially induce population growth that would require the construction or expansion of park or recreational facilities, as discussed above, such that an adverse physical effect on the environment would occur. No impact would occur.

XVII. TRANSPORTATION

		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 (e.g., farm equipment)?	☐	☐	☐	☒
d)	Result in inadequate emergency access?	☐	☐	☒	☐

Environmental Setting

The following roadways provide primary circulation within the vicinity of the proposed project:

- **Old River Road** is a major north-south 2-lane arterial roadway that traverses unincorporated Kern County and the City of Bakersfield from SR-38 (Stockdale Highway) in the City of Bakersfield to Highway 166 (Maricopa Highway).
- **SR-119 (Taft Highway)** is an east-west 2-lane arterial highway that traverses unincorporated Kern County and the City of Bakersfield from SR-33 in the City of Taft to SR-99 in the City of Bakersfield.
- **Par Street** is a local north-south residential roadway that traverses the unincorporated Old River community from SR-119 to Beam Street.
- **Beam Street** is a local east-west residential roadway that traverses the unincorporated Old River community from Old River Road to Par Street.

According to the current transit routes and schedules posted by Kern Regional Transit, the proposed project would not be located along an existing bus route and the roadways discussed above that are expected to be used during construction and operation of the proposed project do not have bus stops (County 2024i). Passenger rail service in Kern County is provided from Bakersfield north to Sacramento via Amtrak's San Joaquin Train Service; however, a direct route from the project site or immediate vicinity is not available (Amtrak 2024).

The Kern Council of Governments 2022 Regional Transportation Plan defines the following bikeway and pedestrian facilities in the Kern County (County 2022):

- **Class I** facilities are paved right-of-way for exclusive use by bicyclists, pedestrians, and those using non-motorized modes of travel.

- **Class II** bike lanes are defined by pavement striping and signage used to allocate a portion of a roadway for bicycle travel. Several jurisdictions have variations on Class II facilities, which provide optional striping scenarios to allow on-street parking.

- **Class III** facilities include sign markings for bicycle routes. There are no pavement markings. The County also has a Class III variation that provides a 4-foot delineated shoulder and bicycle route signage in rural areas.

The Kern County Interactive County Map identifies existing and future bikeways within and in the vicinity of the project site (County 2024b). No existing Class I, II, or III bikeways are identified within the project site; however, a series of future Class II bikeways are identified along SR-119, Old River Road, and other roadways in the vicinity of the project site. According to the Kern County Public Works "Walk Kern" project, no existing pedestrian facilities are identified or proposed for improvement in the vicinity of the project site (County 2024j).

Impact Analysis

a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant Impact with Mitigation Incorporated. The proposed 10-inch water main would run approximately one mile along Old River Road from the intersection at Old River Road and McCutchen Road in the City of Bakersfield to the intersection of Old River Road and SR-119 in the unincorporated Old River community. From there, the water main would run approximately 500 feet east along SR-119 to the intersection of SR-119 and Par Street and would then run approximately 800 feet south along Par Street to the intersection at Par Street and Beam Street. Sixteen household connections would branch off from Par Street to the east and west to the existing residences. The proposed water main would run approximately 450 feet west along Beam Street from the intersection at Beam Street and Old River Road. Thirteen household connections would branch off from Beam Street to the north and south to the existing residences. Construction of the pipeline would take place within the front yards of existing residences and within disturbed portions of Old River Road, SR-119, Par Street, and Beam Street, which may result in temporary disturbance to traffic or lane closures along these roads due to interference from construction vehicles.

The proposed project is not located in the immediate vicinity of existing public transit, bikeways, or pedestrian facilities. Construction of the proposed project would not interfere with local circulation patterns because construction would be taking place along the shoulder of the roads. Any roadway interference during construction would be short-term and temporary. Full closure of these roads is not anticipated, but individual lanes may be temporarily closed during construction. Mitigation Measure HAZ-1 would require the development and implementation of a Traffic Management Plan which would manage any changes to traffic patterns during construction activities. After construction, the roads would be returned to their pre-project conditions. Operations of the proposed project would not affect the local street network because all infrastructure related to the proposed project would be underground, with the exception of the three fire hydrants which would not interfere with local roads.

Therefore, the proposed project would not interfere with local policies or plans addressing circulation, and the impact would be less than significant with mitigation incorporated.

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

Less Than Significant Impact. According to the Governor's Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA, small land use projects that would generate or attract fewer than 110 trips per day generally may be assumed to cause a less than significant impact related to vehicle miles traveled (VMT) (OPR 2018). Operation of the proposed project would occur passively underground and may require occasional trips by City employees for maintenance activities; however, these trips are expected to occur on an as-needed-basis and would not generate substantial VMT. Installation of the pipeline would require the excavation and backfill of approximately 4,000 cubic yards of soil, and no soil or other construction waste is expected to be transported off-site. Proposed project construction would require heavy construction equipment that would be transported to the project site, and it is expected that the majority of this equipment would remain on-site until construction is completed. Total project construction time is estimated to be nine months. Because the trips generated by the proposed project during construction and operation of the proposed project would be less than the 110 trips per day threshold established by OPR, the impact related to VMT would be less than significant.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The proposed project would include the installation of water mains and household connections underground and does not propose the construction of new roadways or reconfiguration of existing roadways. Therefore, the project would not increase hazards due to a geometric design feature or incompatible use. No impact would occur.

d) Result in inadequate emergency access?

Less Than Significant Impact. Proposed project construction is anticipated to continue for approximately nine months and would require the use of heavy construction vehicle equipment including excavators, trenchers, compactors, and pipe layers. As discussed in question a), construction of the pipeline would take place within disturbed portions of Old River Road, SR-119, Par Street, and Beam Street, which may result in less than significant impacts due to temporary disturbance to traffic or lane closures along these roads from construction vehicle interference. At the conclusion of construction, the roads would return to their pre-project conditions and would accommodate emergency vehicle access. Operation of the project would not interfere with the local street network because all infrastructure would be located underground, with the exception of the three proposed fire hydrants, which would be located in the road shoulders and would not interfere with circulation. Impacts would be less than significant.

XVIII. TRIBAL CULTURAL RESOURCES

	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 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:				
i. 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	☐	☒	☐	☐
ii. 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.	☐	☒	☐	☐

Environmental Setting

According to PRC Section 21074, a resource is a tribal cultural resource if it is either:

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; or
    b. Included in a local register of historical resources as defined in PRC Section 5020.1(k).

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 PRC Section 5024.1(c). In applying the criteria set forth in PRC Section 5024.1(c), the lead agency shall consider the significance of the resource to a California Native American tribe.

3) A cultural landscape that meets the criteria of PRC Section 21074(a) to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

4) A historical resource described in PRC Section 21084.1, a unique archaeological resource as defined in PRC Section 21083.2(g), or a "non-unique archaeological resource", as defined in PRC Section 21083.2(h), if it conforms with the criteria of PRC Section 21074(a).

In accordance with PRC Section 21084.2, lead agencies are required to consider Tribal Cultural Resources (TCR) including a site feature, place, cultural landscape, sacred place or object, of cultural value to the tribe and is listed on the California Register of Historic Resources (CRHR) or a local register, or the Lead agency, at its discretion, chooses to treat resources as such.

In accordance with PRC Section 21080.3.1(b)(1), the following tribal contacts were informed by the City of the proposed project through formal notification on August 1, 2024:

- James Rambeau, Senior Chairperson; Big Pine Paiute Tribe of the Owens Valley
- Sally Manning, Environmental Director; Big Pine Paiute Tribe of the Owens Valley
- Danelle Gutierrez, Tribal Historic Preservation Officer; Big Pine Paiute Tribe of the Owens Valley
- Julio Quair, Chairperson; Chumash Council of Bakersfield
- Mariza Sullivan, Chairperson; Coastal Band of the Chumash Nation
- Jairo F. Avila, Tribal Historic Preservation Officer; Fernandeño Tataviam Band of Mission Indians
- Julie Turner, Secretary; Kern Valley Indian Community
- Robert Robinson, Chairperson; Kern Valley Indian Community
- Brandy Kendricks, Kern Valley Indian Community
- Delia Dominguez, Chairperson; Kitanemuk & Yowlumne Teion Indians
- Donna Yocum, Chairperson; San Fernando Band of Mission Indians
- Jessica Mauck, Director – CRM Department for the San Manuel Band of Mission Indians
- Leo Sisco, Chairperson; Santa Rosa Rancheria Tachi Yokut Tribe
- Octavio Escobedo III, Chairperson; Teion Indian Tribe
- Colin Rambo, CRM Tech; Teion Indian Tribe
- Robert L. Gomez, Jr., Tribal Chairperson; Tubatulabals of Kern Valley
- Neil Pevron, Chairperson; Tule River Indian Tribe
- Kenneth Woodrow, Chairperson; Wuksache Indian Tribe/ Eshom Valley Band
- Mona Olivas Tucker, Chairwoman; yak tityu tityu yak tiłhini – Northern Chumash Tribe

As of the date of this report, the City has received responses from two tribes, neither of which requested consultation. No additional responses or requests for additional tribal coordination have been received.

Regulatory Framework

Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies apply to Tribal Cultural Resources.

State Laws, Regulations, and Policies

Assembly Bill 52

AB 52, which was approved in September 2014 and effective on July 1, 2015, requires that CEQA lead agencies consult with California Native American tribes that are traditionally and culturally affiliated with the geographic area of a proposed project, if so requested by the tribe. The bill, chaptered in CEQA Section 21084.2, also specifies that a project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment.

Defined in Section 21074(a) of the Public Resources Code, TCRs are:

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; or
    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.

TCRs are further defined under Section 21074 as follows:

- A cultural landscape that meets the criteria of subdivision (a) is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and

- 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 may also be a TCR if it conforms with the criteria of subdivision (a).

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to newly chaptered Section 21080.3.2, or according to Section 21084.3. Section 21084.3 identifies mitigation measures that include avoidance and preservation of TCRs and treating

TRCs with culturally appropriate dignity, considering the tribal cultural values and meaning of the resource.

Impact Analysis

a) 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:

   i. 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)?

   ii. 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?

Less Than Significant with Mitigation Incorporated. The City of Bakersfield sent letters inviting tribes to consultation under AB 52 on August 1, 2024. As of the date of this report there has been no response. While there is no record of tribal cultural resources in the vicinity of or on the project site, there is still potential for discovery as there would be ground -disturbing activities. With the implementation of Mitigation Measures CUL-1, Accidental Discovery of Cultural Resources, and CUL-2, Accidental Discovery of Human Remains, impacts would be less than significant for impacts ai) and aii).

XIX. UTILITIES AND SERVICE SYSTEMS

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:					
a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation 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?	☐	☐	☒	☐

Environmental Setting

Water

The project area is within the South Valley Floor Watershed with Region 5 – Tulare Lake Hydrologic Basin (CVRWQCB 2018). The SWRCB publishes updates to the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) to improve water quality and maintain beneficial uses in the drainage area of the San Joaquin Valley south of the San Joaquin River. The Basin Plan describes water quality concerns for the area that include agriculture, forestry, urban land uses, and stormwater runoff (CVRWQCB 2018).

Old River MWC and South Kern MWC currently provide water service to residential and commercial customers in the project area. Each MWC operates using a single well, located within their respective service areas, which provides water to adjacent parcels and nearby customers.

Old River MWC provides water to 46 residents via 14 connections in its 10.7-acre service area. Water is provided by a single well, located within the service area. The Old River MWC well was constructed in 1962 and has a ten-inch diameter steel casing perforated from 189 to 291 feet bgs. Water delivered by the Old River MWC system contains uranium levels that exceed the MCL of 30 µg/L established by State and federal regulations. Water from this well also exceeds the 1, 2, 3-TCP MCL of 0.005 µg/L. The Old

River MWC well lacks source reliability and storage capacity to serve the customers. The MWC also lacks technical, managerial, and financial capacity.

South Kern MWC provides water to 32 residents via 15 service connections in its 9.7-acre service area. Water is provided by a single well in the northeast corner of the service area. The South Kern MWC well was constructed in 1959 and has a ten-inch diameter steel casing perforated from 230 to 337 feet bgs. The well currently produces water that exceeds the uranium MCL of 30 µg/L. Water from this well also exceeds the 1, 2, 3-TCP MCL of 0.005 µg/L. The South Kern Old River MWC well also lacks source reliability and storage capacity to serve the customers. The MWC also lacks technical, managerial, and financial capacity.

Wastewater or Stormwater

Sewage disposal is handled by both public and private agencies and by private individual systems. Disposal of waste by public agencies is through County Service Areas, Community Services Districts and Public Utility Districts. Individual private disposal generally occurs through a septic tank and leach line or cesspool system (County 2004).

The County also typically requires developing sites to provide for their own on-site retention or show that existing facilities have sufficient capacity to carry the additional runoff (County 2004).

Electrical and Natural Gas

The project site is serviced by PG&E for electricity and is serviced by Southern California Gas for gas.

Impact Analysis

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact with Mitigation Incorporated. The proposed project would install approximately 6,000linear feet of a new 10-inch water main, 1,600 linear feet of 8-inch lateral pipelines, and 29 household connections. Three fire hydrants would also be installed, and two wells would be abandoned as part of the proposed project. The proposed project would not require or result in the relocation or construction of new or expanded wastewater treatment or storm water drainage, electric power, natural gas, or telecommunication facilities. However, the project does consist of the construction of new water facilities. The potential environmental effects of the proposed water main pipelines were evaluated in this Initial Study, and it was found that there would be potential impacts related to biological resources, cultural resources, geology and soils, hazards, tribal cultural resources which would be mitigated to a less than significant level with the implementation of mitigation measures BIO-1, CUL-1, CUL-2, GEO-1, and HAZ-1. No expansion of water facilities would be required beyond what has been evaluated in this Initial Study. Therefore, the impact would be less than significant with mitigation incorporated.

b) 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. The proposed project would install approximately 6,000 linear feet of a new 10-inch water main, 1,600 linear feet of 8-inch lateral pipelines, and 29 household connections. Three fire hydrants would also be installed, and two wells would be abandoned as part of the proposed project. Based on water supply information provided by the City and predicted MWC demands, the City has sufficient capacity to service the MWCs. Therefore, sufficient water supplies would be available to serve the proposed project during normal, dry, and multiple dry years. The impact would be less than significant.

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?

No Impact. The proposed project would install approximately 6,000 linear feet of a new 10-inch water main, 1,600 linear feet of 8-inch lateral pipelines, and 29 household connections. Three fire hydrants would also be installed, and two wells would be abandoned as part of the proposed project. The project site is not served by a wastewater treatment provider and the proposed project would not generate wastewater that requires treatment. Therefore, no impact would occur.

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?

Less Than Significant Impact. The proposed project would not create substantial amounts of solid waste, and as such would not exceed the capacity of local infrastructure. Minimal waste would be generated during construction and would likely be disposed of at the Bena Landfill. The Bena Landfill is permitted through 2046 and can receive 4,500 tons/day (CalRecycle 2024). Additionally, the proposed project would comply with federal, State, and local management and reduction statues and regulations related to solid waste. Therefore, the impact would be less than significant.

XX. WILDFIRE

	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?	☐	☐	☒	☐

Environmental Setting

To extend service from the City of Bakersfield's water system to the areas currently served by Old River MWC and South Kern MWC, the proposed project would construct approximately 6,000 linear feet of new 10-inch water main and 1,600 linear feet of 8-inch lateral pipelines. The water service area of the proposed project is the unincorporated community of Old River, located at the southeast corner of the intersection of Old River Road and SR-119. The community is surrounded by agricultural land uses to the west, south, and east, with some commercial land uses to the north along SR-119. According to California Department Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zone Map, the project site is located within a Local Responsibility Area (LRA; CAL FIRE 2024). The project site is not located on or near the Fire Hazard Severity Zone (FHSZ; CAL FIRE 2024). The nearest fire department to the project site is the Kern County Fire Station 53, located within the community of Old River.

Impact Analysis

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact with Mitigation Incorporated. Operation of the proposed project would occur passively underground and would not have the potential to interfere with emergency response or evacuation. Construction of the proposed project may temporarily interfere with roadway traffic, which may have the potential to affect emergency response or evacuation plans. Adherence to conditions of Mitigation Measure HAZ-1, which would require the preparation and adoption of a traffic demand

management plan, would ensure the proposed project would not interfere with emergency response or evacuation plans. Therefore, impacts would be less than significant with mitigation incorporated.

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?

Less Than Significant Impact. As described above, the proposed project site is not located in a FHSZ or CAL FIRE State Responsibility Area. Operation of the proposed project would not result in an exacerbation of wildfire risk as it would operate passively underground. Construction of the proposed project would take place along the existing shoulders of Old River Road and SR-119, which are generally barren and pose a minimal risk of wildfire. Therefore, impacts would be less than significant.

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?

Less Than Significant Impact. The proposed project would include the installation of water infrastructure that would operate passively underground and would not require maintenance that would exacerbate fire risk. Temporary and ongoing impacts to the environment related that would occur as a result of this infrastructure installation are analyzed throughout this Initial Study. Impacts would be less than significant**.**

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?

Less Than Significant Impact. The proposed project would not create habitable or aboveground structures that could be exposed to significant wildfire risks and would not alter drainage patterns on the project site. The project site is generally flat and the proposed project is not anticipated to result in risks to nearby people or structures, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Impacts would be less than significant.

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?	☐	☒	☐	☐
c)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

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 proposed project has the potential to result in impacts to Swainson's hawk; however, implementation of Mitigation Measure BIO-1 would reduce these impacts to a less than significant level. No special status plant species would be impacted by project implementation. The proposed project also has the potential to impact cultural and tribal cultural resources during construction. Implementation of Mitigation Measures CUL-1 and CUL-2 would ensure these impacts are reduced to a less than significant level. Therefore, the proposed project would not substantially degrade the environment, decrease the number or habitat of special status plant or animal species, or eliminate major periods of California history. Impacts would be less than significant with mitigation incorporated.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when

viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?

Less Than Significant with Mitigation Incorporated. CEQA Guidelines Section 15130 requires a discussion of the cumulative impacts of a project when the project's incremental effect is "cumulatively considerable," meaning that the project's incremental effects are considerable when viewed in connection with the effects of past, current, and probable future projects.

The majority of the potential impacts related to the proposed project could occur during construction. However, all impacts related to construction are temporary and short-term and would not cause a significant impact, as detailed in this Initial Study. Key areas of concern addressed in this Initial Study include biological resources, cultural resources, geology and soils, hydrology and water quality, hazards and hazardous materials, tribal cultural resources, and utilities and service systems. However, impacts relating to these key areas of concern would be mitigated to a less than significant level. Therefore, the proposed project would not have a cumulatively considerable impact, and no additional mitigation is required.

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 Incorporated. The proposed project would not include any construction activities or operational components that would negatively affect any persons in the vicinity. In addition, all resource topics have been analyzed in accordance with the State CEQA Guidelines or associated thresholds and found to pose no impact, a less than significant impact, or a less than significant impact with mitigation incorporated. As discussed in Section 4.III, Air Quality, no violations of air quality thresholds would occur and no significant impacts to sensitive receptors related to pollutants would occur. As discussed in Section 4.IX, Hazards and Hazardous Materials, of this Initial Study, there are no concerns from past activities at the project site and no hazardous materials and/or wastes would be generated by the proposed project. As detailed in Section 4.XIII, Noise, the proposed project would not generate excessive noise that would conflict with local noise ordinances and cause disturbances to local residents. During construction, temporarily altered traffic conditions may occur; however, implementation of a TMP as described in mitigation measure HAZ-1 would ensure emergency access and evacuation routes are maintained. Consequently, the proposed project would not result in any environmental effects that would cause substantial adverse effects on human beings directly or indirectly.

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6.0 PREPARERS

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Appendix A

Air Quality and Greenhouse Gas Emissions Letter Report

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July 22, 2024 02632.00014.001

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Subject: Consolidation of South Kern and Old River Mutual Water Companies into the City of Bakersfield Water System Project Air Quality And Greenhouse Gas Emissions Analysis

Dear Mr. Varadaraj:

HELIX Environmental Planning, Inc. (HELIX) has assessed the air quality and greenhouse gas (GHG) emissions impacts associated with the construction and operation of the proposed Consolidation of South Kern and Old River Municipal Water Companies into Bakersfield Water System Project (project) located in Kern County (County), southwest of the City of Bakersfield. Analysis within this report was prepared to support impact analysis pursuant to the California Environmental Quality Act (CEQA; Public Resources Code Sections 21000 et seq.), CEQA Guidelines (Title 14, Section 15000 et seq. of the California Code of Regulations).

PROJECT LOCATION

The project is located in Kern County (County) southwest of the City of Bakersfield (City). Old River Mutual Water Company (MWC) currently serves an approximately 10.7-acre area at the southeast corner of Old River Road and State Route (SR) -119. South Kern MWC serves an approximately 9.7-acre area east of Old River Road and immediately south of the Old River MWC service area. Both service areas are located in unincorporated Kern County, just outside of City limits. See Figure 1 for a regional location map and see Figure 2 for the Mutual Water Company site locations (Note: All Figures are located in Attachment A).

PROJECT BACKGROUND

Old River MWC and South Kern MWC currently provide water service to residential and commercial customers in the project area. Each MWC operates using a single well, located within their respective service areas, which provides water to adjacent parcels and nearby customers. Old River MWC provides water to 46 residents via 14 connections in its 10.7-acre service area. Water is provided by a single well, located within the service area. The Old River MWC well was constructed in 1962 and has a 10-inch diameter steel casing perforated from 189 to 291 feet below ground surface (bgs). Water delivered

by the Old River MWC system contains uranium levels that exceed the maximum contaminant level (MCL) of 30 micrograms per liter (µg/L) established by state and federal regulations. Water from this well also exceeds the 1, 2, 3-trichloropropane (TCP) MCL of 0.005 µg/L. The Old River MWC well lacks source reliability and storage capacity to serve the customers. The MWC also lacks technical, managerial, and financial capacity.

South Kern MWC provides water to 32 residents via 15 service connections in its 9.7-acre service area. Water is provided by a single well in the northeast corner of the service area. The South Kern MWC well was constructed in 1959 and has a ten-inch diameter steel casing perforated from 230 to 337 feet bgs. The well currently produces water that exceeds the uranium MCL of 30 µg/L. Water from this well also exceeds the 1, 2, 3-TCP MCL of 0.005 µg/L. The South Kern MWC well also lacks source reliability and storage capacity to serve the customers. The MWC also lacks technical, managerial, and financial capacity.

The proposed project would abandon the Old River MWC well and the South Kern MWC well and extend the City of Bakersfield's water system to serve the areas previously served by these two MWCs, thereby consolidating both MWCs into the City of Bakersfield's water system. Based on water supply information provided by the City and predicted MWC demands, the City has sufficient capacity to service the MWCs. As the MWCs would be consolidated into the City's water system, the City of Bakersfield would be the Lead Agency, even though the project site is located just outside the City limits.

PROJECT DESCRIPTION

Old River MWC and South Kern MWC provide water service to residential and commercial customers. Each MWC operates using a single well, and both wells produce water that exceeds allowable levels of uranium and 1, 2, 3-TCP. Therefore, the proposed project would abandon the two wells and extend the City of Bakersfield's water system to consolidate both MWCs into the City of Bakersfield's water system.

In order to extend service from the City of Bakersfield's water system to the areas currently served by Old River MWC and South Kern MWC, the project would construct approximately 6,000 linear feet of new 10-inch water main, and 1,600 linear feet of 8-inch lateral pipelines with connections to 29 households. Three fire hydrants would also be installed for use in case of emergency. The point of connection to the City of Bakersfield's water system would be the existing 16-inch diameter water main at McCutchen Road and Old River Road. See Figure 3 for the site plan (Attachment A). Once the connection to the City of Bakersfield water system is complete, the Old River MWC and the South Kern MWC wells would be abandoned and no longer provide water to the community.

AIR QUALITY/GREENHOUSE GAS EMISSIONS ANALYSIS

The proposed project is located in unincorporated Kern County, which lies within the San Joaquin Valley Air Basin (SJVAB). Air quality in the SJVAB is regulated by the U.S. Environmental Protection Agency (USEPA) at the federal level, by the California Air Resources Board (CARB) at the state level, and by the San Joaquin Valley Air Pollution Control District (SJVAPCD) at the regional level.

The SJVAB comprises all or part of eight counties: San Joaquin, Stanislaus, Fresno, Merced, Madera, Kings, Tulare, and Kern. The distinctive climate of the SJVAB is determined by its terrain and geographic location. The SJVAB is the southern half California's Central Valley and is 250 miles long and averages 35 miles wide. The SJVAB is bounded by the Sierra Nevada Mountains to the east, the Coast Ranges

to the west, the Tehachapi Mountains to the south, and is open to the Sacramento Valley and San Francisco Bay Area to the north.

The SJVAB is in a Mediterranean climate zone which is characterized by typically hot and dry summers and sparse rainfall mainly during the winter. Especially in summer, winds in the SJVAB most frequently blow from the northwesterly direction. The region's topographic features restrict air movement and channel the air mass towards the southeastern end of the basin. A secondary but significant summer wind pattern is from the southeasterly direction and can be associated with nighttime drainage winds from the Sierra Nevada Mountains, and prefrontal conditions. Many days in the winter are marked by stagnation events where winds are very weak. Transport of pollutants during winter can be very limited. The vertical dispersion of air pollutants in the SJVAB can be limited by persistent temperature inversions. Temperature inversions that occur on the summer days are usually encountered 2,000 to 2,500 feet above the valley floor. In winter months, overnight inversions occur 500 to 1,500 feet above the valley floor. The mountains surrounding the basin are mostly above the typical summer height of inversion layers, restricting dispersion of pollutants (SJVAPCD 2015).

Solar radiation and temperature are particularly important in the chemistry of ozone formation. The SJVAB averages over 260 sunny days per year. Generally, the higher the temperature, the more ozone formed, since reaction rates increase with temperature. The 1937 through 2016 annual average maximum daily temperature as measured at the Bakersfield Airport climatic station, approximately 7 miles northeast of the project site, is 77.8 degrees Fahrenheit (°F). The highest monthly average maximum daily temperature (98.6°F) occurs in July, and the lowest monthly average minimum daily temperature (38.5°F) occurs in December and January. The average annual precipitation is approximately 6.2 inches (Western Regional Climate Center 2016).

REGULATORY SETTING

Air Quality

Criteria Pollutants

Criteria pollutants are defined and regulated by State and federal law as a risk to the health and welfare of the public and are categorized into primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources, including carbon monoxide (CO); reactive organic gases ([ROGs] also known as volatile organic compounds [VOCs]); [1] nitrogen oxides (NO_X); sulfur dioxide (SO_2); coarse particulate matter (PM_{10}); fine particulate matter ($PM_{2.5}$); and lead. Of these primary pollutants, CO, SO_2, PM_{10}, $PM_{2.5}$, and lead are criteria pollutants. ROGs and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. The principal secondary criteria pollutants are ozone and nitrogen dioxide (NO_2). In addition to being primary pollutants, PM_{10} and $PM_{2.5}$ can be secondary pollutants formed by chemical reactions in the atmosphere.

[1] CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

Ambient air quality is described in terms of compliance with State and national standards, and the levels of air pollutant concentrations considered safe, to protect the public health and welfare. These standards are designed to protect people most sensitive to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. The USEPA has established national ambient air quality standards (NAAQS) for criteria pollutants. As permitted by the Clean Air Act (CAA), California has adopted the more stringent California ambient air quality standards (CAAQS) and expanded the number of regulated air pollutant constituents.

CARB is required to designate areas of the State as attainment, nonattainment, or unclassified for any State standard. An "attainment" designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A "nonattainment" designation indicates that a pollutant concentration violated the standard at least once.

The project site is located in unincorporated Kern County that lies within the SJVAB and, as such, is in an area designated as "nonattainment" for certain pollutants that are regulated under the CAA. Table 1, *San Joaquin Valley Air Basin – Attainment Status,* lists the federal and State attainment status of the SJVAB (including Kern County and the project site) for the NAAQS and CAAQS. As shown in Table 1, the SJVAB is designated as attainment for PM_{10}; attainment/unclassified for CO, NO_2, SO_2; extreme nonattainment for 8-hour ozone; and nonattainment for $PM_{2.5}$ with respect to the NAAQS. The SJVAB is designated as attainment for CO, NO_2, SO_2, and lead; severe nonattainment for 1-hour ozone; and as nonattainment for 8-hour ozone, $PM_{2.5}$, and PM_{10} with respect to the CAAQS (SJVAPCD 2024a).

Table 1
SAN JOAQUIN VALLEY AIR BASIN – ATTAINMENT STATUS

Pollutant	Federal Standards	State Standards
Ozone – One hour	No Federal Standard	Nonattainment/Severe
Ozone – Eight hour	Nonattainment/Extreme	Nonattainment
PM_{10}	Attainment	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment/Unclassified	Attainment/Unclassified
NO_2	Attainment/Unclassified	Attainment
SO_2	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Unclassified	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Source: SJVAPCD 2024a

Toxic Air Contaminants

The Health and Safety Code (§39655, subd. (a).) defines a toxic air contaminant (TAC) as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal CAA (42 United States Code Section 7412[b]) is a TAC.

Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health.

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is referred to as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns in diameter (CARB 2024). Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, CARB identified DPM as a TAC based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a notable effect on California's population—it is estimated that about 70 percent of total known cancer risk related to air toxins in California is attributable to DPM (CARB 2024).

San Joaquin Valley Air Pollution Control District

The proposed project is located in unincorporated Kern County, which lies within the SJVAB. Air quality in the SJVAB is regulated by the USEPA at the federal level, by the CARB at the state level, and by SJVAPCD at the regional level. As a regional agency, the SJVAPCD works directly with local governments and cooperates actively with all federal and State government agencies. The SJVAPCD develops rules and regulations; establishes permitting requirements for stationary sources; inspects emissions sources; and enforces such measures through educational programs or fines, when necessary.

Air Quality Plans

The SJVAPCD has developed plans to attain State and federal standards for ozone and particulate matter. The SJVAPCD's air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control methods have worked, and to show how air pollution will be reduced. The plans also use computer modeling to estimate future levels of pollution and make sure that the San Joaquin Valley will meet air quality goals.

1-Hour Ozone Plan – Although the USEPA revoked its 1979 1-hour ozone standard in June 2005, many planning requirements remain in place, and the SJVAB must still attain this standard before it can rescind CAA Section 185 fees. The SJVAPCD's *2013 Plan for the Revoked 1-hour Ozone Standard* demonstrated attainment of the 1-hour ozone standard by 2017 (SJVAPCD 2015). On July 18, 2016, the USEPA published in the Federal Register the final action to determine that the SJVAB has attained the 1-hour ozone standard (USEPA 2016).On June 15, 2023, the SJVAPCD adopted the *2023 Maintenance Plan and Redesignation Request for the Revoked 1-hour Ozone Standard* that includes provisions for a maintenance plan and requirements for meeting all five criteria of Section 107(d)(3)(E) of the CAA (SJVAPCD 2023).

8-Hour Ozone Plan – The SJVAPCD's *2007 Ozone Plan* demonstrates attainment of the 1997 NAAQS 8-hour ozone standard by 2023. The USEPA approved the 2007 Ozone Plan effective April 30, 2012. (SJVAPCD 2015). In June 2016, the SJVAPCD adopted the *2016 Plan for the 2008 8-Hour Ozone Standard* to map strategies for attainment of the updated NAAQS 8-hour ozone standard (SJVAPCD 2016a). The SJVAPCD adopted the *2022 Plan for the 2015 8-Hour Ozone Standard* in December 2022. This Plan satisfies Clean Air Act requirements and ensures expeditious attainment of the 70 parts per billion

8-hour ozone standard (SJVAPCD 2022). On April 24, 2024, the SJVAPCD adopted the *Ozone Contingency State Implementation Plan Revision for the 2008 and 2015 8-Hour Ozone Standards* to address the contingency provisions for the 2008 and 2015 8-hour ozone standards (SJVAPCD 2024b).

PM_{10} Plan – Based on PM_{10} measurements from 2003-2006, USEPA found that the SJVAB has reached Federal PM_{10} standards. On September 21, 2007, the SJVAPCD adopted the *2007 PM10 Maintenance Plan and Request for Redesignation*. On September 25, 2008, the SJVAB was redesignated to attainment/maintenance (SJVAPCD 2015).

$PM_{2.5}$ Plan – The SJVAPCD's *2008 $PM_{2.5}$ Plan* demonstrated 2014 attainment of USEPA's first $PM_{2.5}$ standard, set in 1997. The USEPA lowered the $PM_{2.5}$ standard in 2006, and the SJVAPCD's *2012 $PM_{2.5}$ Plan* showed attainment of this standard by 2019, with the majority of the SJVAB seeing attainment much sooner (SJVAPCD 2015). The SJVAPCD adopted the *2016 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard* on September 15, 2016. This plan addresses the updated NAAQS 2012 annual $PM_{2.5}$ standard and includes an attainment impracticability demonstration and request for reclassification of the SJVAB from moderate nonattainment to serious nonattainment (SJVAPCD 2016b). These plans came together when the SJVAPCD adopted the *2018 Plan for the 1997, 2006, and 2012 $PM_{2.5}$ Standards* on November 15, 2018. This plan addresses the federal standards for each of those years (SJVAPCD 2018).

The SJVAPCD adopted the *2024 Plan for the 2012 Annual $PM_{2.5}$ Standard* on June 20, 2024, to fulfill the remaining CAA requirements, including the final modeling analysis, attainment strategy and emission reduction commitments, reasonable further progress/quantitative milestones, and contingency measures. This Plan demonstrates expeditious attainment of the 2012 $PM_{2.5}$ standard by 2030 (SJVAPCD 2024c).

Rules and Regulations

The following rules promulgated by the SJVAPCD would be applicable to construction of the proposed project (SJVAPCD 2024d):

Rule 4101 Visible Emissions: prohibit the emissions of visible air contaminants to the atmosphere.

Rule 4102 Nuisance: protect the health and safety of the public.

Rule 8021 Construction, Demolition, Excavation, Extraction, and other Earth Moving Activities: limit fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities.

Greenhouse Gases

Global climate change refers to changes in average climatic conditions on Earth including temperature, wind patterns, precipitation, and storms. Global temperatures are moderated by atmospheric gases. These gases are commonly referred to as GHGs because they function like a greenhouse by letting sunlight in but preventing heat from escaping, thus warming the Earth's atmosphere.

GHGs are emitted by natural processes and human (anthropogenic) activities. Anthropogenic GHG emissions are primarily associated with: (1) the burning of fossil fuels during motorized transport, electricity generation, natural gas consumption, industrial activity, manufacturing, and other activities; (2) deforestation; (3) agricultural activity; and (4) solid waste decomposition.

The GHGs defined under California's Assembly Bill (AB) 32, described below, include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. Estimates of GHG emissions are commonly presented in carbon dioxide equivalents (CO_2e), which weigh each gas by its global warming potential (GWP). Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. GHG emissions quantities in this analysis are presented in metric tons (MT) of CO_2e. For consistency with United Nations Standards, modeling, and reporting of GHGs in California and the U.S. use the GWPs defined in the Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report (IPCC 2007): CO_2 – 1; CH_4 – 25; N_2O – 298.

Greenhouse Gas Reduction Regulations and Plans

The primary GHG reduction regulatory legislation and plans (applicable to the project) at the State and levels are described below. Implementation of California's GHG reduction mandates are primarily under the authority of CARB at the State level, and under the authority of the SJVAPCD at the regional level.

Executive Order S-3-05: On June 1, 2005, Executive Order (EO) S-3-05 proclaimed that California is vulnerable to climate change impacts. It declared that increased temperatures could reduce snowpack in the Sierra Nevada, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To avoid or reduce climate change impacts, EO S-3-05 calls for a reduction in GHG emissions to the year 2000 level by 2010, to year 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. Executive Orders are not laws and can only provide the governor's direction to State agencies to act within their authority to reinforce existing laws.

Assembly Bill 32 – Global Warming Solution Act of 2006: The California Global Warming Solutions Act of 2006, widely known as AB 32, requires that CARB develop and enforce regulations for the reporting and verification of Statewide GHG emissions. CARB is directed by AB 32 to set a GHG emission limit, based on 1990 levels, to be achieved by 2020. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG emission reductions.

Executive Order B-30-15: On April 29, 2015, EO B-30-15 established a California GHG emission reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG emission reduction targets with those of leading international governments, including the 28-nation European Union. California is on track to meet or exceed the target of reducing GHGs emissions to 1990 levels by 2020, as established in AB 32. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the goal established by EO S-3-05 of reducing emissions to 80 percent under 1990 levels by 2050.

Senate Bill 32: Signed into law by Governor Brown on September 8, 2016, Senate Bill (SB) 32 (Amendments to the California Global Warming Solutions Action of 2006) extends California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a Statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EO B-30-15 of 80 percent below 1990 emissions levels by 2050.

Executive Order S-01-07: This EO, signed by Governor Schwarzenegger on January 18, 2007, directs that a Statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by the year 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and directs CARB to determine whether a LCFS can be adopted as a discrete early action measure pursuant to AB 32. CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in April 2010. Although challenged in 2011, the Ninth Circuit reversed the District Court's opinion and rejected arguments that implementing LCFS violates the interstate commerce clause in September 2013. CARB is therefore continuing to implement the LCFS Statewide.

Senate Bill 100: Approved by Governor Brown on September 10, 2018, SB 100 requires that all retail sales of electricity to California end-use customers be procured from 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

Executive Order N-79-20: EO N-79-20, signed by Governor Newsom on September 23, 2020, establishes three goals for the implementation of zero emissions vehicles in California: first, 100 percent of in-State sales of new passenger cars and trucks will be zero-emissions by 2035; second, 100 percent of medium- and heavy-duty vehicles in the State will be zero-emissions vehicles by 2045 for all operations where feasible, and by 2035 for drayage trucks; and third, 100 percent of off-road vehicles and equipment will be zero emissions by 2035 where feasible.

Assembly Bill 1279: Approved by Governor Newsom on September 16, 2022, AB 1279, the California Climate Crisis Act, declares the policy of the State to achieve net zero GHG emissions as soon as possible, but no later than 2045, and achieve and maintain net negative GHG emissions thereafter, and to ensure that by 2045, statewide anthropogenic GHG emissions are reduced to at least 85 percent below the 1990 levels. AB 1279 anticipates achieving these policies through direct GHG emissions reductions, removal of CO_2 from the atmosphere (carbon capture), and an almost complete transition away from fossil fuels.

California Air Resources Board Scoping Plan: The Scoping Plan is a strategy CARB develops and updates at least once every five years, as required by AB 32. It lays out the transformations needed across our society and economy to reduce emissions and reach our climate targets. The current 2022 Scoping Plan is the third update to the original plan that was adopted in 2008. The initial 2008 Scoping Plan laid out a path to achieve the AB 32 mandate of returning to 1990 levels of GHG emissions by 2020, a reduction of approximately 15 percent below business as usual. The 2008 Scoping Plan included a mix of incentives, regulations, and carbon pricing, laying out the portfolio approach to addressing climate change and clearly making the case for using multiple tools to meet California's GHG targets. The 2013 Scoping Plan assessed progress toward achieving the 2020 mandate and made the case for addressing short-lived climate pollutants (SLCPs). The 2017 Scoping Plan also assessed the progress toward achieving the 2020 limit and provided a technologically feasible and cost-effective path to achieving the SB 32 mandate of reducing GHGs by at least 40 percent below 1990 levels by 2030. On December 15, 2022, CARB approved the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan). The 2022 Scoping Plan lays out a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels no later than 2045, as directed by AB 1279. The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels; further reductions in SLCPs; support for sustainable development; increased action on natural and working lands to reduce emissions and sequester carbon; and the capture and storage of carbon (CARB 2022).

San Joaquin Valley Air Pollution Control District: In December 2009, the SJVAPCD adopted the following guidance documents applicable to the project:

- Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (SJVAPCD 2009a), and

- District Policy: Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009b).

This guidance and policy are the documents referenced in the SJVAPCD's *Guidance for Assessing and Mitigating Air Quality Impacts,* adopted in March 2015 (SJVAPCD 2015). Consistent with the District Guidance and District Policy above, SJVAPCD acknowledges the current absence of numerical thresholds, and recommends a tiered approach to establish the significance of the GHG impacts on the environment:

1. If a project complies with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, then the project would be determined to have a less than significant individual and cumulative impact for GHG emissions;

2. If a project does not comply with an approved GHG emission reduction plan or mitigation program, then it would be required to implement best performance standards (BPS); and

3. If a project is not implementing BPS, then it should demonstrate that its GHG emissions would be reduced or mitigated by at least 29 percent, compared to business-as-usual.

The SJVAPCD adopted a Climate Change Action Plan (CCAP) in 2008 and issued guidance for development project compliance with the plan in 2009. The guidance adopted an approach that relies on the use of BPS to reduce GHG emissions. Projects implementing BPS would be determined to have a less than cumulatively significant impact. For projects not implementing BPS, demonstration of a 29 percent reduction in project-specific (i.e., operational) GHG emissions from business-as-usual conditions is required to determine that a project would have a less than cumulatively significant impact (SJVAPCD 2009a). Both the SJVAPCD CCAP and the guidance for development project compliance are limited to achieving the State 2020 GHG reduction goals mandated by AB 32. The SJVAPCD CCAP and the guidance for development project compliance do not address California's post-2020 GHG reduction goals. Kern County currently does not have a CAP or other GHG reduction plan which addresses post-2020 GHG reductions mandated by SB 32 and AB 1279. The City of Bakersfield is currently in the process of preparing its first Climate Action Plan (CAP), and released a draft CAP for public comment in 2023; however, at the time of this analysis, the City had not adopted the CAP (City 2024).

SENSITIVE RECEPTORS

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: adults over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005; OEHHA 2015).

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. The closest existing sensitive receptor to the project site is single-family residential homes located 50 feet from the proposed water mains. The closest school is Independence High School located approximately 350 feet northwest of the proposed 10-inch water main along Old River Road.

METHODOLOGY AND ASSUMPTIONS

Criteria pollutant and precursor emissions, and GHG emissions for the project construction activities were calculated using the California Emissions Estimator Model (CalEEMod), Version 2022.1. CalEEMod is a Statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. The model was developed for the California Air Pollution Control Officers Association (CAPCOA) in collaboration with the California air districts. CalEEMod allows for the use of default data (e.g., emission factors, trip lengths, meteorology, source inventory) provided by the various California air districts to account for local requirements and conditions, and/or user-defined inputs. The model calculates emissions of criteria pollutants, ozone precursors, and GHGs, including PM_{10}, $PM_{2.5}$, ROGs, NO_X, and CO_2e. The calculation methodology and input data used in CalEEMod can be found in the CalEEMod User's Guide Appendices C, D, and G (CAPCOA 2022). The input data and subsequent construction emission estimates for the proposed project are discussed below. The CalEEMod output files are included in Attachment B to this report.

Construction Assumptions

As described above, construction emissions were estimated using CalEEMod. Construction input data for CalEEMod include, but are not limited to, (1) the anticipated start and finish dates of construction activity; (2) inventories of construction equipment to be used; (3) areas to be excavated and graded; and (4) volumes of materials to be exported from and imported to the project area.

Construction of the project is anticipated to begin April 1, 2026, and be completed on December 31, 2026. Most of the pipeline would be installed using convention trenching, commonly known as "cut-and-cover". A short portion of the 10-inch pipeline would be installed underneath an existing irrigation canal/culvert using trenchless tunneling and installation of pipe commonly known as "jack-and-bore". The total 1.4-acre disturbed area was estimated based on information provided by the project engineer and it was assumed that the total paved area would be 100 percent asphalt. The construction activity schedule was provided by the project engineer and is outlined in Table 2, *Project Construction Schedule*, below. It was assumed that all construction activities would occur concurrently. All activities except for jack-and-bore include both the 10-inch pipeline and 8-inch pipeline.

Table 2
PROJECT CONSTRUCTION SCHEDULE

Construction Activity	Construction Start Date	Construction End Date	Number of Working Days
Pavement Demolition	4/1/2026	12/31/2026	197
Trenching-Cut	4/1/2026	12/31/2026	197
Trenching-Cover	4/1/2026	12/31/2026	197
Pipeline Installation	4/1/2026	12/31/2026	197
Pavement Repair	4/1/2026	12/31/2026	197
Jack and Bore Preparation	7/1/2026	7/2/2026	2
Jack and Bore	7/3/2026	7/9/2026	5
Jack and Bore Cleanup	7/10/2026	7/13/2026	2
Restriping	12/1/2026	12/5/2026	4

Source: CalEEMod Output (Attachment B)

Construction equipment for each construction activity was provided by the project engineer and was based on CalEEMod defaults. Table 3, *Project Construction Equipment*, below, presents a summary of the assumed equipment that would be involved in each activity of construction. For this project, a crawler tractor is a Caterpillar PL61 Pipelayer and an off-highway truck is a water truck.

Table 3
PROJECT CONSTRUCTION EQUIPMENT

Construction Activity	Equipment	Number
Pavement Demolition	Tractors/Loaders/Backhoes	2
	Concrete/Industrial Saws	2
	Off-Highway Trucks	1
Trenching-Cut	Excavators	2
Trenching-Cover	Tractors/Loaders/Backhoes	2
	Rollers	2
Pipeline Installation	Crawler Tractors	2
Pavement Repair	Tractors/Loaders/Backhoes	2
	Pavers	2
	Rollers	2
Jack and Bore Preparation	Excavators	1
	Skid Steer Loaders	1
	Tractors/Loaders/Backhoes	1
Jack and Bore	Bore/Drill Rigs	1
	Excavators	1
	Pumps	1
Jack and Bore Cleanup	Skid Steer Loaders	1
	Tractors/Loaders/Backhoes	1
Restriping	Air Compressors	2

Source: CalEEMod Output (Attachment B)

Per the project engineer, 210 tons of old asphalt would be exported during pavement demolition. Emissions calculations assume application of water during pavement demolition and a 15-mph speed limit on unpaved surfaces in compliance with SJVAPCD Rule 8021, *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities*.

Construction trips were estimated based on information provided by the project engineer and CalEEMod defaults. It was assumed that the project would require five, one-way worker trips per day and one, one-way vendor trip per day for installation of the pipeline. It was also assumed that the project would require one, one-way truckload per day for pavement imports and two, one-way worker trips per day for restriping.

Operational Assumptions

Operation of the proposed project would not result in a population increase and would not generate new vehicle trips beyond occasional maintenance activities. Operation of the project would not require new backup pumps or backup generators. Therefore, changes in project operational emissions would be negligible compared to operational emissions from the existing water systems. Therefore, project operational emissions were not quantified.

STANDARDS OF SIGNIFICANCE

Air Quality

According to Appendix G of the State CEQA Guidelines, a project would have a significant air quality environmental impact if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan; or
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or State ambient air quality standard; or
3. Expose sensitive receptors to substantial pollutant concentrations; or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Appendix G of the State CEQA Guidelines states that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The SJVAPCD has established significant thresholds to assess the impacts of project-related air pollutant emissions. The significance thresholds are updated, as needed, to appropriately represent the most current technical information and attainment status in the SJVAB. Table 4, *SJVAPCD Air Quality Significance Thresholds*, presents the most current significance thresholds, including thresholds for construction and operational emissions and maximum incremental cancer risk and hazard indices for TACs. A project with emission rates and risk values below these thresholds is generally considered to have a less than significant impact on air quality.

Table 4
SJVAPCD AIR QUALITY SIGNIFICANCE THRESHOLDS

Mass Daily Thresholds (tons per year)		
Pollutant	**Construction**	**Operation**
ROG	10	10
NO_X	10	10
CO	100	100
PM_{10}	15	15
$PM_{2.5}$	15	15
SO_X	27	27
Toxic Air Contaminants		
TACs	Maximum Incremental Cancer Risk ≥ 10 in 1 million Chronic & Acute Hazard Index ≥ 1.0 (project increment)	

Source: SJVAPCD 2015
ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; PM_{10} = coarse particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less; SO_X = sulfur oxides; TACs = toxic air contaminants; NO_2 = nitrogen dioxide; ppm = parts per million; µg/m^3 = micrograms per cubic meter

As set forth in the SJVAPCD *Guidance for Assessing and Mitigating Air Quality Impacts*, any proposed project that would individually have a significant air quality impact would also be considered to have a significant cumulative air quality impact. Impacts of local pollutants (CO, TACs) are cumulatively significant when modeling shows that the combined emissions from the project and other existing and planned projects would exceed air quality standards.

Greenhouse Gas Emissions

Given the relatively small levels of emissions generated by a project in relationship to the total amount of GHG emissions generated on a national or global basis, individual projects are not expected to result in significant, direct impacts with respect to climate change. However, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change. Thus, the potential for a significant GHG impact is limited to cumulative impacts. According to Appendix G of the State CEQA Guidelines, the following criteria may be considered in establishing the significance of GHG emissions:

Would the project:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

The SJVAPCD has adopted the guidance in Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA and the 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 Best Performance Standards (BPS) to assess the significance of project-specific GHG emissions on global climate change during the environmental review process.

However, SJVAPCD's adopted BPS are specifically directed at reducing GHG emissions from stationary sources; therefore, the adopted BPS would not generally be applicable to the proposed project as construction of the pipelines would not be a stationary source of emissions. The SJVAPCD guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project-related impacts on global climate change.

Neither the County, City, nor the SJVAPCD has adopted a GHG emissions threshold for construction and operational emissions. In the event that a local air district's guidance for addressing GHG impacts does not use numerical GHG emissions thresholds, at the lead agency's discretion, GHG thresholds adopted by neighboring California air districts may be used to determine impacts. The Sacramento Metropolitan Air Quality Management District (SMAQMD) has adopted a GHG construction threshold of 1,100 MT CO_2e per year for a project's construction emissions (SMAQMD 2021). A project with an emission rate below this threshold is generally considered to have a less than significant impact on GHG emissions.

AIR QUALITY IMPACT ANALYSIS

(1) Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. As discussed in Table 4, the SJVAPCD has established thresholds of significance for a project's criteria pollutant and precursor emissions for both temporary construction-related emissions and long-term operational-related emissions. According to the SJVAPCD, these significant thresholds have been established to assist lead agencies in determining whether a project may have a significant air quality impact. A project with emissions lower than the thresholds would not conflict with or obstruct implementation of the district's air quality plans for attainment of the applicable NAAQS and CAAQS (SJVAPCD 2015). As discussed below, the project would not exceed the temporary construction-related thresholds of significance for criteria pollutants and precursor emissions. Additionally, the project would not result in a population increase and would not generate new vehicle trips, and occasional project maintenance activities would be similar to maintenance activated for the exiting water systems. Operation of the project would not require new pumps or backup generators. Therefore, operational emissions would be negligible.

In addition, control measures in the air quality plans adopted by the SJVAPCD are based in part on growth projections in local planning documents such as the County and City General Plans. The project would not require a change of General Plan land use designation and the project would not result in population or employment growth in the County or City. Therefore, the project would not conflict with or obstruct implementation of the applicable air quality plans and the impact would be less than significant.

(2) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard?

Less than Significant Impact. The SJVAB is designated as attainment for PM_{10}; attainment/unclassified for CO, NO_2, SO_2; extreme nonattainment for 8-hour ozone; and in nonattainment for $PM_{2.5}$ with respect to federal air quality standards. The SJVAB is designated as attainment for CO, NO_2, SO_2, and lead; severe nonattainment for 1-hour ozone; and as nonattainment for 8-hour ozone, $PM_{2.5}$, and PM_{10} with respect to State air quality standards. The project's emissions of these criteria pollutants and precursors during construction and operation are evaluated below.

Construction Emissions

CalEEMod was used to quantify project-generated construction emissions, as discussed in *Methodology and Assumptions*, above. The model output sheets are included in Attachment B. Construction of the project is anticipated to start April 1, 2026, and be completed on December 31, 2026. The quantity, duration, and intensity of construction activity influence the amount of construction emissions and related pollutant concentrations that occur at any one time. As such, the emission forecasts provided herein reflect a specific set of conservative assumptions based on the expected construction scenario wherein a relatively large amount of construction activity is occurring in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those forecasted. If construction is delayed or occurs over a longer time period, emissions could be reduced because of: (1) a more modern and cleaner-burning construction equipment fleet mix than assumed in CalEEMod; and/or (2) a less intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval).

The project's construction period emissions of ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ were compared to the SJVAPCD construction thresholds in Table 5, *Annual Construction Criteria Pollutant and Precursor Emissions*. Table 4 presents the most current significance thresholds, including thresholds for construction and operational emissions and maximum incremental cancer risk and hazard indices for TACs. As shown in Table 5, the proposed project's construction period emissions of ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ would not exceed the SJVAPCD thresholds. Therefore, impacts related to construction-generated emissions of ROG, NO_X, CO, SO_X, PM_{10}, and $PM_{2.5}$ would be less than significant.

Table 5
ANNUAL CONSTRUCTION CRITERIA POLLUTANT AND PRECURSOR EMISSIONS

Construction Activities	Pollutant Emissions (tons per year)					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Pavement Demolition, Trenching-Cut, Trenching-Cover, Pipeline Installation, Pavement Repair, Jack and Bore Preparation, Jack and Bore, Jack and Bore Cleanup, Restriping	0.30	2.37	3.55	0.01	0.23	0.11
SJVAPCD Threshold	*10*	*10*	*100*	*27*	*15*	*15*
Significant Impact?	***No***	***No***	***No***	***No***	***No***	***No***

Source: CalEEMod (output data is provided in Attachment B).
ROG = reactive organic gas; NO_X = nitrogen oxides; CO = carbon monoxide; SO_X = sulfur oxides; PM_{10} = coarse particulate matter with a diameter of 10 microns or less; $PM_{2.5}$ = fine particulate matter with a diameter of 2.5 microns or less;

Operational Emissions

As discussed in *Methodology and Assumptions*, operational emissions were not quantified. Operation of the proposed project would not result in a population increase and would not generate new vehicle trips, and occasional project maintenance activities would be similar to maintenance activated for the exiting water systems. Operation of the project would not require new pumps or backup generators. Therefore, operational emissions would be negligible, and the impact would be less than significant.

Impact Conclusion

Construction and operation of the project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment, and the impact would be less than significant.

(3) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. As discussed in *Sensitive Receptors*, the closest existing sensitive receptor to the project site is single-family residential homes located 50-feet from the proposed water mains. The closest school is Independence High School located approximately 350 feet northwest of the proposed 10-inch water main along Old River Road.

The dose (of TAC) to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance in the environment and the extent of exposure a person has to the substance; a longer exposure period to a fixed quantity of emissions would result in higher health risks. Current models and methodologies for conducting cancer health risk assessments are associated with longer-term exposure periods (typically 30 years for individual residents based on guidance from OEHHA) and are best suited for evaluation of long-duration TAC emissions with predictable schedules and locations. These assessment models and methodologies do not correlate well with the temporary and highly variable nature of construction activities. Cancer potency factors are based on animal lifetime studies or worker studies where there is long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from projects that will only last a small fraction of a lifetime (OEHHA 2015). Concentrations of mobile source DPM emissions disperse rapidly and are typically reduced by 70 percent at approximately 500 feet (CARB 2005). Considering the highly dispersive nature of DPM and the fact that construction activities would occur for short durations at various locations in the project area, it is not anticipated that construction of the project would expose sensitive receptors to substantial DPM concentrations.

The use of diesel-powered equipment for occasional project operational maintenance would be similar maintenance equipment use for the existing water system. Operation of the project would not require the use of new stationary sources of TACs, such as backup generators. Therefore, construction and operation of the project would not expose sensitive receptors to substantial pollutant concentrations, and the impact would be less than significant.

(4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less than Significant Impact. The project could produce odors during construction activities resulting from heavy diesel equipment exhaust and VOC released during application of asphalt. The odor of these emissions is objectionable to some; however, emissions would disperse rapidly from the project site and therefore should not be at a level that would affect a substantial number of people. Any odors emitted during construction activities would be temporary, short-term, and intermittent in nature, and would cease upon the facility maintenance. As a result, impacts associated with temporary odors during construction are not considered significant.

The SJVAPCD has developed screening distances for common sources of operational odors, including Wastewater Treatment Facility; Sanitary Landfill; Transfer Station; Composting Facility; Petroleum Refinery; Asphalt Batch Plant; Chemical Manufacturing; Fiberglass Manufacturing; Painting/Coating Operations (e.g., auto body shops); Food Processing Facility; Feed Lot/Dairy; and Rendering Plant (SJVAPCD 2015a). As the project would install water pipelines and fire hydrants, operation of the project would not result in odors affecting a substantial number of people.

Neither construction nor operation of the project would result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, and the impact would be less than significant.

GREENHOUSE GAS EMISSIONS IMPACT ANALYSIS

(1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact.

Construction Emissions

GHG emissions would be generated by the project during construction from vehicle engine exhaust from construction equipment, on-road trucks, vendor trips, and worker maintenance trips. Construction GHG emissions were calculated using CalEEMod, as described in *Methodology and Assumptions*. The results of the construction GHG emissions calculations were compared to the SMAQMD threshold in Table 6, *Construction GHG Emissions*. As shown in Table 6, the construction GHG emissions would not exceed the SMAQMD construction GHG threshold and the impact would be less than significant.

Table 6
CONSTRUCTION GHG EMISSIONS

Year of Emissions	Emissions ($MT CO_2e$)
2026	567
SMAQMD Construction Threshold (per year)	*1,100*
Exceed Threshold?	No

Source: CalEEMod (output data is provided in Attachment B).
MT = metric tons; CO_2e = carbon dioxide equivalent

Operational Emissions

As discussed in *Methodology and Assumptions*, operational emissions were not quantified. Operation of the proposed project would not result in a population increase and would not generate new vehicle trips, and occasional project maintenance activities would be similar to maintenance activated for the exiting water systems. Operation of the project would not require new pumps or backup generators. The project would not result in changes in water use, and the electricity used by the project to treat and divide water to customers would be similar to the electricity used by the existing water systems. Therefore, operational GHG emissions would be negligible, and the impact would be less than significant.

Impact Conclusion

Construction and operation of the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment. The impact would be less than significant.

(2) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Less than Significant Impact. There are numerous State plans, policies, and regulations adopted for the purpose of reducing GHG emissions. The principal overall State plan and policy is AB 32, the California Global Warming Solutions Act of 2006. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020. SB 32 requires further reductions of 40 percent below 1990 levels by 2030. AB 1279 requires the State to achieve net zero GHG emissions no later than 2045. The mandates of AB 32, SB 32, and AB 1279 are implemented at the State level by the CARB's Scoping Plan. Because the project's operational year is post-2020, the project aims to reach the quantitative goals set by SB 32 and AB 1279. Statewide plans and regulations such as GHG emissions standards for vehicles and transportation fuels, and regulations requiring an increasing fraction of electricity to be generated from renewable sources are being implemented at the Statewide level; as such, compliance at the project level is not addressed. Therefore, the proposed project would not conflict with those plans and regulations.

As noted in impact question (1) above, construction GHG emissions would not exceed the GHG thresholds, and would be less than significant. In addition, operation of the proposed project would not result in a population increase and would not result in substantial changes in GHG emissions compared to operation of the existing water systems. As a result, the project would not conflict with the GHG reduction objectives of the State's Scoping Plan, including net zero GHG emissions by 2045, mandated by AB 1279, or the SJVAPCD's CCAP. The impact would be less than significant.

CONCLUSION

As described above, the project would not conflict with the SJVAPCD's air quality attainment and maintenance plans. Project construction emissions of criteria pollutants would be below SJVAPCD construction thresholds. Operation of the proposed project would not result in a population increase, would not require new pumps or backup generators, and would not result in substantial changes in operation criteria pollutant emissions compared to operation of the existing water systems. Additionally, sensitive receptors would not be exposed to substantial concentrations of TACs or odors. Therefore, air quality impacts would be less than significant, and no mitigation measures would be required.

As also described above, construction emissions of GHGs would be below SMAQMD construction threshold. Operation of the proposed project would not result in a population increase and would not result in substantial changes in GHG emissions compared to operation of the existing water systems. Therefore, GHG emission impacts would be less than significant, and no mitigation measures would be required.

Sincerely,

Martin Rolph
Air Quality Specialist

Julia Pano
Environmental Planner

Attachments:

Attachment A: Figures
Attachment B: CalEEMod Output

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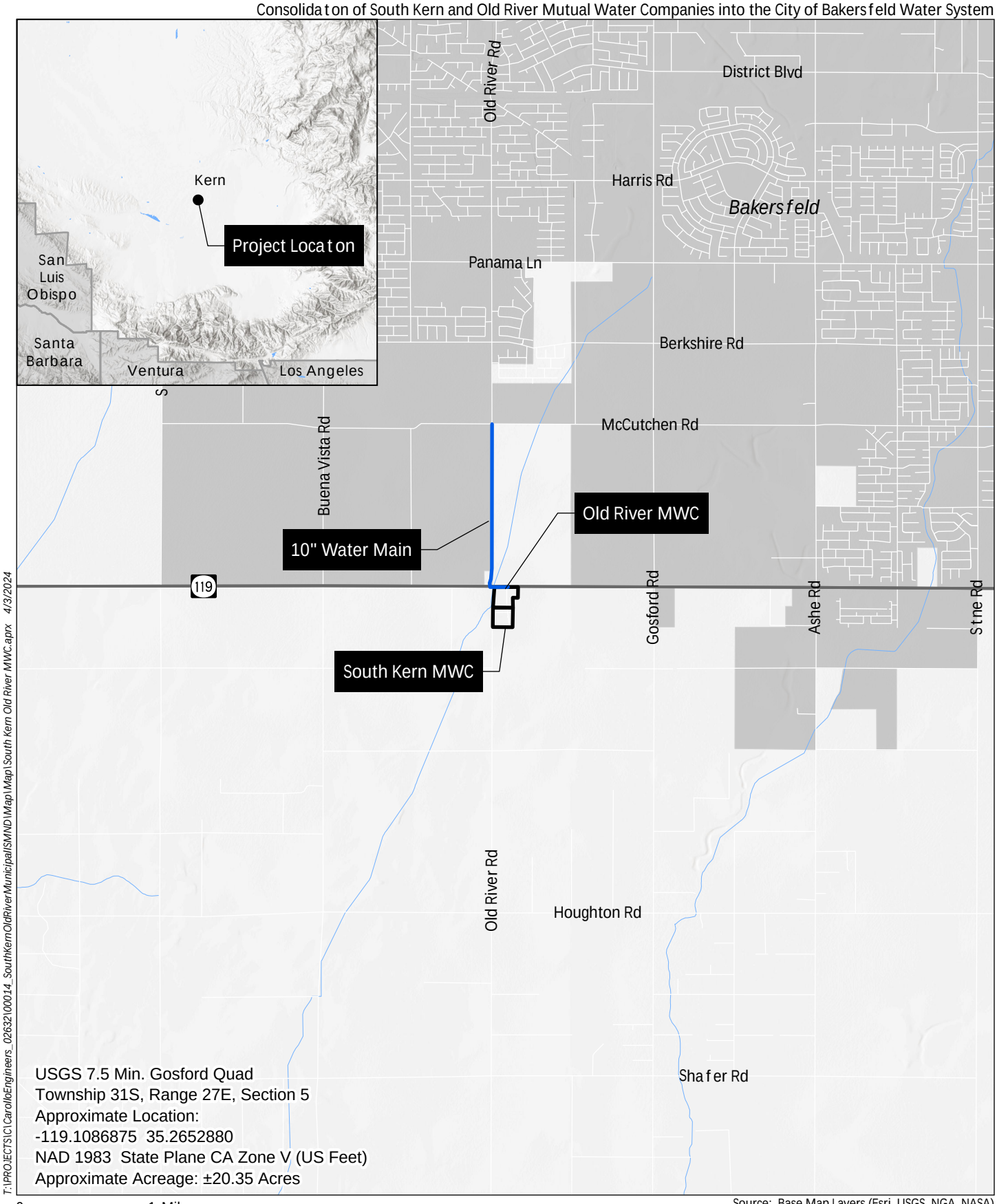
Attachment A

Figures



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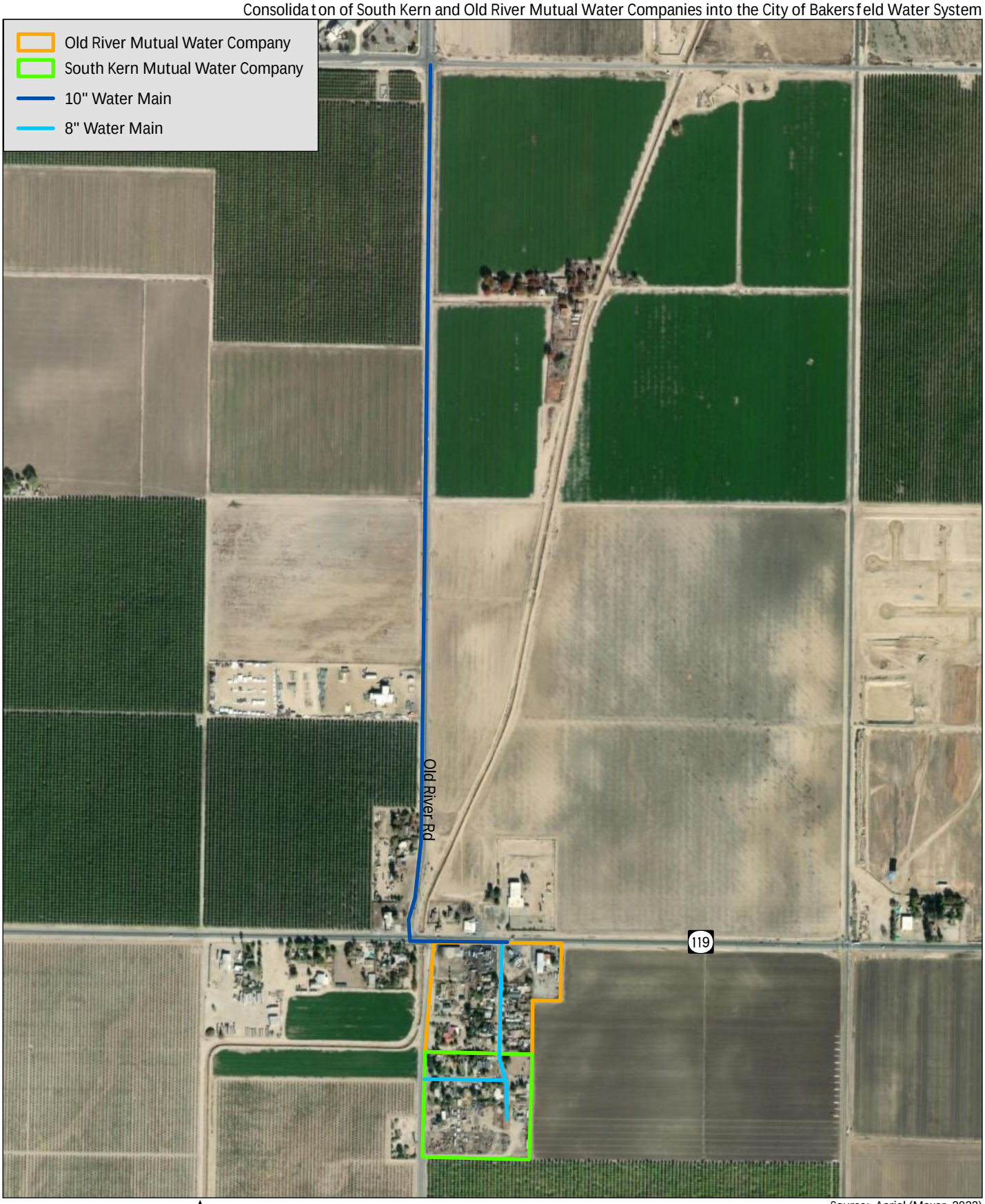
HELIX Environmental Planning

Site and Vicinity Map

Figure 1



T:\PROJECTS\C\CarolloEngineers_02632\00014_SouthKernOldRiverMunicipalISMND\Map\Map\South Kern Old River MWC.aprx 8x11P 4/4/2024

Source: Aerial (Maxar, 2022)

HELIX Environmental Planning

Project Location and Mutual Water Company Site Locations

Figure 2

T:\PROJECTS\C\Carollo\Engineers_02632\00014_SouthKernOldRiverMunicipalISMND\Map\Map\South Kern Old River MWC.aprx Fig3_Site Plan 4/4/2024

Source: Aerial (Maxar, 2022)

HELIX Environmental Planning

Site Plan

Figure 3

Attachment B

CalEEMod Output

South Kern Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	South Kern
Construction Start Date	4/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	18.0
Location	8227 Old River Rd, Bakersfield, CA 93311, USA
County	Kern-San Joaquin
City	Bakersfield
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2811
EDFZ	5
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Southern California Gas
App Version	2022.1.1.26

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Asphalt Surfaces	1.40	Acre	1.40	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.89	3.28	26.6	41.7	0.06	1.03	1.54	2.58	0.95	0.26	1.21	7,150
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.05	7.45	25.7	38.0	0.06	0.99	1.50	2.50	0.92	0.25	1.17	6,598
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.95	1.65	13.0	19.5	0.03	0.51	0.76	1.28	0.47	0.13	0.60	3,425
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.36	0.30	2.37	3.55	0.01	0.09	0.14	0.23	0.09	0.02	0.11	567

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year												
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.89	3.28	26.6	41.7	0.06	1.03	1.54	2.58	0.95	0.26	1.21	7,150
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
2026	8.05	7.45	25.7	38.0	0.06	0.99	1.50	2.50	0.92	0.25	1.17	6,598

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.95	1.65	13.0	19.5	0.03	0.51	0.76	1.28	0.47	0.13	0.60	3,425
Annual	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.36	0.30	2.37	3.55	0.01	0.09	0.14	0.23	0.09	0.02	0.11	567

3. Construction Emissions Details

3.1. Pavement Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.93	0.77	6.34	8.97	0.02	0.19	—	0.19	0.17	—	0.17	1,741
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.93	0.77	6.34	8.97	0.02	0.19	—	0.19	0.17	—	0.17	1,741
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	0.42	3.42	4.84	0.01	0.10	—	0.10	0.09	—	0.09	940
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.62	0.88	< 0.005	0.02	—	0.02	0.02	—	0.02	156
Demolition	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.05	0.87	0.00	0.00	0.15	0.15	0.00	0.04	0.04	167
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	19.1
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.06	0.59	0.00	0.00	0.15	0.15	0.00	0.04	0.04	147
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	19.1
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.35	0.00	0.00	0.08	0.08	0.00	0.02	0.02	82.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	10.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	13.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	1.71

3.3. Pipe Installation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	0.55	4.82	6.32	0.01	0.27	—	0.27	0.25	—	0.25	1,043
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	0.55	4.82	6.32	0.01	0.27	—	0.27	0.25	—	0.25	1,043
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.30	2.60	3.41	0.01	0.14	—	0.14	0.13	—	0.13	563
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.47	0.62	< 0.005	0.03	—	0.03	0.02	—	0.02	93.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.69	0.00	0.00	0.12	0.12	0.00	0.03	0.03	134
Vendor	< 0.005	< 0.005	0.07	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	67.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.05	0.47	0.00	0.00	0.12	0.12	0.00	0.03	0.03	117
Vendor	< 0.005	< 0.005	0.08	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	67.2

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	65.8
Vendor	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	36.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.9
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	6.01
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Pavement Repair (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.89	0.75	6.85	9.91	0.01	0.30	—	0.30	0.27	—	0.27	1,500
Paving	0.02	0.02	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.89	0.75	6.85	9.91	0.01	0.30	—	0.30	0.27	—	0.27	1,500
Paving	0.02	0.02	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.48	0.40	3.70	5.35	0.01	0.16	—	0.16	0.15	—	0.15	810
Paving	0.01	0.01	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.67	0.98	< 0.005	0.03	—	0.03	0.03	—	0.03	134
Paving	< 0.005	< 0.005	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	1.04	0.00	0.00	0.18	0.18	0.00	0.04	0.04	201
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.16	0.03	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	142
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.07	0.71	0.00	0.00	0.18	0.18	0.00	0.04	0.04	176
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.17	0.04	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	142
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.42	0.00	0.00	0.10	0.10	0.00	0.02	0.02	98.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.09	0.02	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	76.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	16.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	12.7

3.7. Restriping (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	0.24	1.71	2.27	< 0.005	0.05	—	0.05	0.04	—	0.04	268
Architectural Coatings	4.24	4.24	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.94
Architectural Coatings	0.05	0.05	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.49
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.02	0.02	0.02	0.19	0.00	0.00	0.05	0.05	0.00	0.01	0.01	46.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.53
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Trenching-Cut (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.64	2.04	< 0.005	0.05	—	0.05	0.04	—	0.04	284
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	3.61
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.64	2.04	< 0.005	0.05	—	0.05	0.04	—	0.04	284
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.74	0.74	< 0.005	0.07	0.07	3.66
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.12	0.10	0.89	1.10	< 0.005	0.03	—	0.03	0.02	—	0.02	153
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.38	0.38	< 0.005	0.04	0.04	1.96
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.16	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	25.4
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	0.32
Offsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.35	0.00	0.00	0.06	0.06	0.00	0.01	0.01	66.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.24	0.00	0.00	0.06	0.06	0.00	0.01	0.01	58.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	32.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.45
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Trenching-Cover (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.55	0.46	3.81	5.79	0.01	0.14	—	0.14	0.13	—	0.13	867
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.55	0.46	3.81	5.79	0.01	0.14	—	0.14	0.13	—	0.13	867
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.25	2.06	3.13	< 0.005	0.08	—	0.08	0.07	—	0.07	468
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.38	0.57	< 0.005	0.01	—	0.01	0.01	—	0.01	77.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.69	0.00	0.00	0.12	0.12	0.00	0.03	0.03	134
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.05	0.47	0.00	0.00	0.12	0.12	0.00	0.03	0.03	117

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	65.8
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	10.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.13. Jack and Bore Prep (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	2.69	4.43	0.01	0.08	—	0.08	0.08	—	0.08	679
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	3.72
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.62
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.52	0.00	0.00	0.09	0.09	0.00	0.02	0.02	100
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.08
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.15. Jack and Bore (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	0.27	2.64	3.83	0.01	0.08	—	0.08	0.07	—	0.07	610

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	8.35
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.38
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.52	0.00	0.00	0.09	0.09	0.00	0.02	0.02	100
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.25
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.21
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.17. Jack and Bore Cleanup (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.87	3.41	< 0.005	0.06	—	0.06	0.05	—	0.05	537
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	2.94
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.49
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.35	0.00	0.00	0.06	0.06	0.00	0.01	0.01	66.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.33
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Pavement Demolition	Demolition	4/1/2026	12/31/2026	5.00	197	—
Pipe Installation	Building Construction	4/1/2026	12/31/2026	5.00	197	—
Pavement Repair	Paving	4/1/2026	12/31/2026	5.00	197	—
Restriping	Architectural Coating	12/1/2026	12/5/2026	5.00	4.00	—
Trenching-Cut	Trenching	4/1/2026	12/31/2026	5.00	197	—
Trenching-Cover	Trenching	4/1/2026	12/31/2026	5.00	197	—
Jack and Bore Prep	Trenching	7/1/2026	7/2/2026	5.00	2.00	—
Jack and Bore	Trenching	7/3/2026	7/9/2026	5.00	5.00	—
Jack and Bore Cleanup	Trenching	7/10/2026	7/13/2026	5.00	2.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Pavement Demolition	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Pavement Demolition	Concrete/Industrial Saws	Diesel	Average	2.00	8.00	33.0	0.73
Pavement Demolition	Off-Highway Trucks	Diesel	Average	1.00	4.00	376	0.38
Pipe Installation	Crawler Tractors	Diesel	Average	2.00	8.00	130	0.43
Pavement Repair	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Pavement Repair	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Pavement Repair	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Restriping	Air Compressors	Diesel	Average	2.00	6.00	37.0	0.48
Trenching-Cut	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Trenching-Cover	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Trenching-Cover	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Jack and Bore Prep	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Jack and Bore Prep	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37
Jack and Bore Prep	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Jack and Bore	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Jack and Bore	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Jack and Bore	Pumps	Diesel	Average	1.00	8.00	11.0	0.74
Jack and Bore Cleanup	Skid Steer Loaders	Diesel	Average	1.00	8.00	71.0	0.37
Jack and Bore Cleanup	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Pavement Demolition	—	—	—	—
Pavement Demolition	Worker	12.5	17.3	LDA,LDT1,LDT2
Pavement Demolition	Vendor	—	10.6	HHDT,MHDT
Pavement Demolition	Hauling	0.27	20.0	HHDT
Pavement Demolition	Onsite truck	—	—	HHDT
Pipe Installation	—	—	—	—
Pipe Installation	Worker	10.0	17.3	LDA,LDT1,LDT2
Pipe Installation	Vendor	2.00	10.6	HHDT,MHDT
Pipe Installation	Hauling	0.00	20.0	HHDT
Pipe Installation	Onsite truck	—	—	HHDT
Pavement Repair	—	—	—	—
Pavement Repair	Worker	15.0	17.3	LDA,LDT1,LDT2
Pavement Repair	Vendor	—	10.6	HHDT,MHDT
Pavement Repair	Hauling	2.00	20.0	HHDT
Pavement Repair	Onsite truck	—	—	HHDT
Restriping	—	—	—	—
Restriping	Worker	4.00	17.3	LDA,LDT1,LDT2
Restriping	Vendor	—	10.6	HHDT,MHDT
Restriping	Hauling	0.00	20.0	HHDT
Restriping	Onsite truck	—	—	HHDT
Trenching-Cut	—	—	—	—
Trenching-Cut	Worker	5.00	17.3	LDA,LDT1,LDT2
Trenching-Cut	Vendor	—	10.6	HHDT,MHDT
Trenching-Cut	Hauling	0.00	20.0	HHDT
Trenching-Cut	Onsite truck	1.00	0.50	HHDT
Trenching-Cover	—	—	—	—
Trenching-Cover	Worker	10.0	17.3	LDA,LDT1,LDT2

Trenching-Cover	Vendor	—	10.6	HHDT,MHDT
Trenching-Cover	Hauling	0.00	20.0	HHDT
Trenching-Cover	Onsite truck	—	—	HHDT
Jack and Bore Prep	—	—	—	—
Jack and Bore Prep	Worker	7.50	17.3	LDA,LDT1,LDT2
Jack and Bore Prep	Vendor	—	10.6	HHDT,MHDT
Jack and Bore Prep	Hauling	0.00	20.0	HHDT
Jack and Bore Prep	Onsite truck	—	—	HHDT
Jack and Bore	—	—	—	—
Jack and Bore	Worker	7.50	17.3	LDA,LDT1,LDT2
Jack and Bore	Vendor	—	10.6	HHDT,MHDT
Jack and Bore	Hauling	0.00	20.0	HHDT
Jack and Bore	Onsite truck	—	—	HHDT
Jack and Bore Cleanup	—	—	—	—
Jack and Bore Cleanup	Worker	5.00	17.3	LDA,LDT1,LDT2
Jack and Bore Cleanup	Vendor	—	10.6	HHDT,MHDT
Jack and Bore Cleanup	Hauling	0.00	20.0	HHDT
Jack and Bore Cleanup	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Restriping	0.00	0.00	0.00	0.00	3,659

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Pavement Demolition	0.00	0.00	0.00	210	—
Pavement Repair	0.00	0.00	0.00	0.00	1.40

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%
Water Demolished Area	2	36%	36%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Asphalt Surfaces	1.40	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	22.0	annual days of extreme heat
Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	1	1	1	2
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	95.3
AQ-PM	98.7
AQ-DPM	56.3
Drinking Water	98.0
Lead Risk Housing	15.2
Pesticides	98.6
Toxic Releases	22.2
Traffic	9.69
Effect Indicators	—
CleanUp Sites	58.2
Groundwater	14.5
Haz Waste Facilities/Generators	58.8
Impaired Water Bodies	0.00
Solid Waste	75.7
Sensitive Population	—
Asthma	63.5

Cardio-vascular	83.3
Low Birth Weights	54.6
Socioeconomic Factor Indicators	—
Education	66.8
Housing	5.48
Linguistic	58.6
Poverty	52.3
Unemployment	47.0

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	48.59489285
Employed	60.23354292
Median HI	62.9026049
Education	—
Bachelor's or higher	22.22507378
High school enrollment	6.313358142
Preschool enrollment	20.76222251
Transportation	—
Auto Access	82.44578468
Active commuting	11.21519312
Social	—
2-parent households	46.65725651
Voting	39.65096882
Neighborhood	—
Alcohol availability	87.9892211

Park access	21.21134351
Retail density	7.994353907
Supermarket access	16.66880534
Tree canopy	0.82124984
Housing	—
Homeownership	86.01308867
Housing habitability	67.71461568
Low-inc homeowner severe housing cost burden	47.78647504
Low-inc renter severe housing cost burden	44.18067496
Uncrowded housing	36.04516874
Health Outcomes	—
Insured adults	34.59514949
Arthritis	88.7
Asthma ER Admissions	43.2
High Blood Pressure	73.3
Cancer (excluding skin)	85.3
Asthma	46.1
Coronary Heart Disease	88.8
Chronic Obstructive Pulmonary Disease	71.2
Diagnosed Diabetes	68.9
Life Expectancy at Birth	17.4
Cognitively Disabled	56.3
Physically Disabled	49.3
Heart Attack ER Admissions	13.6
Mental Health Not Good	38.2
Chronic Kidney Disease	73.0
Obesity	30.3
Pedestrian Injuries	73.8

Physical Health Not Good	52.6
Stroke	84.7
Health Risk Behaviors	—
Binge Drinking	15.4
Current Smoker	29.7
No Leisure Time for Physical Activity	36.8
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	3.5
Elderly	90.4
English Speaking	47.8
Foreign-born	50.7
Outdoor Workers	14.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	72.3
Traffic Density	16.9
Traffic Access	0.0
Other Indices	—
Hardship	67.1
Other Decision Support	—
2016 Voting	29.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	74.0
Healthy Places Index Score for Project Location (b)	33.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes

Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Schedule per project engineer.
Construction: Off-Road Equipment	Equipment per project engineer. Crawler tractor= Caterpillar PL61 Pipelayer. Off highway Truck= water truck.
Construction: Trips and VMT	Assumed 5 workers per day and one vendor per day for pipe installation. Assumed 2 workers per day for restriping. Up to 1 truckload per day of pavement import.

Appendix B

Biological Resources Technical Letter Report

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July 24, 2024

Sri Varadaraj, PE
Carollo Engineers
1401 Fulton Street, Suite 802
Fresno, CA 93721

Subject: Biological Technical Letter for the Consolidation of South Kern and Old River Municipal Water Companies into the City of Bakersfield Water System, Kern County, California

Dear Mr. Varadaraj:

HELIX Environmental Planning, Inc. (HELIX) has prepared this Biological Resources Technical Letter for the Consolidation of the South Kern and Old River Municipal Water Companies (MWCs) into the City of Bakersfield Water System (proposed project) in unincorporated Kern County, CA. The purpose of this assessment is to evaluate the potential for regionally occurring special-status plant and animal species, wetlands or other waters of the U.S. or waters of the State, and/or other sensitive biological resources to occur in the proposed project area and/or be impacted by site development. This technical letter includes a description of the location, setting, and existing condition of the project site, and an assessment of the potential for sensitive biological resources to occur on the project site.

LOCATION AND SETTING

The ±27.09-acre Study Area is located in Kern County southwest of the City of Bakersfield (Figure 1, Site and Vicinity Map). Old River MWC currently serves an approximately 10.7-acre area at the southeast corner of Old River Road and SR-119. South Kern MWC serves an approximately 9.7-acre area east of Old River Road and immediately south of the Old River MWC service area (Figure 2, Project Location and Mutual Water Company Site Locations). Both service areas are located in unincorporated Kern County, just outside of the City of Bakersfield limits.

PROPOSED PROJECT

Old River MWC and South Kern MWC provide water service to residential and commercial customers. Each MWC operates using a single well, and both wells produce water that exceeds allowable levels of uranium and 1, 2, 3-TCP. Therefore, the proposed project would abandon the two wells that supply water to customers and extend the City of Bakersfield's water system to consolidate both MWCs into the City of Bakersfield's water system.

In order to extend service from the City of Bakersfield's water system to the areas currently served by Old River MWC and South Kern MWC, the project would construct approximately 6,000 linear feet of new 10-inch water main along with1,600 linear feet of 8-inch lateral pipelines with connections to 29

households. Three fire hydrants would also be installed for use in case of emergency. The point of connection to the City of Bakersfield's water system would be the existing 16-inch diameter water main at McCutchen Road and Old River Road (Figure 3, Site Plan). Once the connection to the City of Bakersfield's water system is complete, the Old River MWC and the South Kern MWC wells would be abandoned and no longer provide water to the community.

REGULATORY SETTING

Federal, state, and local environmental laws, regulations, and policies concerning biological resources relevant to the California Environmental Quality Act (CEQA) review process are summarized below. The applicable CEQA significance criteria are also included in this section.

Federal Regulations

Federal Endangered Species Act

The U.S. Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 [(3) (19)]). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3). Actions that result in take can result in civil or criminal penalties.

In the context of the proposed project, FESA consultation with the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) would be initiated if development resulted in take of a threatened or endangered species or if issuance of a Section 404 permit or other federal agency action could result in take of an endangered species or adversely modify critical habitat of such a species.

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by several state and federal laws. The federal Migratory Bird Treaty Act (MBTA) prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

The Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (Eagle Act) prohibits the taking or possession of and commerce in bald and golden eagles with limited exceptions. Under the Eagle Act, it is a violation to "*take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest, or egg, thereof.*" Take is defined to include pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, and disturb. Disturb is further defined in 50 CFR Part 22.3 as "*to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best*

scientific information available (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

State Jurisdiction

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Wildlife (CDFW), when preparing CEQA documents. The purpose is to ensure that the State lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code (FGC) §2080). CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

California Department of Fish and Game Codes

California Fish and Game Code Sections 3503 and 3800 prohibit the possession, take, or needless destruction of birds, their nests, and eggs, and the salvage of dead nongame birds. California Fish and Game Code Subsection 3503.5 protects all birds in the orders of Falconiformes and Strigiformes (birds of prey). Fish and Game Code Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act. The Attorney General of California has released an opinion that the Fish and Game Code prohibits incidental take.

Native Plant Protection Act

The Native Plant Protection Act (NPPA), enacted in 1977, allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants protected under the NPPA. The NPPA prohibits take of endangered or rare native plants, with some exceptions for agricultural and nursery operations and emergencies. Vegetation removal from canals, roads, and other sites, changes in land use, and certain other situations require proper advance notification to CDFW.

California Environmental Quality Act

Under the California Environmental Quality Act of 1970 (CEQA; Public Resources Code Section 21000 et seq.), lead agencies analyze whether projects would have a substantial adverse effect on a candidate, sensitive, or special-status species (Public Resources Code Section 21001(c)). These "special-status" species generally include those listed under FESA and CESA, and species that are not currently protected by statute or regulation but would be considered rare, threatened, or endangered under the criteria included in CEQA Guidelines Section 15380. Therefore, species that are considered rare are addressed

under CEQA regardless of whether they are afforded protection through any other statute or regulation. The California Native Plant Society (CNPS) inventories the native flora of California and ranks species according to rarity; plants ranked as 1A, 1B, 2A, 2B, and 3 are generally considered special-status species under CEQA.[1]

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines Section 15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare if it can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals.

Nesting Birds

California Fish and Game Code Sections 3503 and 3800 prohibit the possession, take, or needless destruction of birds, their nests, and eggs, and the salvage of dead nongame birds. California Fish and Game Code Subsection 3503.5 protects all birds in the orders of Falconiformes and Strigiformes (birds of prey). Fish and Game Code Section 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act. The Attorney General of California has released an opinion that the Fish and Game Code prohibits incidental take.

Jurisdictional Waters

Federal Jurisdiction

On May 25, 2023, the United States (U.S.) Supreme Court issued a decision in the case of Sackett v. Environmental Protection Agency (Supreme Court of the United States 2023), which will ultimately influence how federal waters are defined under the Clean Water Act (CWA). The May 25, 2023, Supreme Court decision in Sackett v. Environmental Protection Agency determined that “the CWA extends to only those ‘wetlands with a continuous surface connection to bodies that are “waters of the U.S.” in their own right,’ so that they are ‘indistinguishable’ from those waters.” The U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACE) after review of the decision issued a final rule to replace the 2023 rule that amends the "Revised Definition of “Waters of the U.S.” to conform key aspects of the regulatory text to the U.S. Supreme Court's May 25, 2023 decision in the case of *Sackett v. Environmental Protection Agency*.

Unless considered an exempt activity under Section 404(f) of the Federal Clean Water Act, any person, firm, or agency planning to alter or work in “waters of the U.S.,” including the discharge of dredged or fill material, must first obtain authorization from the USACE under Section 404 of the Clean Water Act (CWA; 33 USC 1344). Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act prohibits the obstruction or alteration of navigable waters of the U.S. without a permit from USACE (33 USC 403). Activities exempted under Section 404(f) are not exempted within navigable waters under Section 10.

[1] The California Rare Plant Rank system can be found at: http://www.cnps.org/cnps/rareplants/ranking.php.

The Clean Water Act (33 United States Code [USC] 1251-1376) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters.

Section 401 requires that an applicant for a federal license or permit that allows activities resulting in a discharge to waters of the U.S. obtain a state certification that the discharge complies with other provisions of CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California and may require State Water Quality Certification before other permits are issued.

Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S.

Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the U.S. (including wetlands). Implementing regulations by USACE are found at 33 CFR Parts 320-332. The Section 404 (b)(1) Guidelines were developed by the USEPA in conjunction with USACE (40 CFR Part 230), allowing the discharge of dredged or fill material for non-water dependent uses into special aquatic sites only if there were no practicable alternative that would have less adverse impacts.

State Jurisdiction

Regional Water Quality Control Board

Any action requiring a CWA Section 404 permit, or a Rivers and Harbors Act Section 10 permit, must also obtain a CWA Section 401 Water Quality Certification. The State of California Water Quality Certification (WQC) Program was formally initiated by the State Water Resources Control Board (SWRCB) in 1990 under the requirements stipulated by section 401 of the Federal CWA. Although the CWA is a Federal law, Section 401 of the CWA recognizes that states have the primary authority and responsibility for setting water quality standards. In California, under Section 401, the State and Regional Water Boards are the authorities that certify that the issuance of a federal license or permit does not violate California's water quality standards (i.e., that they do not violate Porter-Cologne and the Water Code). The WQC Program currently issues the WQC for discharges requiring USACE's permits for fill and dredge discharges within waters of the U.S. and now also implements the State's wetland protection and hydromodification regulation program under the Porter-Cologne Water Quality Control Act.

On May 28, 2020, the SWRCB implemented the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures) for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California (SWRCB 2019). The Procedures consist of four major elements:

I. A wetland definition;

II. A framework for determining if a feature that meets the wetland definition is a water of the State;

III. Wetland delineation procedures; and

IV. Procedures for the submittal, review, and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities.

Under the Procedures and the State Water Code (Water Code §13050(e)), "waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the

State." Unless excluded by the Procedures, any activity that could result in discharge of dredged or fill material to waters of the State, which includes waters of the U.S. and non-federal waters of the State, requires filing of an application under the Procedures.

More specifically, a wetland is defined as: "*An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation*." The wetland definition encompasses the full range of wetland types commonly recognized in California, including some features not protected under federal law, and reflects current scientific understanding of the formation and functioning of wetlands (SWRCB 2019).

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Section 13000 *et seq*.) is California's statutory authority for the protection of water quality in conjunction with the federal CWA. The Porter-Cologne Act requires the SWRCB and RWQCBs under CWA to adopt and periodically update water quality control plans or basin plans. Basin plans are plans in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The Porter-Cologne Act also requires dischargers of pollutants or dredged or fill material to notify the RWQCBs of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, National Pollution Discharge Elimination System (NPDES) permits, Section 401 water quality certifications, or other approvals.

California Department of Fish and Wildlife

CDFW is a trustee agency that has jurisdiction under Section 1600 *et seq.* of the California FGC. Under Sections 1602 and 1603, a private party must notify CDFW if a proposed project will "*substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds…except when the department has been notified pursuant to Section 1601.*" Additionally, CDFW asserts jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over four inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow the protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures. Generally, CDFW recommends submitting an application for a Streambed Alteration Agreement (SAA) for any work done within the lateral limit of water flow or the edge of riparian vegetation, whichever is greater.

CEQA Significance

Section 15064.7 of the State CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely on the guidance provided by the expanded Initial Study Checklist, contained in Appendix G of the State CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if the project would:

- 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 CDFW or USFWS;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFW or USFWS;

- 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;

- 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;

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and

- Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional or state habitat conservation plan.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously, conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant, according to CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of, an important resource on a population-wide or region-wide basis.

California Native Plant Society

The California Native Plant Society (CNPS) maintains a rank of plant species native to California that have low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the *Inventory of Rare and Endangered Vascular Plants of California*. Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS Rare Plant Ranking System:

Rank 1A: Plants presumed Extinct in California and either rare or extinct elsewhere

Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere

Rank 2A: Plants presumed extirpated in California but common elsewhere

Rank 2B: Plants Rare, Threatened, or Endangered in California, but more common elsewhere

Rank 3: Plants about which we need more information – A Review List

Rank 4: Plants of limited distribution – A Watch List

All plants appearing on CNPS Rank 1 or 2 are considered to meet CEQA Guidelines Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, the CNPS recommends that all Rank 3 and Rank 4 plants be evaluated for consideration under CEQA. Furthermore, the CNPS Rare Plant Rankings include levels of threat for each species. These threat ranks include the following:

0.1 -Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat);

0.2 - Moderately threatened in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat); and

0.3 - Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Threat ranks do not designate a change of environmental protections, so that each species (i.e., CRPR 1B.1, CRPR 1B.2, CRPR 1B.3, etc.) should be fully considered during preparation of environmental documents under the CEQA process.

California Department of Fish and Wildlife Species of Concern

Some additional fish, amphibian, reptile, bird, and mammal species may receive consideration by CDFW and lead agencies during the CEQA process, in addition to species that are formally listed under FESA and CESA or are fully protected. These species are included on the *Special Animals List*, which is maintained by CDFW. This list tracks species in California whose numbers, reproductive success, or habitat may be in decline. In addition to "Species of Special Concern" (SSC), the *Special Animals List* includes species that are tracked in the California Natural Diversity Database (CNDDB) but warrant no legal protection. These species are identified as "California Special Animals" (CSA).

Kern County Policies and Regulations

General Plan

The Kern County General Plan (General Plan) was adopted in September 2009 (Kern County 2009). The General Plan provides a framework for future planning and guides private and public development of the County in a manner that reflects the community's vision and goals and includes goals and objectives for the protection of natural resources within the county's jurisdiction. A copy of the goals and objectives pertaining to natural resources contained in the General Plan is included in Attachment D of this report.

METHODS

The section below outlines the survey objectives and methodology for determining potential impacts to biological resources associated with the Project.

Analysis Objectives

- Identify and describe the vegetation communities in the Study Area;
- Evaluate and identify sensitive biological resources and special-status plant and animal species that could occur on the Study Area or be affected by any project-related activities, and;
- Provide conclusions and recommendations for surveys or permits that may be required prior to site development.

Database Queries

HELIX conducted a review of special-status species records for the *Lamontolor, Gosford, Oil Center, Oildale, Rosedale, Stevens, Weed Patch, Conner,* and *Millux, CA* U.S. Geological Survey (USGS) 7.5-minute quadrangles (quad)from the following databases:

- U.S. Fish and Wildlife Service IPaC (USFWS 2024);
- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2024);
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2024);
- National Wetlands Inventory (NWI); and
- Natural Resource Conservation Service (NRCS).

The results of these database queries are provided in Attachment B. Species listed in Attachment B were analyzed for their potential to occur in the Study Area based on habitat affinities, elevation range, and geographic range. For the purposes of this assessment, special-status species and other protected biological resources are those that fall into one or more of the following categories:

- Species listed as rare, threatened, or endangered under the federal Endangered Species Act (FESA) or California Endangered Species Act (CESA), including candidates and species proposed for listing;
- Species designated as rare, protected, or fully protected pursuant to the California Fish and Game Code (FGC);
- Species considered a Species of Special Concern (SSC) by the CDFW;
- Species meeting the definition of rare or endangered under Section 15380 of CEQA;
- Plants having a California Rare Plant Rank (CRPR) of 1, 2, or 3;
- Nesting bird species protected by FGC; and
- Aquatic resources or other sensitive habitats potentially regulated by federal, state, and/or local agencies,

Field Reconnaissance

A biological reconnaissance survey was conducted by HELIX biologist Dave Pfuhler on June 19, 2024. The Study Area was assessed for plant communities, habitat types, aquatic resources, and wildlife present at the time of the survey, as well as for the potential for the Study Area to support special-status species. To classify the habitat types occurring on the Study Area, HELIX consulted the generalized plant community classification schemes of CDFW's California Wildlife Habitat Relationship Habitat

Classification Scheme (Mayer and Laudenslayer 1988). Our final classification and characterization of the habitat types within the Study Area were based on field observations. Representative photographs of the Study Area are provided in Attachment C.

Preliminary wetland boundaries within the Study Area were mapped as part of the reconnaissance surveys. While a formal aquatic resources delineation was not performed, the extent of aquatic resources mapped are believed to be reflective of wetland conditions at the Study Area in an average rainfall year.

RESULTS

Existing Conditions

The Study Area is comprised of a developed agricultural road corridor and small rural community. Several houses and paved roads are found throughout the Study Area as well as barren areas. Agricultural uses along the road corridor support orchards, annual crops, and some fallowed lands. Based on historical aerial imagery, the Study Area has been primarily an agricultural community since at least 1952 with the current neighborhood complex served by both water districts having been built between 1956 and 1968 (NETR 2024).

Soils

The Natural Resources Conservation Service has mapped three soil units within the Study Area: Granoso sandy loam, 0 to 2 percent slopes, overwash; Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17; and Bakersfield fine sandy loam, drained, 0 to 1 percent slopes (NRCS 2024). These soil types are briefly discussed below.

Granoso sandy loam, 0 to 2 percent slopes, overwash has a parent material of alluvium derived from mixed rock sources. A typical soil profile is sandy loam (0 - 10 inches), loamy sand (10 - 20 inches) then sand (20 - 62 inches). This soil is somewhat excessively drained, has a very low runoff class, a rare frequency of flooding, and no frequency of ponding.

Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17 has a parent material of alluvium derived from igneous and sedimentary rock. A typical soil profile is fine sandy loam (0 - 45 inches) and silt loam (45 - 71 inches). This soil is well drained, has a very low runoff class, a rare frequency of flooding, and no frequency of ponding.

Bakersfield fine sandy loam, drained, 0 to 1 percent slopes has a parent material of alluvium derived from granitoid rock. A typical soil profile is fine sandy loam (0 - 16 inches), stratified sand to loam (19 - 45 inches), loam (45 - 51 inches), stratified sandy loam to silt loam (51 – 58 inches), and stratified sand to loam (58 - 66 inches). This soil is somewhat poorly drained, has a negligible class, a rare frequency of flooding, and no frequency of ponding.

Habitat Types

Vegetation communities within the Study Area include ruderal, barren, and urban. These communities are described in more detail below.

Ruderal

Ruderal habitat is land that retains a soil substrate but is subject to recent or on-going disturbance that prevents the formation of natural vegetation communities. Vegetation in ruderal areas is dominated by naturalized and/or invasive non-native species and ruderal native annuals. The species composition is determined by local colonization potential or past introductions. Ruderal habitat on the Study Area is dominated by a variety of non-native herbs and forbs, including black mustard (*Brassica nigra*), puncturevine (*Tribulus terrestris*), and medusa head (*Elymus caput-medusae*) as well as non-native shrubs such as big saltbush (*Atriplex lentiformis*). Approximately 0.54 acre of the Study Area is composed of ruderal habitat and is present along the borders of fallowed farmlands.

Barren

Barren habitat is defined by its absence of vegetation. Approximately 1.94 acres of the Study Area is barren and has been stripped of vegetation along roadsides and the margins of agricultural operations. The barren areas found within the Study Area did not show signs of mammal burrows that may serve as suitable habitat for special-status wildlife and nesting birds.

Urban

Urban habitat is land that has been modified for human use and vegetation communities are those planted for aesthetic purposes, unmaintained areas will be colonized by similar vegetation as found in ruderal habitats. Urban habitat found within the Study Area includes the roads within the Study Area and the communities served by the Old River MWC and South Kern MWC. Ornamental trees found throughout this habitat include fruitless mulberry (*Morus alba*), Italian cypress (*Cupressus sempervirens*), and California black walnut (*Juglans californica*) Approximately 24.61 acres of the Study Area was classified as Urban. Ornamental trees found within the neighborhood complex may serve as suitable habitat for nesting birds.

Species Observations

There were no special-status plant or wildlife species observed in the Study Area during the field reconnaissance on June 19, 2024. The field reconnaissance was conducted outside of the bloom period when some annual plants would be identifiable, but due to the frequent disturbance activities along Old River Road by agricultural operations, special-status plants are not anticipated to be found within the Study Area. Other wildlife species observed on the Study Area and in the vicinity of the Study Area include red winged blackbird (*Agelaius phoeniceus*), house finch (*Haemorhous mexicanus*), house sparrow (*Passer domesticus*), northern mockingbird (*Mimus polyglottos*), black chinned hummingbird (*Archilochus alexandri*), Anna's hummingbird (*Calypte anna*), and mourning dove (*Zenaida macroura*).

Special-Status Species Evaluation

Evaluation of Regionally-Occurring Special-Status Plant Species

According to the database query, 22 listed and/or special-status plants have the potential to occur in the vicinity of the Study Area (CDFW 2024; CNPS 2024; USFWS 2024). Based on field observations, published information, and literature review, no special-status plants have potential to occur within the Study Area. The frequent disturbance and herbicide application implemented by agricultural activities, and the continued maintenance of urbanized areas do not present suitable habitat for special status-plants.

Evaluation of Regionally-Occurring Special-Status Wildlife Species

According to the database query, 41 listed and/or special-status wildlife have the potential to occur in the vicinity of the Study Area (CDFW 2024; USFWS 2024). Based on field observations, published information, and literature review, one special-status animal has potential to occur within the Study Area: Swainson's hawk (*Buteo swainsoni*). This species has the potential to utilize ornamental trees found within the margins of the urbanized habitat for nesting due to their proximity to suitable foraging habitat. In addition to this special-status wildlife species, other migratory birds and raptors protected under federal, State, and local laws/policies also have the potential to occur within the Study Area. No other critical, or sensitive habitats that would host special-status species were identified within the Study Area.

Special-Status Species with the Potential to Occur on the Study Area

Swainson's Hawk (*Buteo swainsoni*)

Federal Status – Protected by MBTA
State Status – Threatened

Species Description

Swainson's hawk is a California threatened species under the California Endangered Species Act. This hawk migrates from their wintering grounds in the La Pampas Region in Argentina to their breeding grounds in western North America, including the Central Valley of California, from early March through early April. On breeding grounds, Swainson's hawk prefer open habitats, including mixed and short grass grasslands, with scattered trees or shrubs for perching; dry grasslands; irrigated meadows; and edges between two habitat types. Breeding occurs from late March to late August, peaking in late May through July (Zeiner et al. 1990). In the Central Valley of California, Swainson's hawk nest in stands with few trees in juniper-sage flats, riparian woodlands, and oak woodlands. This species nests in proximity to suitable foraging habitat, which can be located within a 10-mile radius of an active nesting site. Swainson's hawks leave their breeding grounds to return to their wintering grounds in late August or early September.

Survey History

This species is not well documented in the CNDDB in the surrounding area and there is one CNDDB reported occurrence in a five-mile radius of the Study Area (CDFW 2024). This observance was recorded 4.7 miles from the Study Area along the east side of Highway 99 in 2019. This record highlights the nesting pair utilizing a eucalyptus tree for their nest and foraging in the adjacent non-native annual grasslands.

Habitat Suitability

The trees present along the boundaries of the Study Area and within the urban portions of the Study Area provide suitable nesting habitat for the species. The local agricultural fields would provide suitable foraging habitat for a nesting pair if they were to utilize any urban trees for nesting. There is a moderate potential for this species to occur within the Study Area.

Potential for Adverse Effects

In the absence of mitigation measures, project construction activities have the potential to affect Swainson's hawk if it were to nest within the Study Area. If Swainson's hawk were to nest within or adjacent to the site, impacts to nesting could occur through noise, vibration, and the presence of construction equipment and personnel. Potential impacts to nesting Swainson's hawk would be a significant impact. Eggs and young still dependent on the nest would be susceptible to injury or mortality through physical contact or through nest abandonment caused by displacement of adults. Needless destruction of eggs or young would be a violation of the Fish and Game Code and a significant impact. Implementation of the recommended mitigation measure for nesting birds would reduce potential impacts to Swainson's hawk to less than significant.

Nesting Migratory Birds and Raptors

Migratory birds are protected under the MBTA of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR 10; this also includes feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Additionally, 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., hawks, owls, eagles, and falcons), including their nests or eggs; Section 3513 specifically states that it is unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

A number of migratory birds and raptors have the potential to nest in or adjacent to the Study Area. Suitable nest locations within and adjacent to the Study Area include trees, housing eaves, other artificial structures, and bare ground. There is potential for direct and indirect impacts to nesting birds if they were to nest within or adjacent to the Study Area. Eggs and young still dependent on the nest would be susceptible to injury or mortality through physical contact or through nest abandonment caused by the displacement of adults. Needless destruction of eggs or young would be a violation of the Fish and Game Code and a significant impact.

Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under CEQA, Section 1600 of the FGC (i.e., riparian areas) and/or Sections 401 and 404 of the CWA, which include wetlands and other waters of the U.S. Additionally, sensitive habitats, including native trees and oak woodland habitat, are protected under the specific policies outlined in the Kern County General Plan. Sensitive habitats were not identified within the Study Area and there is not anticipated to be any significant impact to sensitive habitats including regulated aquatic resources.

Biological Resources Conclusions and Recommendations

The Study Area consists of ruderal, urban, and barren habitat communities. The project impact footprint is limited to urban habitats strictly within paved areas. There are no anticipated impacts to sensitive habitats or waters through the implementation of the proposed project.

Mitigation Measures for Swainson's Hawk

The state and federally protected Swainson's hawk has a moderate potential to occur within or adjacent to the Study Area by utilizing trees within the urban areas for nesting habitat due to their proximity to suitable foraging habitat. Therefore, the Study Area provides suitable nesting habitat for Swainson's hawks and disturbance within the proposed project footprint could potentially impact this species through disturbance to nesting pairs including potential nest abandonment if construction occurs during the nesting season and active nests are located within or nearby to the project site during construction.

Mitigation Measures for Nesting Migratory Birds and Raptors

The Study Area contains suitable habitat for Swainson's hawk and other nesting migratory birds and raptors. Construction activities could result in disturbance of nest sites through temporary increases in ambient noise levels and increased human activity. If project activities take place during the nesting season (February 1 to August 31), nesting birds may be impacted. If project activities take place outside of the nesting season, no mitigation measures for nesting birds are required.

Active nests and nesting birds are protected by the California Fish and Game Code Sections 3503 and 3503.5, 3513 and the MBTA. Ground-disturbing and other development activities including grading, vegetation clearing, tree removal/trim, and construction could impact nesting birds if these activities occur during the nesting season.

The following measures are recommended to avoid or minimize impacts to nesting birds:

- To avoid impacts to nesting birds, all ground disturbing activity and all vegetation clearing, including removal of trees and shrubs, should be completed between September 1 and January 31, if feasible.

- If vegetation removal and grading activities begin during the nesting season (February 1 to August 31), a qualified biologist should conduct a pre-construction survey of the project footprint for active nests. Additionally, the surrounding 500 feet should be surveyed for active raptor nests, where accessible. A windshield survey for potential Swainson's hawk nests should be conducted within 0.25 mile of the footprint as part of the survey. The pre-construction survey should be conducted within 14 days before the commencement of ground-disturbing activities. If the pre-construction survey shows that there is no evidence of active nests, a letter

report should be prepared to document the survey, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, an additional survey is required before starting work. If active nests are identified, the following measure should be implemented:

    - A species-specific buffer should be established by a qualified biologist around active nests and no construction activities within the buffer should be allowed until a qualified biologist has determined that the nest is no longer active (i.e., the nestlings have fledged and are no longer reliant on the nest, or the nest has failed). Encroachment into the buffer may occur at the discretion of a qualified biologist. Any encroachment into the buffer should be monitored by a qualified biologist to determine whether nesting birds are being impacted.

- A qualified biologist should conduct environmental awareness training to all project-related personnel prior to the initiation of work within the nesting season (February 1-August 31).

Summary of Avoidance and Minimization Measures

The following avoidance and minimization measures are recommended to reduce potential project impacts to the following special-status wildlife species:

- Conduct pre-construction surveys for nesting birds including Swainson's hawk within 14 days before the start of construction if work begins between February 1 and August 31
- Conduct a contractor awareness training session prior to the site of site disturbance if construction occurs during the nesting season.

Attachments:
Attachment A – Figures
Attachment B – Special-status Species Database Queries
Attachment C – Representative Photographs of the Study Area
Attachment D – Applicable Local Policies

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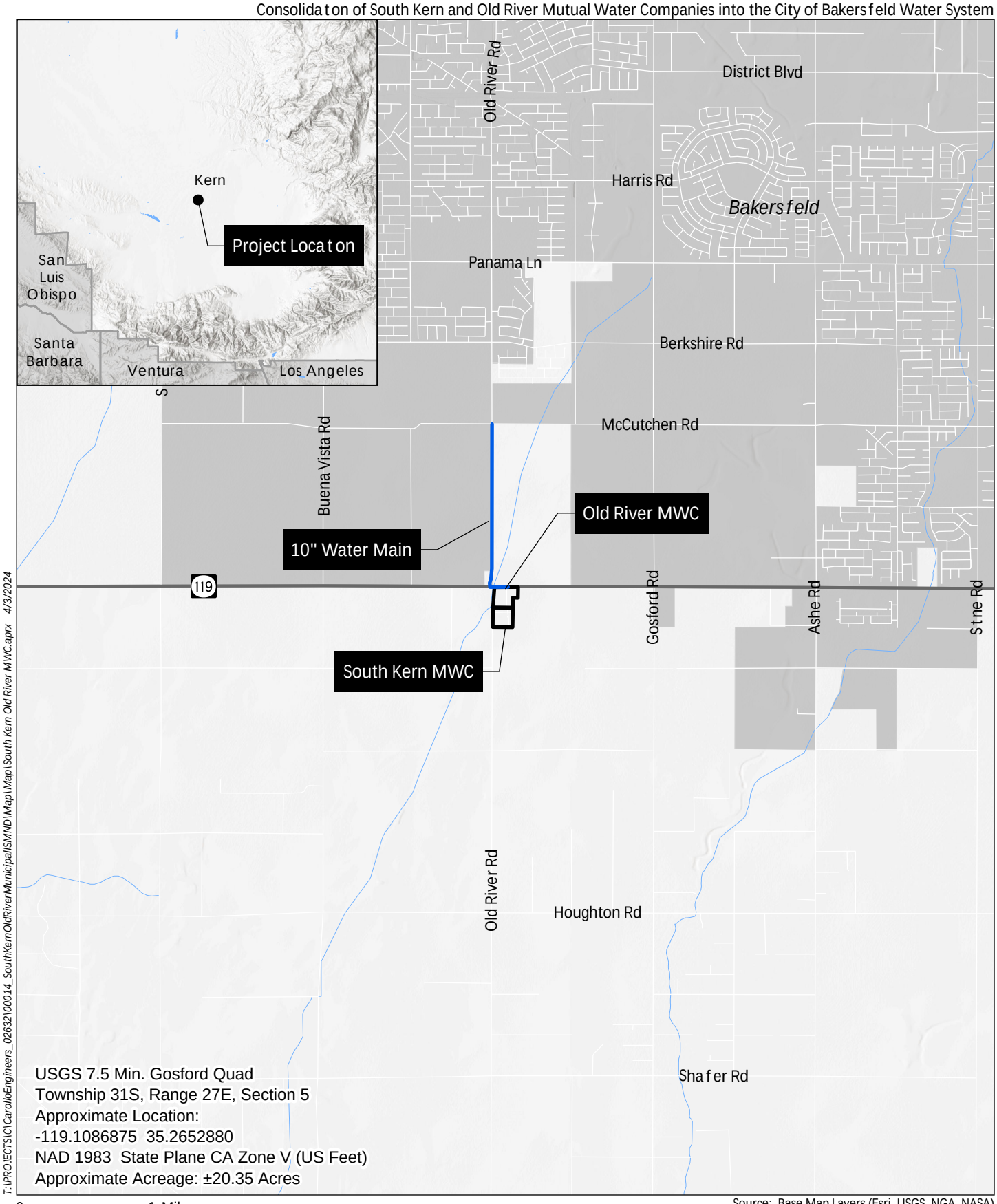
Attachment A

Figures



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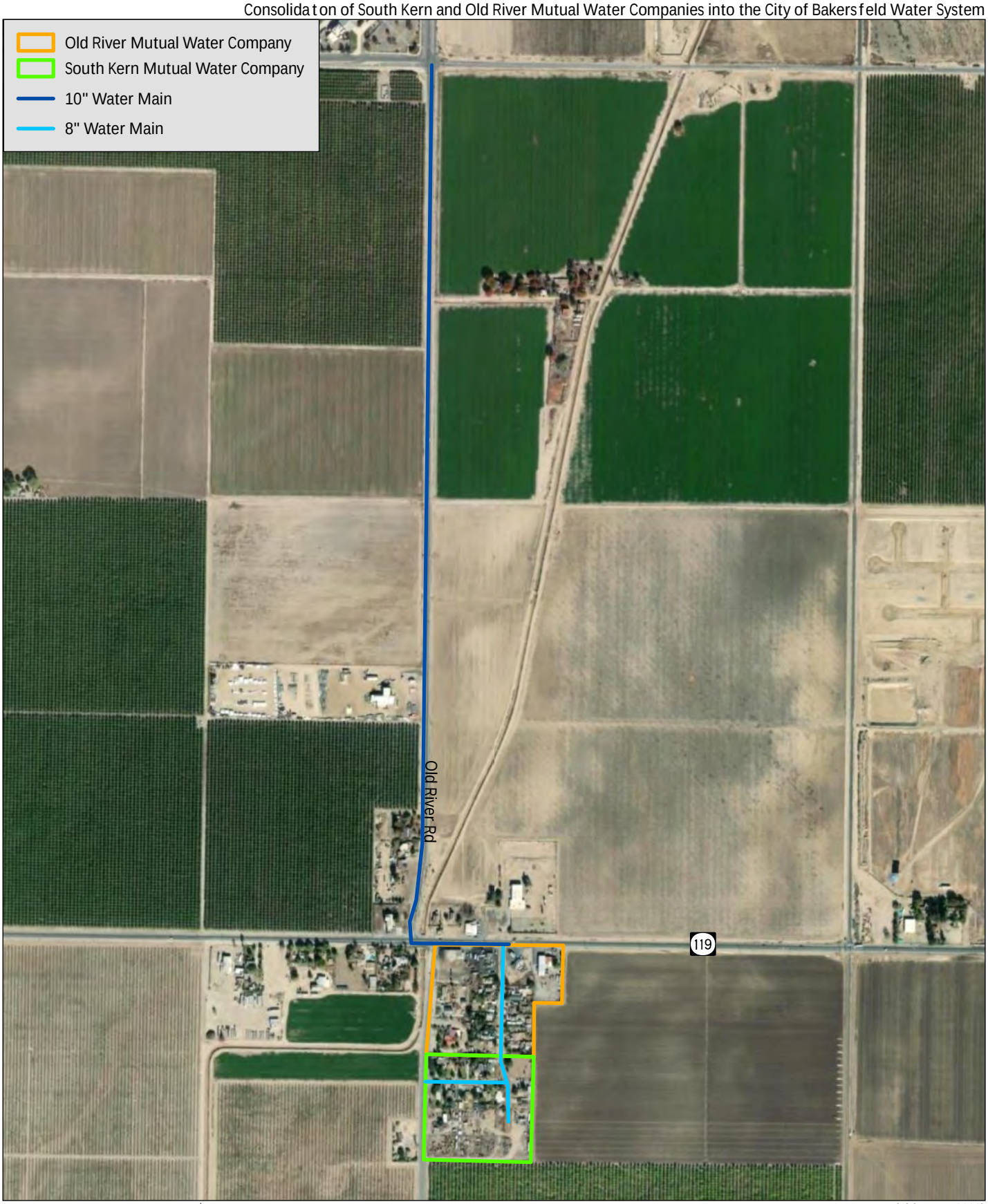
HELIX Environmental Planning

Site and Vicinity Map

Figure 1



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Source: Aerial (Maxar, 2022)

HELIX Environmental Planning

Project Location and Mutual Water Company Site Locations

Figure 2

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Source: Aerial (Maxar, 2022)

HELIX Environmental Planning

Site Plan

Figure 3

HELIX
Environmental Planning

Biological Communities Map

Figure 4

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HELIX Environmental Planning

Biological Communities Map

Figure 4a

Source: Aerial (Maxar, 2023)

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HELIX Environmental Planning

Biological Communities Map

Figure 4b

Attachment B

Special-status Species Database Queries

CNPS Rare Plant Inventory

Search Results

5 matches found. Click on scientific name for details

Search Criteria: CRPR is one of [1A:1B:2A:2B:3:4] Fed List is one of [FE:FT:FC] or State List is one of [CE:CT:CR:CC] , 9-Quad include [3511838:3511931:3511848:3511941:3511942:3511932:3511828:3511921:3511922]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED	PHOTO
Atriplex tularensis	Bakersfield smallscale	Chenopodiaceae	annual herb	Jun-Oct	None	CE	GX	SX	1A	Yes	1974-01-01	No Photo Available
Caulanthus californicus	California jewelflower	Brassicaceae	annual herb	Feb-May	FE	CE	G1	S1	1B.1	Yes	1984-01-01	No Photo Available
Eremalche parryi ssp. *kernensis*	Kern mallow	Malvaceae	annual herb	Jan(Feb)Mar-May	FE	None	G3G4T3	S3	1B.2	Yes	1974-01-01	No Photo Available
Monolopia congdonii	San Joaquin woollythreads	Asteraceae	annual herb	Feb-May	FE	None	G2	S2	1B.2	Yes	1988-01-01	No Photo Available
Opuntia basilaris var. *treleasei*	Bakersfield cactus	Cactaceae	perennial stem	Apr-May	FE	CE	G5T1	S1	1B.1	Yes	1974-01-01	No Photo Available

Showing 1 to 5 of 5 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2024. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 16 July 2024].

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Lamont (3511838) OR Gosford (3511931) OR Oil Center (3511848) OR Oildale (3511941) OR Rosedale (3511942) OR Stevens (3511932) OR Weed Patch (3511828) OR Conner (3511921) OR Millux (3511922))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAABF02020	***Spea hammondii*** western spadefoot	Proposed Threatened	None	G2G3	S3S4	SSC
ABNGA04040	***Ardea alba*** great egret	None	None	G5	S4	
ABNGA06030	***Egretta thula*** snowy egret	None	None	G5	S4	
ABNGE02020	***Plegadis chihi*** white-faced ibis	None	None	G5	S3S4	WL
ABNJB01010	***Dendrocygna bicolor*** fulvous whistling-duck	None	None	G5	S1	SSC
ABNKC06010	***Elanus leucurus*** white-tailed kite	None	None	G5	S3S4	FP
ABNKC19070	***Buteo swainsoni*** Swainson's hawk	None	Threatened	G5	S4	
ABNNB03031	***Charadrius nivosus nivosus*** western snowy plover	Threatened	None	G3T3	S3	SSC
ABNRB02022	***Coccyzus americanus occidentalis*** western yellow-billed cuckoo	Threatened	Endangered	G5T2T3	S1	
ABNSB10010	***Athene cunicularia*** burrowing owl	None	None	G4	S2	SSC
ABPAT02011	***Eremophila alpestris actia*** California horned lark	None	None	G5T4Q	S4	WL
ABPBXB0020	***Agelaius tricolor*** tricolored blackbird	None	Threatened	G1G2	S2	SSC
ABPBXB3010	***Xanthocephalus xanthocephalus*** yellow-headed blackbird	None	None	G5	S3	SSC
AMABA01102	***Sorex ornatus relictus*** Buena Vista Lake ornate shrew	Endangered	None	G5T1	S1	SSC
AMACC05032	***Lasiurus cinereus*** hoary bat	None	None	G3G4	S4	
AMACD02011	***Eumops perotis californicus*** western mastiff bat	None	None	G4G5T4	S3S4	SSC
AMAFB04040	***Ammospermophilus nelsoni*** Nelson's (=San Joaquin) antelope squirrel	None	Threatened	G2G3	S3	
AMAFD01060	***Perognathus inornatus*** San Joaquin pocket mouse	None	None	G2G3	S2S3	
AMAFD03080	***Dipodomys ingens*** giant kangaroo rat	Endangered	Endangered	G1G2	S2	

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AMAFD03152	***Dipodomys nitratoides nitratoides*** Tipton kangaroo rat	Endangered	Endangered	G3T1T2	S2	
AMAFD03153	***Dipodomys nitratoides brevinasus*** short-nosed kangaroo rat	None	None	G3T1T2	S1S2	SSC
AMAFF06021	***Onychomys torridus tularensis*** Tulare grasshopper mouse	None	None	G5T1T2	S1S2	SSC
AMAJA03041	***Vulpes macrotis mutica*** San Joaquin kit fox	Endangered	Threatened	G4T2	S3	
AMAJF04010	***Taxidea taxus*** American badger	None	None	G5	S3	SSC
ARAAD02031	***Actinemys marmorata*** northwestern pond turtle	Proposed Threatened	None	G2	SNR	SSC
ARACC01050	***Anniella grinnelli*** Bakersfield legless lizard	None	None	G2G3	S2S3	SSC
ARACC01070	***Anniella spp.*** California legless lizard	None	None	G3G4	S3S4	SSC
ARACF07010	***Gambelia sila*** blunt-nosed leopard lizard	Endangered	Endangered	G1	S2	FP
ARACF12100	***Phrynosoma blainvillii*** coast horned lizard	None	None	G4	S4	SSC
ARADB01017	***Arizona elegans occidentalis*** California glossy snake	None	None	G5T2	S2	SSC
ARADB21021	***Masticophis flagellum ruddocki*** San Joaquin coachwhip	None	None	G5T2T3	S3	SSC
CTT36210CA	***Valley Sink Scrub*** Valley Sink Scrub	None	None	G1	S1.1	
CTT36220CA	***Valley Saltbush Scrub*** Valley Saltbush Scrub	None	None	G2	S2.1	
CTT42120CA	***Valley Sacaton Grassland*** Valley Sacaton Grassland	None	None	G1	S1.1	
CTT61410CA	***Great Valley Cottonwood Riparian Forest*** Great Valley Cottonwood Riparian Forest	None	None	G2	S2.1	
CTT63420CA	***Great Valley Mesquite Scrub*** Great Valley Mesquite Scrub	None	None	G1	S1.1	
IICOL48011	***Desmocerus californicus dimorphus*** valley elderberry longhorn beetle	Threatened	None	G3T3	S3	
IICOL4C020	***Lytta moesta*** moestan blister beetle	None	None	G2	S2	
IICOL4C040	***Lytta morrisoni*** Morrison's blister beetle	None	None	G1G2	S2	
IIDIP05010	***Rhaphiomidas trochilus*** San Joaquin Valley giant flower-loving fly	None	None	G1	S1	

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
IIHYM24480	***Bombus crotchii*** Crotch's bumble bee	None	Candidate Endangered	G2	S2	
IILEPP2012	***Danaus plexippus plexippus pop. 1*** monarch - California overwintering population	Candidate	None	G4T1T2Q	S2	
IMBIV19010	***Gonidea angulata*** western ridged mussel	None	None	G3	S2	
IMGASC2080	***Helminthoglypta callistoderma*** Kern shoulderband	None	None	G1	S1	
NBMUS7L090	***Tortula californica*** California screw moss	None	None	G2G3	S2?	1B.2
PDAST5L0A1	***Lasthenia glabrata ssp. coulteri*** Coulter's goldfields	None	None	G4T2	S2	1B.1
PDAST5N0A0	***Layia leucopappa*** Comanche Point layia	None	None	G1	S1	1B.1
PDAST8Y070	***Stylocline citroleum*** oil neststraw	None	None	G3	S3	1B.1
PDAST8Y080	***Stylocline masonii*** Mason's neststraw	None	None	G1	S1	1B.1
PDASTA8010	***Monolopia congdonii*** San Joaquin woollythreads	Endangered	None	G2	S2	1B.2
PDBRA31010	***Caulanthus californicus*** California jewelflower	Endangered	Endangered	G1	S1	1B.1
PDCAC0D055	***Opuntia basilaris var. treleasei*** Bakersfield cactus	Endangered	Endangered	G5T1	S1	1B.1
PDCHE040B0	***Atriplex cordulata var. cordulata*** heartscale	None	None	G3T2	S2	1B.2
PDCHE04240	***Atriplex tularensis*** Bakersfield smallscale	None	Endangered	GX	SX	1A
PDCHE04371	***Atriplex coronata var. vallicola*** Lost Hills crownscale	None	None	G4T3	S3	1B.2
PDFAB0F421	***Astragalus hornii var. hornii*** Horn's milk-vetch	None	None	GUT1	S1	1B.1
PDMAL0C031	***Eremalche parryi ssp. kernensis*** Kern mallow	Endangered	None	G3G4T3	S3	1B.2
PDPAP0A071	***Eschscholzia lemmonii ssp. kernensis*** Tejon poppy	None	None	G5T2	S2	1B.1
PDPLM03070	***Eriastrum hooveri*** Hoover's eriastrum	Delisted	None	G3	S3	4.2
PDPLM0C0S0	***Navarretia setiloba*** Piute Mountains navarretia	None	None	G2	S2	1B.1
PDRAN0B1J0	***Delphinium recurvatum*** recurved larkspur	None	None	G2?	S2	1B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDSCR0J0D1	***Chloropyron molle ssp. hispidum*** hispid salty bird's-beak	None	None	G2T1	S1	1B.1
PDSCR1B240	***Diplacus pictus*** calico monkeyflower	None	None	G2	S2	1B.2
PMLIL0D190	***Calochortus striatus*** alkali mariposa-lily	None	None	G3	S2S3	1B.2
PMPOA3D020	***Imperata brevifolia*** California satintail	None	None	G3	S3	2B.1
PMPOA53110	***Puccinellia simplex*** California alkali grass	None	None	G2	S2	1B.2

Record Count: 66

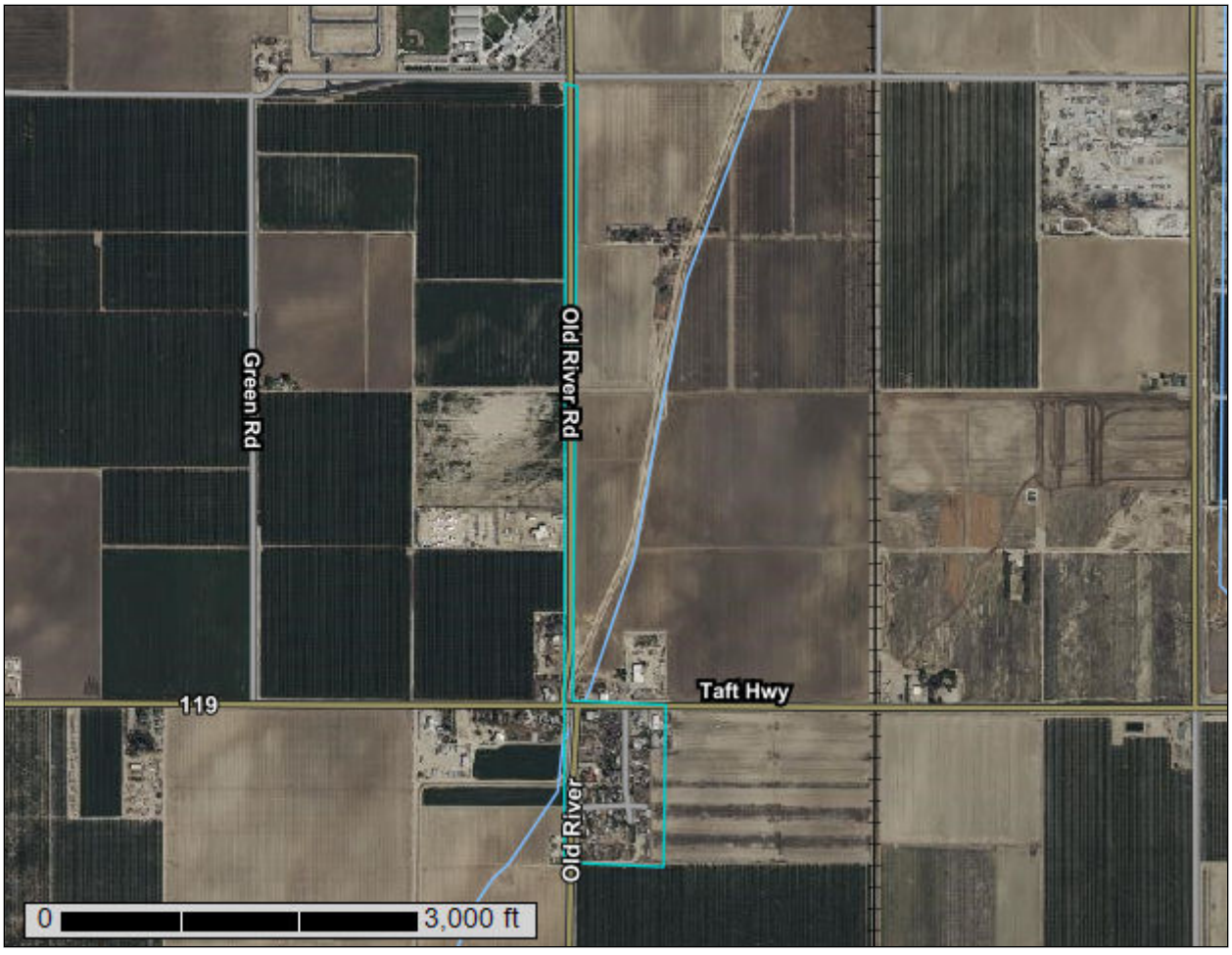
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Kern County, California, Northwestern Part; and Kern County, California, Southwest Part



July 16, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


119° 7' 6" W
119° 5' 54" W
35° 16' 59" N
35° 15' 41" N
307600
307900
308200
308500
308800
309100
307300
3906300
3906000
3905700
3905400
3905100
3904800
3904500
3904200
Mccutchen Rd
174
127
174
119
Taft Hwy
101
Old River
Soil Map may not be valid at this scale.
Map Scale: 1:11,700 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0 150 300 600 900
Feet
0 500 1000 2000 3000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Kern County, California, Northwestern Part
Survey Area Data: Version 16, Aug 31, 2023

Soil Survey Area: Kern County, California, Southwest Part
Survey Area Data: Version 14, Aug 31, 2023

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

MAP LEGEND

MAP INFORMATION

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 12, 2022—Mar 22, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
127	Granoso sandy loam, 0 to 2 percent slopes, overwash	1.0	2.7%
174	Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17	9.6	26.2%
Subtotals for Soil Survey Area		**10.6**	**28.9%**
Totals for Area of Interest		**36.6**	**100.0%**

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
101	Bakersfield fine sandy loam, drained, 0 to 1 percent slopes	26.0	71.1%
Subtotals for Soil Survey Area		**26.0**	**71.1%**
Totals for Area of Interest		**36.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not

mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Kern County, California, Northwestern Part

127—Granoso sandy loam, 0 to 2 percent slopes, overwash

Map Unit Setting

National map unit symbol: hkh5
Elevation: 300 to 490 feet
Mean annual precipitation: 5 to 7 inches
Mean annual air temperature: 62 to 65 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Granoso and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Granoso

Setting

Landform: Alluvial fans, flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from mixed rock sources

Typical profile

Ap - 0 to 10 inches: sandy loam
C1 - 10 to 20 inches: loamy sand
C2 - 20 to 36 inches: sand
C3 - 36 to 62 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Maximum salinity: Nonsaline to very slightly saline (0.1 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: No

Minor Components

Kimberlina

Percent of map unit: 3 percent
Landform: Flood plains, alluvial fans
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Milagro, fine sandy loam

Percent of map unit: 3 percent
Landform: Fan skirts, alluvial fans
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Bakersfield

Percent of map unit: 3 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: Yes

Excelsior

Percent of map unit: 3 percent
Landform: Alluvial fans, flood plains
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Wasco

Percent of map unit: 2 percent
Landform: Alluvial fans, flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R017XY904CA - Subirrigated Deep Alluvial Fans
Hydric soil rating: No

Unnamed, slough

Percent of map unit: 1 percent
Landform: Sloughs
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

174—Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17

Map Unit Setting

National map unit symbol: 2ss96
Elevation: 120 to 1,160 feet
Mean annual precipitation: 4 to 8 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Kimberlina and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kimberlina

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 9 inches: fine sandy loam
C - 9 to 45 inches: fine sandy loam
2C - 45 to 71 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to slightly saline (0.3 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: No

Minor Components

Wasco

Percent of map unit: 7 percent
Landform: Alluvial fans
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Milham

Percent of map unit: 6 percent
Landform: Alluvial fans
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Unnamed

Percent of map unit: 2 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Kern County, California, Southwest Part

101—Bakersfield fine sandy loam, drained, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: hnck
Elevation: 290 to 410 feet
Mean annual precipitation: 5 to 6 inches
Mean annual air temperature: 62 to 65 degrees F
Frost-free period: 250 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Bakersfield, drained, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bakersfield, Drained

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitoid rock

Typical profile

Ap1 - 0 to 3 inches: fine sandy loam
Ap2 - 3 to 10 inches: fine sandy loam
A - 10 to 16 inches: fine sandy loam
C1 - 16 to 29 inches: stratified sand to loam
C2 - 29 to 45 inches: stratified sand to loam
Ck - 45 to 51 inches: loam
C'1 - 51 to 58 inches: stratified sandy loam to silt loam
C'2 - 58 to 66 inches: stratified sand to loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 3 percent
Maximum salinity: Nonsaline to slightly saline (1.0 to 5.0 mmhos/cm)
Sodium adsorption ratio, maximum: 12.0
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B

Ecological site: R017XY906CA - Non-Alkali San Joaquin Valley Desert
Hydric soil rating: Yes

Minor Components

Granoso
Percent of map unit: 4 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Hydric soil rating: No

Vineland
Percent of map unit: 4 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Hydric soil rating: Yes

Bakersfield, saline-sodic
Percent of map unit: 4 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Hydric soil rating: Yes

Oldriver
Percent of map unit: 4 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Hydric soil rating: Yes

Granoso, overwash
Percent of map unit: 4 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Hydric soil rating: No

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: 07/16/2024 21:22:50 UTC
Project Code: 2024-0117198
Project Name: S. Kern/Old River MWD

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2024-0117198
Project Name: S. Kern/Old River MWD
Project Type: Wastewater Pipeline - New Constr - Below Ground
Project Description: Consolidation of water districts via water pipeline
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.27454165,-119.10980074271215,14z

Counties: Kern County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Buena Vista Lake Ornate Shrew *Sorex ornatus relictus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1610	Endangered
Giant Kangaroo Rat *Dipodomys ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6051	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat *Dipodomys nitratoides nitratoides* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7247	Endangered

BIRDS

NAME	STATUS
California Condor *Gymnogyps californianus* Population: Wherever found, except where listed as an experimental population There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8193	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

REPTILES

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

NAME	STATUS
Western Spadefoot *Spea hammondii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

CRUSTACEANS

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/498

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Bakersfield city
Name: David Pfuhler
Address: 1180 Iron Point Road
City: Folsom
State: CA
Zip: 95630
Email davidp@helixepi.com
Phone: 9175741389

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Bakersfield city

Attachment C

Representative Photographs of the Study Area

Photo 1**.** Representative view of an urban residential area and ornamental trees. Photo date 6/19/2024.

Photo 2. Representative view of barren and ruderal roadside habitat. Photo date 6/19/2024.

Photo 3. Representative view of potential Swainson's hawk nesting habitat. Photo date 5/1/2024.

Attachment D

Applicable Local Policies

M. In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

N. The County shall develop a list of Native American organizations and individuals who desire to be notified of proposed discretionary projects. This notification will be accomplished through the established procedures for discretionary projects and CEQA documents.

O. On a project specific basis, the County Planning Department shall evaluate the necessity for the involvement of a qualified Native American monitor for grading or other construction activities on discretionary projects that are subject to a CEQA document.

1.10.4 Wireless Communication Facilities

Policy

26. Discretionary development of wireless communication facilities shall be consistent with the Federal Telecommunication Act.

Implementation Measure

P. Discretionary development of wireless communication facilities shall be in accordance with Chapter 19.91 of the Zoning Ordinance and the Federal Telecommunication Act.

1.10.5 Threatened and Endangered Species

Policies

27. Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.

28. County should work closely with State and federal agencies to assure that discretionary projects avoid or minimize impacts to fish, wildlife, and botanical resources.

29. The County will seek cooperative efforts with local, State, and federal agencies to protect listed threatened and endangered plant and wildlife species through the use of conservation plans and other methods promoting management and conservation of habitat lands.

30. The County will promote public awareness of endangered species laws to help educate property owners and the development community of local, State, and

federal programs concerning endangered species conservation issues.

31. Under the provisions of the California Environmental Quality Act (CEQA), the County, as lead agency, will solicit comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service when an environmental document (Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report) is prepared.

32. Riparian areas will be managed in accordance with United States Army Corps of Engineers, and the California Department of Fish and Game rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

Implementation Measures

Q. Discretionary projects shall consider effects to biological resources as required by the California Environmental Quality Act.

R. Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to the California Environmental Quality Act.

S. Pursue the development and implementation of conservation programs with State and federal wildlife agencies for property owners desiring streamlined endangered species mitigation programs.

1.10.6 Surface Water and Groundwater

Policy

33. Water related infrastructure shall be provided in an efficient and cost effective manner.

34. Ensure that water quality standards are met for existing users and future development.

35. Ensure that adequate water storage, treatment, and transmission facilities are constructed concurrently with planned growth.

36. Ensure that appropriate funding mechanisms for water are in place to fund the needed improvements resulting from growth and subsequent development.

37. Ensure maintenance and repair of existing water systems.

FF. Work with Caltrans in implementation of the Scenic Highway Corridor designation for various highways as described in the Circulation Element and protect viewsheds with the use of the SC (Scenic Corridor Combining) District.

GG. Provide for temporary events in accordance with the Kern County Zoning Ordinance.

HH. Develop Specific Plans for communities throughout the County which provide for a mix of land uses to promote employment opportunities and housing, while maintaining a good quality of life.

II. Allow for development of complementary businesses that take advantage of transportation corridors when providing infrastructure and services necessary to maintain adequate health and safety concerns.

JJ. Allow for compatible industrial and commercial growth, in conjunction with airport facilities, in accordance with the Airport Land Use Compatibility Plan.

1.10.10 Oak Tree Conservation

Policies

65. Oak woodlands and large oak trees shall be protected where possible and incorporated into project developments.

66. Promote the conservation of oak tree woodlands for their environmental value and scenic beauty.

Implementation Measures

KK. The following applies to discretionary development projects (General Plan Amendment, zone change, conditional use permit, tract maps, parcel maps, precise development plan) that contains oak woodlands, which are defined as development parcels having canopy cover by oak trees of at least ten percent (10%), as determined from base line aerial photography or by site survey performed by a licensed or certified arborist or botanist. If this study is used in an Environmental Impact Report, then a Registered Professional Forester (RPF) shall perform the necessary analysis.

a. Development parcels containing oak woodlands are subject to a minimum canopy coverage retention standard of thirty percent (30%). The consultant shall include recommendations regarding thinning and diseased tree removal in conjunction with the discretionary project.

b. Use of aerial photography and a dot grid system shall be considered adequate in determining the required canopy coverage standard.

c. Adjustments below thirty percent (30%) minimum canopy standard may be made based on a report to assess the management of oak woodlands.

d. Discretionary development, within areas designated as meeting the minimum canopy standard, shall avoid the area beneath and within the trees unaltered drip line unless approved by a licensed or certified arborist or botanist.

LL. The following applies to development of parcels having oak tree canopy cover of less than ten percent (10%), but containing individual oak trees equal to or greater than a 12-inch diameter trunk at 4.5 feet breast height.

a. Such trees shall be identified on plot plans.

b. Discretionary development shall avoid the area beneath and within the trees unaltered drip line unless approved by a licensed or certified arborist or botanist.

c. Specified tree removal related to the discretionary action may be granted by the decision making body upon showing that a hardship exists based on substantial evidence in the record.

Appendix C

Cultural Resources Technical Letter Report

HELIX Environmental Planning, Inc.
1180 Iron Point Road, Suite 130
Folsom, CA 95630
916.365.8700 tel
619.462.0552 fax
www.helixepi.com

July 24 2024 Project # 02632.00014.001

Sri Varadaraj, PE
Carollo Engineers
1401 Fulton Street, Suite 802
Fresno, CA 93721
SVaradaraj@carollo.com | 559.436.6616

Subject: Cultural Resources Assessment for the Consolidation of South Kern and Old River Municipal Water Companies into the City of Bakersfield Water System Project, Kern County, California

Dear Mr. Varadaraj,

This letter report documents the results of a Cultural Resources Assessment (CRA) conducted by HELIX Environmental Planning, Inc. (HELIX) for the above-referenced project. The project, which is located in Kern County, California, southwest of the city of Bakersfield, involves the abandonment of the South Kern Mutual Water Company (MWC) and the Old River MWC wells and will extend the City of Bakersfield's (City) water system to serve the areas previously served by these two MWCs (Attachment A, Figure 1). This CRA was conducted to address the requirements of the California Environmental Quality Act (CEQA), which require lead agencies to assess whether a project would have a significant impact on the environment, including cultural resources. This CRA involved database queries, background research, and native American outreach.

Project Description

The Old River MWC and South Kern MWC currently provide water service to residential and commercial customers to a 10.7-acre area at the southeast corner of Old River Road and State Route (SR) 199 in unincorporated Kern County. Each MWC operates using a single well, located within their respective service areas, which provides water to adjacent parcels and nearby customers. Water delivered by the Old River MWC and South Kern MWC wells have been found to contain uranium and 1, 2, 3-trichloropropane levels that exceed the maximum contaminant levels established by state and federal regulations., Both systems also lack source reliability and storage capacity to serve their customers, as well as the technical, managerial, and financial capacity to continue service.

The proposed project would abandon the Old River MWC and the South Kern MWC wells and extend the City water system to serve the areas previously served by these two MWCs. This effort will consist of the construction of approximately 6,000 linear feet of new 10-inch water main, as well as 1,600 linear feet of 8-inch lateral pipelines with connections to 29 households. Three fire hydrants would also be installed

for use in case of emergency. The point of connection to the City water system would be the existing 16-inch diameter water main at McCutchen Road and Old River Road. Construction of the pipeline would take place within disturbed portions of Old River Road, SR-119, Par Street, and Beam Street. Pipeline trench depth is expected to be between four and ten feet, with a total excavation width of five feet. It is anticipated that construction of the pipeline would proceed at a rate of approximately 200 linear feet per day.

During construction, approximately 4,000 cubic yards of soil will be excavated and backfilled once the pipe has been installed. An excavator, trencher, and pipe layer will be used to create a trench and lay pipe within it, as well as trench shoring equipment to keep the trench open while work is being performed. A steel auger will be used to cut through soil as pipe is advanced using trenchless installation for portions of the pipe that will be installed under roads and culverts. Once pipe installation is completed, soil will be backfilled, and a compactor will be used to compact the soil above the pipe.
The Project Area is located within Sections 31 and 32 of Township 30 South, Range 27 East, and Sections 3 and 6 of Township 31 South, Range 27 East, Mount Diablo Baseline Meridian, and is depicted on the United States Geological Service (USGS) 7.5-minute *Gosford, California* quadrangle (Attachment A, Figures 1, 2, and 3).

Qualifications

This CRA was conducted by HELIX Senior Archaeologist Benjamin Siegel, MA, RPA. Mr. Siegel meets the Secretary of the Interior's *Professional Qualifications Standards* for Archeology (36 CFR Part 61) and has 14 years of professional cultural resource experience throughout California and the United States. He has overseen numerous projects for compliance with CEQA and Section 106 of the National Historic Preservation Act (NHPA). A Resume for Mr. Siegel is included in Attachment B.

REGULATORY FRAMEWORK

California Environmental Quality Act

Pursuant to CEQA, a historical resource is a resource listed in, or eligible for listing in, the California Register of Historical Resources (CRHR). In addition, resources included in a local register of historic resources, or identified as significant in a local survey conducted in accordance with state guidelines, are also considered historic resources under CEQA, unless a preponderance of the facts demonstrates otherwise. According to CEQA, the fact that a resource is not listed in, or determined eligible for listing in, the CRHR, or is not included in a local register or survey, shall not preclude a Lead Agency, as defined by CEQA, from determining that the resource may be a historic resource as defined in California Public Resources Code (PRC) §5024.1.7.

CEQA applies to archaeological resources when (1) the historic or prehistoric archaeological resource satisfies the definition of a historical resource, or (2) the historic or prehistoric archaeological resource satisfies the definition of a "unique archaeological resource." A unique archaeological resource is an archaeological artifact, object, or site that has a high probability of meeting any of the following criteria (PRC §21083.2(g)):

1. The archaeological resource contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information.

2. The archaeological resource has a special and particular quality, such as being the oldest of its type or the best available example of its type.

3. The archaeological resource is directly associated with a scientifically-recognized important prehistoric or historic event or person.

California Register of Historical Resources

Created in 1992 and implemented in 1998, the CRHR is "an authoritative guide in California to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC §5024.1(a)). Certain properties, including those listed in or formally determined eligible for listing in the National Register of Historic Places (NRHP) and California Historical Landmarks (CHL), numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest program, identified as significant in historic resources surveys, or designated by local landmarks programs may be nominated for inclusion in the CRHR.

A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission determines that it meets one or more of the following criteria, which are modeled on NRHP criteria (PRC §5024.1(c)):

Criterion 1: It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

Criterion 2: It is associated with the lives of persons important in our past.

Criterion 3: It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values.

Criterion 4: It has yielded, or may be likely to yield, information important in history or prehistory.

Resources nominated to the CRHR must retain enough of their historic character or appearance to be recognizable as historic resources and to convey the reasons for their significance. It is possible that a resource whose integrity does not satisfy NRHP criteria may still be eligible for listing in the CRHR. A resource that has lost its historic character or appearance may still have sufficient integrity for the CRHR if, under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data. Resources that have achieved significance within the past 50 years also may be eligible for inclusion in the CRHR, provided that enough time has lapsed to obtain a scholarly perspective on the events or individuals associated with the resource.

California Health and Safety Code §7050.5

Section 7050.5 of the California Health and Safety Code states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined if the remains are subject to the coroner's authority. If the human remains are of Native American origin,

the coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification.

California Public Resources Code §5097.98

Section 5097.98 of the California Public Resources Code states that the NAHC, upon notification of the discovery of Native American human remains pursuant to Health and Safety Code Part 7050.5, shall immediately notify those persons (i.e., the Most Likely Descendant or "MLD") it believes to be descended from the deceased. With permission of the landowner or a designated representative, the MLD may inspect the remains and any associated cultural materials and make recommendations for treatment or disposition of the remains and associated grave goods. The MLD shall provide recommendations or preferences for treatment of the remains and associated cultural materials within 48 hours of being granted access to the site.

Native American Heritage Commission

PRC Section 5097.91 established the Native American Heritage Commission (NAHC), whose duties include the inventory of places of religious or social significance to Native Americans and the identification of known graves and cemeteries of Native Americans on private lands (PRC § 5097.94). The NAHC is responsible for bring forth actions regarding the prohibition or mitigation of severe or irreparable damage to Native American sanctified cemeteries, places of worship, religious or ceremonial sites, or sacred shrines located on public property. PRC § 5097.94 and § 5097.98 specify steps to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner, including repatriation under the Native American Graves and Repatriation Act of 2001 and assisting landowners with developing agreements with appropriate Native American groups for the dignified treatment of Native American burials and associated cultural material.

National Register of Historic Places

The NRHP was established by the National Historic Preservation Act (HPA) of 1966 as "an authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR Part 60.2).

The NRHP recognizes properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. A property is eligible for the NRHP if it is significant under one or more of the following criteria:

- Criterion A: It is associated with events that have made a significant contribution to the broad patterns of our history.
- Criterion B: It is associated with the lives of persons who are significant in our past.
- Criterion C: It embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction.

- Criterion D: It has yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

Cemeteries, birthplaces, graves of historic figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, and properties that are primarily commemorative in nature are not considered eligible for the NRHP unless they satisfy certain conditions. In general, a resource must be at least 50 years old to be considered for the NRHP, unless it satisfies a standard of exceptional importance.

METHODS

To inform this CRA, HELIX requested a records search at the Southern San Joaquin Valley Information Center (SSJVIC), located at California State University in Bakersfield, California; requested a search of the Sacred Lands File (SLF) maintained by the Native American Heritage Commission (NAHC); and conducted outreach with tribal points of contact recommended by the NAHC. The steps involved in each of these tasks are described below. At the request of Carollo Engineers, a pedestrian survey of the project site was not conducted due to the disturbed nature of the areas in which construction will occur.

Records Search

HELIX requested a records search for the project site at the SSJVIC on May 29, 2024. The records search encompassed the project site and a 0.5-mile radius around the project site. The objective of the records search was to identify (1) prior cultural resource investigations completed in the project site; and (2) prehistoric or historic-era resources previously documented in the project site. Additional desktop research included a review of previous study reports, cultural resource records, historic-era USGS topographic maps, historic-era aerial imagery, and the Built Environment Resource Directory of the Office of Historic Preservation.

Native American Outreach. On May 15, 2024, HELIX requested a search of the SLF to identify recorded locations of Native American sacred sites or human remains within the project site. The request letter is provided in Attachment C.

RESULTS

This section describes the results of the background research and Native American outreach components of this CRA.

Records Search

Previous Studies

The SSJVIC Records search revealed that 26 cultural studies have been conducted within the 0.5-mile search radius, 11 of which partially overlap the project site. Table 1 lists the studies within the search radius, and those studies that overlap the project site are described below the table.

Table 1
PREVIOUS STUDIES CONDUCTED WITHIN ONE-HALF MILE OF THE PROJECT SITE

Report	Year	Author(s)	Title	Includes Project Site?	Affiliation
KE-00207	1996	Jensen, Peter M.	Archaeological Inventory Survey, Bakersfield-Taft Fiberoptics Data Transmission Line, Kern County, California	Yes	Jensen & Associates
KE-02030	1998	Fleagle, Dorothy	A Cultural Resources Assessment for the Allen Road and Buena Vista Trunk Sewer Line, Public Works Department, City of Bakersfield, Kern County, CA	Yes	Three Girls and a Shovel, LLC.
KE-02622	2001	McDougall, Dennis P.	Cultural Resources Survey for the Kern Delta Water District Water Banking Project	Yes	Applied EarthWorks, Inc.
KE-03084	2005	Pruett, Catherine Lewis and Murphy, Peggy	A Cultural Resources Assessment for Old River Ranch, Located in southwest Bakersfield, Kern County, California	Yes	Three Girls and a Shovel, LLC.
KE-03293	2006	Hudlow, Scott	A Phase I Cultural Resource Survey for the Steve Antongiovani Annexation/ General Plan Amendment/Zone Change, City of Bakersfield, CA	Yes	Hudlow Cultural Resource Associates
KE-03297	2006	Hudlow, Scott	A Phase I Cultural Resources Survey for Steve Antongionvani Annexation/General Plan Amendment/Zone Change, Old River and McCutchen Roads, City of Bakersfield, CA	Yes	Hudlow Cultural Resource Associates
KE-03401	2006	Romani, John F.	Rehabilitation on Old River Road from SR 119 South to Interstate 5, Near Bakersfield, Kern County, California	Yes	Compass Rose Archaeological, Inc.
KE-03429	2006	Hudlow, Scott M.	A Phase I Cultural Resource Survey for Montecito Properties, City of Bakersfield, California	Yes	Hudlow Cultural Resource Associates
KE-03528	2006	Arrington, Cindy, Bass Bryon, Brown, Joan, Corey, Chris, and Hunt, Kevin	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California	Yes	SWCA Environmental Consultants
KE-03718	2006	Hudlow, Scott M.	A Phase I Cultural Resource Survey for Steve Antongiovani Annexation/General Plan Amendment/Zone Change, City	Yes	Hudlow Cultural Resource Associates

Report	Year	Author(s)	Title	Includes Project Site?	Affiliation
			of Bakersfield, California		
KE-04796	2014	Laurie, Leroy and Pulcheon, Andrew	Archaeological Survey Report for the Old River Road Improvement Project from State Route 166 to State Route 119, Kern County, California	Yes	LSA Associates
KE-02875	2004	Pruett, Catherine Lewis and Jeppson, Patrice L.	Cultural Resources Assessment for Gosford-Panama Partners, a 285 Acre Parcel Located in Southwest Bakersfield, Kern County, California	No	Three Girls and a Shovel, LLC.
KE-02876	2004	Pruett, Catherine Lewis	A Cultural Resources Assessment for 80 Acres, Old River Estates, Located South of Panama Lane and East of Old River Road, Bakersfield, Kern County, California	No	Three Girls and a Shovel, LLC.
KE-02977	2005	Jackson, Thomas L.	Supplemental Cultural Resources Inventory McCutchen 110 Project, GPA/ZC094/1012 General Plan Amendment, Rezone, Annexation, and Circulation Element Amendment	No	Pacific Legacy, Inc.
KE-02993	2004	Schiffman, Robert A. and Gold, Alan P.	Cultural Resource Survey for a 79-Acre Parcel, North of Taft Highway (119) Between Gosford Road and Progress Road in SW Bakersfield, Kern County, California	No	Archaeological Associates of Kern County
KE-03078	2005	Fleagle, Dorothy	A Cultural Resources Assessment for Approximately 90 Acres South of Panama Lane and North of McCutchen Road in South Bakersfield, Kern County, California	No	Three Girls and a Shovel, LLC.
KE-03080	2005	Fleagle, Dorothy	A Cultural Resources Assessment for 80 Acres Immediately West of Old River Road and One-Quarter Mile South of Panama Lane, South Bakersfield, Kern County, California	No	Three Girls and a Shovel, LLC.
KE-03126	2005	Schiffman, Robert A. and Gold, Alan P.	Cultural Resources Survey for a 75-Acre Parcel North of Taft Highway and West of Gosford Road in Bakersfield, Kern County, California	No	Archaeological Associates of Kern County

Report	Year	Author(s)	Title	Includes Project Site?	Affiliation
KE-03177	2005	Pruett, Catherine Lew, Fleagle, Dorothy, and Murphy, Peggy Brooks	Addendum I Cultural Resources Assessment for Gosford-Panama Partners, a 285 Acre Parcel Located in Southwest Bakersfield, Kern County, California	No	Three Girls and a Shovel, LLC.
KE-03519	2005	Hudlow, Scott M.	A Phase I Cultural Resource Survey for a Residential Project at Taft Highway and Buena Vista Road, City of Bakersfield, California	No	Hudlow Cultural Resource Associates
KE-03548	2004	Pruett, Catherine and Jeppson, Patrice	Cultural Resources Assessment for Gosford-Panama Partners, a 285 Acre Parcel Located in SW Bakersfield, Kern County, CA	No	Three Girls and a Shovel, LLC.
KE-03642	2006	Lewis Pruett, Catherine and Fleagle, Dorothy	Excavation Report for Four Sites Near Old River, South of Bakersfield, Kern County, California	No	Three Girls and a Shovel, LLC.
KE-03777	2010	Palm-Leach, Laura, Brandy, Paul, King, Jay, Mikkelsen, Pat, Seil, Libby, Hartman, Lindsay, Bradeen, Jill, Larson, Bryan, Freeman, Joseph, Costello, Julia, Rosenthal, Jeffrey, and Jones, Deborah	Cultural Resources Inventory of Caltrans District 6 Rural Conventional Highways in Fresno, Western Kern, Kings, Madera, and Tulare Counties Summary of Methods and Findings	No	Far Western Anthropological Research Group, Inc.
KE-04477	2014	Hudlow, Scott M.	A Phase I Cultural Resource Survey for S & S Homes Master Land Plan Old River Road, City of Bakersfield, California	No	Hudlow Cultural Resource Associates
KE-05365	2016	Carey, Peter A. and Whitley, David S.	Phase I Survey, Kern High School District Project, Kern County, California	No	ASM Affiliates, Inc.
KE-05441	2022	Hudlow, Scott M.	A Phase I Cultural Resource Survey, Mountain Vista Drive and McCutchen Road, City of Bakersfield, California	No	Hudlow Cultural Resource Associates

Report KE-00207 – *Archaeological Inventory Survey, Bakersfield-Taft Fiberoptics Data Transmission Line, Kern County, California* was written by Peter M. Jensen in 1969. The area examined for Report KE-00207 runs linearly from south to north along Old River Road from Panama Lane and Millux Road, then southwest around the southern Buena Vista Lake border. Report KE-00207's study area overlaps with most of the currently proposed project site along the stretch of Old River Road between McCutchen

Road and Taft Highway (SR-119). Identification tasks associated with report KE-00207 included a records search at the SSJVIC, consultation with the Native American Heritage Preservation Council of Kern County, a literature review, and a pedestrian survey. Ultimately, Report KE-00207 did not identify any cultural resources within the report's study area, nor within the currently proposed project site.

Report KE-02030 – *A Cultural Resources Assessment for the Allen Road and Buena Vista Trunk Sewer Line, Public Works Department, City of Bakersfield, Kern County, CA* was written by Dorothy Fleagle of Three Girls and a Shovel, LLC., in 1998. The study area for Report KE-02030 consisted of an approximately five (5) miles corridor within southwest Bakersfield, Kern County, selected for the Allen Road and Buena Vista Trunk Sewer Line. The study area for Report KE-02030 overlaps with only the northernmost boundary of the currently proposed project site. Report KE-02030 provides an account of the archaeological survey conducted within the report's study area. Identifications tasks associated with Report KE-02030 consisted of a records search at the SSJVIC, prehistoric environmental background research, and a local ethnography. Ultimately, Report KE-02030 did not identify any cultural resources within the report's study area.

Report KE-02622 – *Cultural Resources Survey for the Kern Delta Water District Water Banking Project* was written by Dennis P. McDougall of Applied EarthWorks, Inc., in 2001. The study area examined by Report KE-02622 included 545 acres of land intended for use in the Kern Delta Water District Water Banking Project. The study area of Report KE-02622 overlaps with the southwestern portion of the currently proposed project site along Old River Road. Identification tasks associated with Report KE-02622 involved a records search at the SSJVIC and a field survey of the report's study area. The record search indicated 36 sites and 10 prehistoric artifacts within the one-mile radius of the project site. Report KE-02622 did not identify any cultural resources within the report's study area.

Report KE-3084 – *A Cultural Resources Assessment for Old River Ranch, Located in southwest Bakersfield, Kern County, California* was written by Catherine Lewis Pruett and Peggy Murphy of Three Girls and a Shovel, LLC., in 2005. The report details an archaeological study of 1,853 acres of land in southwest Bakerfield, just north of Taft Highway and south of Panama Lane. The southern portion of the study area associated with Report KE-3084 overlaps with the central portion of the currently proposed project site as it stretches across Old River Road. Identification tasks associated with Report KE-3084 consisted of a records search at the SSJVIC, an ethnographic account, and a pedestrian survey of the report's study area. Three resources associated with this report are within the 0.5-mile radius of the currently proposed project site. These include P-15-011653, a lithic scatter north of a slough channel; P-15-011654, a site with chert and chalcedony flakes present north of the slough channel; and P-15-011655, a mound containing chert flakes, possible groundstone, two non-human bones, and shell fragments. Report KE-3084 identified prehistoric isolates (including stone flakes, groundstones, and hammerstones) and historic-era resources including structures (i.e. residences), roads, and an oil well in the broader vicinity of Report KE-3084's study area; however, Report KE-3084 ultimately did not identify any cultural resources within the currently proposed project site.

Report KE-03293 – *A Phase I Cultural Resource Survey for Steve Antongiovani Annexation/General Plan Amendment/Zone Change, City of Bakersfield, California* was written by Scott M. Hudlow of Hudlow Cultural Resource Associates in 2006. Report KE-03293 covers the study of an approximately 29.31-acre area located between Taft Highway and McCutchen Road, with its eastern border overlapping with a small portion the currently proposed project site's stretch along Old River Road. Report KE-03293 included a record search at the SSJVIC, an environmental background report, a prehistoric chronology

report, an ethnography of the area, and a pedestrian survey of the study area. Ultimately, report KE-03293 did not identify any cultural resources within the report's study area.

Report KE-03297 – *A Phase I Cultural Resource Survey for Steve Antongiovani Annexation/General Plan Amendment/Zone Change, Old River and McCutchen Roads, City of Bakersfield, California* was written by Scott M. Hudlow of Hudlow Cultural Resource Associates in 2006. This study examined an approximately 38-acre parcel of land just to the northeast of the intersection of Old River Road and McCutchen Road, overlapping with the northernmost portion of the currently proposed project site. Report KE-03297 included a record search at the SSJVIC and a pedestrian survey of the study area. Ultimately, Report KE-03297 did not identify any cultural resources within the report's study area.

Report KE-03401 – *Rehabilitation on Old River Road from SR 119 South to Interstate 5, Near Bakersfield, Kern County, California* was written by John F. Romani in 2006. This report documents the cultural resource study of approximately seven miles of Old River Road from Taft Highway to Interstate 5, which overlaps with two small portions of the currently proposed project site's southwestern most corner, and at the intersection of Old River Road and Taft Highway (SR-119). Report KE-03401 details the results of a records search at the SSJVIC and a pedestrian survey of the project's APE. Ultimately, Report KE-03401 did not identify any cultural resources within the report's study area.

Report KE-03429 – *A Phase I Cultural Resource Survey for Montecito Properties, City of Bakersfield, California* was written by Scott M. Hudlow of Hudlow Cultural Resource Associates in 2006. The area examined for KE-03429 covers 340 acres of land in the city of Bakerfield, south of Taft Highway (SR-119) between Old River Road and Buena Vista Road. Report KE-03429's APE overlaps with the currently proposed project site at the intersection of Old River Road and Taft Highway (SR-119). The report details the results of a records search at the SSJVIC and a pedestrian survey of the project's study area. These efforts identified two historic-era houses, but did not identify any cultural resources within the currently proposed project site. Due to their distance from the currently proposed project, the current project is not anticipated to impact the two historic-era built resources identified by report KE-03429.

Report KE-03528 – *Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California* was written by Cindy Arrington, Bryon Bass, Joan Brown, Chris Corey, and Kevin Hunt of SWCA Environmental Consultants in 2006. The report details the results from the study of 1,431 linear miles across California for the purpose of fiber optic cable maintenance. The study area for report KE-03528 overlaps with portions of the currently proposed project between Taft Highway (SR-119) and McCutchen Road. Report KE-03528 included the results from a literature review, Sacred Lands File search, a pedestrian survey, and archaeological monitoring during fiber optic cable maintenance. None of the resources identified within Report KE-03528 are located within the currently proposed project site, nor are they close enough to the currently proposed project site to be impacted by project activities.

Report KE-03718 – *A Phase I Cultural Resource Survey for Steve Antongiovani Annexation/General Plan Amendment/Zone Change, City of Bakersfield, California* was written by Scott M. Hudlow of Hudlow Cultural Resource Associates in 2006. Report KE-03718 includes results from a study of 29.31 acres of land north of the intersection at Taft Highway (SR-119) and Old River Road. This study area overlaps with a small portion of the currently proposed project site as it traverses across Old River Road. Report KE-03718 included a record search at SSJVIC and a pedestrian survey of report's study area. These efforts did not identify any cultural resources within the vicinity of the currently proposed project site.

Report KE-04796 – *Archaeological Survey Report for the Old River Road Improvement Project from State Route 166 to State Route 119, Kern County, California* was written by Leroy Laurie and Andrew Pulcheon of LSA Associates in 2014. This report examined 13 linear miles along Old River Road, extending south from Taft Highway (SR-119), and overlaps with the western portion of the southwestern most portion of the currently proposed project site. Report KE-04796 included a records search at the SSJVIC, Native American consultation, and a pedestrian survey of the report's study area. Report KE-04796 did not identify any cultural resources within the report's study area.

Previously Recorded Resources

The SSJCIV records search revealed that 17 cultural resources were previously recorded within a 0.5-mile radius of the proposed project site, one of which was reported by the SSJVIC as lying within the boundaries of the project site. The resource reported as lying within the proposed project site consists of a historic structure known as the Stine Canal (P-15-007232). The additional 16 resources identified by the SSJVIC as lying within the vicinity of the proposed project site include both historic-era and prehistoric resources. Historic-era resources within the project site vicinity include residences (P-15-011652, P-15-011656, P-15-011657, P-15-011658, P-15-011659, P-15-011660, P-15-011662, and P-15-012447) and the Sunset Railway (P-15-004024). Prehistoric resources in the vicinity of the project site consist of isolated lithic tools (P-15-011647, P-15-0011648, P-15-011649, P-15-011650, andP-15-011651), and lithic scatters (P-15-011652, P-15-011653, and P-15-011654). The 16 previously recorded resources identified as lying within 0.5 miles of the project site are described briefly in Table 2 below, as well as the lone resource reported as lying within the proposed project site.

Table 2
PREVIOUSLY RECORDED RESOURCES WITHIN 0.5-MILE OF THE PROJECT SITE

Primary	Trinomial	Year of Most Recent Examination	Recorder	Description	Within Project Site?
P-15-007232	N/A	2004	Catherine Lewis Pruett	Historic-era canal, known as "Stine Canal" stretches between Taft Highway (SR-119) and Panama Lane, extending from the southwest towards the northeast. Determined ineligible for NRHP listing.	Yes
P-15-004024	CA-KER-4023H	2020	Padre Associates, Inc.	Historic-era railroad grade of the former Sunset Railway, reported as abandoned with no visible cultural artifacts present	No
P-15-011647	N/A	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Prehistoric-era isolate of white chalcedony flake, identified as "I-#1"	No
P-15-011648	N/A	2005	Catherine Lewis Prett, Dorothy	Prehistoric-era isolate of white chalcedony flake, identified as "I-#2"	No

Primary	Trinomial	Year of Most Recent Examination	Recorder	Description	Within Project Site?
			Fleagle, and Peggy Murphy		
P-15-011649	N/A	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Prehistoric-era isolate of granitic groundstone fragment, identified as "I-#3"	No
P-15-011650	N/A	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Prehistoric-era isolate of chert, identified as "I-#4"	No
P-15-011651	N/A	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Prehistoric-era isolate of granitic hammerstone, identified as "I-#5"	No
P-15-011652	CA-KER-6758H	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Historic-era homestead consisting of debris from the 1930s and 1940s, identified as "PM#H"	No
P-15-011653	CA-KER-6759	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Prehistoric-era site of a small lithic scatter, including chert and chalcedony flakes, identified as "PM#1"	No
P-15-011654	CA-KER-6760	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Prehistoric-era site of a small lithic scattering, including chert and chalcedony flakes, identified as "PM#2"	No
P-15-011656	N/A	2005	Chris Brewer	Historic-era rural building/house built in the late 1930s, known as "Fuggit House"; recommended as ineligible for listing in the NRHP	No
P-15-011657	N/A	2005	Chris Brewer	Historic-era building/farm built in the late 1930s, includes barns, housing for workers, and other buildings; known as "Destefani Farms"; recommended as ineligible for listing in the NRHP	No
P-15-011658	N/A	2005	Chris Brewer	Historic-era building/house built in 1954, with wooden frames and metal screens; recommended as ineligible for listing in the NRHP	No
P-15-011659	N/A	2005	Chris Brewer	Historic-era building/house built in 1957, consists of wooden frame on concrete pad; recommended as	No

Primary	Trinomial	Year of Most Recent Examination	Recorder	Description	Within Project Site?
				ineligible for listing in the NRHP	
P-15-011660	N/A	2005	Chris Brewer	Historic-era building/farmhouse built in 1928, consists of wooden frame structure and a tank house; recommended as ineligible for listing in the NRHP	No
P-15-011662	N/A	2005	Chris Brewer	Historic-era building/house built in 1952, ranch-style house on a one-acre lot, also known as "Michael Rossi Residence"; recommended as ineligible for listing on the NRHP	No
P-15-012447	N/A	2005	Scott M. Hudlow	Historic-era building/house built in the 1920s, in poor condition with notable modifications and additions, also known as "M-1"	No
P-15-007232	N/A	2004	Catherine Lewis Pruett	Historic-era canal, known as "Stine Canal" stretches between Taft Highway (SR-119) and Panama Lane, extending from the southwest towards the northeast. Determined ineligible for NRHP listing.	Yes
P-15-004024	CA-KER-4023H	2020	Padre Associates, Inc.	Historic-era railroad grade of the former Sunset Railway, reported as abandoned with no visible cultural artifacts present	No
P-15-011647	N/A	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Prehistoric-era isolate of white chalcedony flake, identified as "I-#1"	No
P-15-011648	N/A	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Prehistoric-era isolate of white chalcedony flake, identified as "I-#2"	No
P-15-011649	N/A	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Prehistoric-era isolate of granitic groundstone fragment, identified as "I-#3"	No
P-15-011650	N/A	2005	Catherine Lewis Prett, Dorothy	Prehistoric-era isolate of chert, identified as "I-#4"	No

Primary	Trinomial	Year of Most Recent Examination	Recorder	Description	Within Project Site?
			Fleagle, and Peggy Murphy		
P-15-011651	N/A	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Prehistoric-era isolate of granitic hammerstone, identified as "I-#5"	No
P-15-011652	CA-KER-6758H	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Historic-era homestead consisting of debris from the 1930s and 1940s, identified as "PM#H"	No
P-15-011653	CA-KER-6759	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Prehistoric-era site of a small lithic scatter, including chert and chalcedony flakes, identified as "PM#1"	No
P-15-011654	CA-KER-6760	2005	Catherine Lewis Prett, Dorothy Fleagle, and Peggy Murphy	Prehistoric-era site of a small lithic scattering, including chert and chalcedony flakes, identified as "PM#2"	No
P-15-011656	N/A	2005	Chris Brewer	Historic-era rural building/house built in the late 1930s, known as "Fuggit House"; recommended as ineligible for listing in the NRHP	No
P-15-011657	N/A	2005	Chris Brewer	Historic-era building/farm built in the late 1930s, includes barns, housing for workers, and other buildings; known as "Destefani Farms"; recommended as ineligible for listing in the NRHP	No
P-15-011658	N/A	2005	Chris Brewer	Historic-era building/house built in 1954, with wooden frames and metal screens; recommended as ineligible for listing in the NRHP	No
P-15-011659	N/A	2005	Chris Brewer	Historic-era building/house built in 1957, consists of wooden frame on concrete pad; recommended as ineligible for listing in the NRHP	No
P-15-011660	N/A	2005	Chris Brewer	Historic-era building/farmhouse built in 1928, consists of wooden frame structure and a tank house; recommended as	No

Primary	Trinomial	Year of Most Recent Examination	Recorder	Description	Within Project Site?
				ineligible for listing in the NRHP	
P-15-011662	N/A	2005	Chris Brewer	Historic-era building/house built in 1952, ranch-style house on a one-acre lot, also known as "Michael Rossi Residence"; recommended as ineligible for listing on the NRHP	No
P-15-012447	N/A	2005	Scott M. Hudlow	Historic-era building/house built in the 1920s, in poor condition with notable modifications and additions, also known as "M-1"	No

Resource P-15-007232 – this resource, also known as the "Stine Canal", was first recorded by staff at JRP Historical Consulting Services in 1993, who examined the canal as part of Historic Property Survey associated with a proposed Bridge Seismic Retrofit Program along Route 204 in the city of Bakersfield. The resource was most recently visited/recorded in 2004 by Catherine Lewis Pruett of Three Girls and a Shovel, LLC., as part of the Cultural Resources Assessment for Gosford-Panama Partners, which consisted of the examination of 285 acres of land located to the southwest of Bakersfield. This historic-era canal extends from the southwest of the currently proposed project site and passes through the project site underneath Taft Highway (SR-119), close to Taft Highway's intersection with Old River Road, before extending to the northeast, on the east side of Old River Road. The Stine Canal is dirt-lined and spans approximately 30 feet wide at its top.

According to records on file at the SSJCIV, the Stine Canal was recommended as ineligible for inclusion in the National Register of Historic Places (NRHP) on May 7, 1996, by Bryan Apper, AICP, of the California Department of Transportation office in Fresno, California. In a response letter dated May 24, 1996, Ms. Cherilyn Widell, California State Historic Preservation Officer (SHPO), concurred with the recommendation that the Stine Canal was not eligible for inclusion on the NRHP under any of the criteria established by 36 CFR 60.4, and that the canal does not have strong association with historic events or persons, nor does it possess significance as an architectural or engineering structure.

Historic-Era Aerial Imagery Review

Historic-era aerial photographs examined for this analysis included photographs taken in 1952, 1956, 1968, 1984, 1994, 2004, 2005, 2009, 2010, 2012, 2014, 2016, 2018, and 2020 (NETROnline 2024). The findings from this historic-era aerial photograph analysis are presented in Table 3 below.

Table 3
SUMMARY OF FINDINGS FROM HISTORIC-ERA AERIAL PHOTOGRAPHS DEPICTING THE PROJECT SITE

Aerial Photograph Edition	Features Depicted
Aerial Photograph from 1952	• Old River Road is already extant, as well as the Stine Canal.

Aerial Photograph Edition	Features Depicted
	• Cleared land and residential structures are present on southern end of project site and just north of Taft Highway along project site • Surrounding lands show signs of land clearing, most likely for agricultural purposes
Aerial Photograph from 1956	• Old River Road appears to have been reworked, possibly paved • No other major changes observed within project site
Aerial Photograph from 1968	• Southern portion of project site now appears paved • Structures are now extant on land surrounding southern portion of project site • Structures, possibly residential, are now present on the edges of Stine Canal in the proximity of the project site, approx. 240m from McCutchen Road • Structures are now present just past northern boundary of project site, to the northwest of McCutchen Road and Old River Road
Aerial Photograph from 1984	• No changes observed within project site since 1968 • A structure located approx. 480m south of McCutchen Road adjacent west of the project site, which was visible in the 1968 photograph is now gone and associated access road running from north to south has seemingly been altered to fit square grid of roads in the surrounding area • Expansion of cleared lands around southern portion of project, to the east of Old River Road and north of Taft Highway • Building now stands close to the southern portion of the project site to the east of Old River Road, close to Stine Canal
Aerial Photograph from 1994	• No changes observed within the project site since 1984
Aerial Photograph from 2004	• No changes observed in project site since 1994 • Residential structures appear to the south of southern portion of the project site • Additional development including land clearance and structure construction is apparent along Stine Canal, approx. 240m south of McCutchen Road • Service road observed in 1994 no longer present
Aerial Photograph from 2005	• No changes observed within project site or its vicinity since 2004
Aerial Photograph from 2009	• Structures are now visible just beyond the northern boundary of the project site • Independence High School and its associated stadium, baseball fields, and parking lot are now present to the northwest of the intersection of McCutchen Road and Old River Road • Residential neighborhood is now present northeast of project site • A diversion of Stine Canal, to the north of project site, towards the east, rather than its original northeastern trajectory, is apparent
Aerial Photograph from 2010	• No changes observed within project site or its vicinity since 2009
Aerial Photograph from 2012	• No changes observed within project site or its vicinity since 2010
Aerial Photograph from 2014	• No changes observed within project site or its vicinity since 2012
Aerial Photograph from 2016	• No changes observed within project site or its vicinity since 2014
Aerial Photograph from 2018	• No changes observed within project site since 2016 • Structure now present east of southern portion of project, just north of Taft Highway (SR-119) •

Aerial Photograph Edition	Features Depicted
	• Land clearing and preliminary construction north of Independence High School is apparent, area would later become site of Career Technical Education Center
Aerial Photograph from 2020	• No changes observed within project site since 2018 • Residential neighborhood to the northeast of project site has expanded • Construction of Career Technical Education Center is completed to the northwest of project site

Native American Outreach

On May 15, 2024, HELIX requested that the NAHC conduct a search of the SLF for the presence of Native American sacred sites or human remains in the vicinity of the currently proposed project site. A written response received from the NAHC on May 30, 2024, stated that the results of the SLF search were negative. On June 17, 2024, HELIX sent letters to eight (8) Native American contacts that were recommended by the NAHC as potential sources of information related to cultural resources in the vicinity of the project site. These Native American contacts included:

- Delia Dominguez, Chairperson, Kitanemuk & Yowlumne Tejon Indians
- Violet Walker, Chairperson, Northern Chuman Tribal Council
- Robert Pennell, Cultural Resource Director, Table Mountain Rancheria
- Michelle Heredia-Cordova, Chairperson, Table Mountain Rancheria
- Candice Garza, CRM Scheduler, Tejon Indian Tribe
- Kerri Vera, Environnemental Department, Tule River Indian Tribe
- Joey Garfield, Tribal Archaeologist, Tule River Indian Tribe
- Neil Peyron, Chairperson, Tule River Indian Tribe

On July 2, 2024 HELIX received a written response from Robert Pennell, the Cultural Resource Director for the Table Mountain Rancheria. The letter stated that the proposed project was beyond the Table Mountain Rancheria's area of interest. No other responses have been received from these Native American points of contact. The initial correspondence with the NAHC, a representative outreach letter sent out to the eight identified points of tribal contact, and Mr. Pennell's response letter are included in Attachment C of this report.

CONCLUSION AND RECOMMENDATIONS

This CRA consisted of background research and Native American outreach. These efforts identified a single cultural resource as lying within the currently proposed project site: P-15-007232, the "Stine Canal". As per a letter dated May 24, 1996, from Ms. Cherilyn Widell, California SHPO, P-15-007232 has been determined ineligible for inclusion on the NRHP, and as such, does not appear to HELIX to qualify

as a historical resource under CEQA. As a result, project impacts to P-15-007232 do not require mitigative measures under the guidelines of CEQA. This CRA did not identify any other cultural resources within the proposed project site, nor any cultural resources in the vicinity of the project site that would be impacted by the proposed project.

Based on the results of this CRA, HELIX concludes that the following findings are appropriate for the project:

- ***No Significant Impact*** to Historical or Unique Archaeological Resources under CEQA Guidelines Section 15064.5;

- ***No Significant Impact to Human Remains*** resulting from disturbance.

No additional study or documentation for cultural resources are recommended at this time. However, in the unlikely event that archaeological cultural resources, and/or human remains, or funerary objects are discovered during project construction, the provisions included below should be implemented to avoid or substantially reduce the severity of impacts to such finds.

Accidental Discovery of Cultural Resources

In the event that cultural resources are exposed during ground-disturbing activities, construction activities should be halted within 100 feet of the discovery. Cultural resources could consist of but are not limited to stone, bone, wood, or shell artifacts, or features, including hearths, structural remains, or historic dumpsites. If the resources cannot be avoided during the remainder of construction, the retained archaeologist, who meets the Secretary of the Interior's *Professional Qualifications Standards*, should assess the resource and provide appropriate management recommendations. If the discovery proves to be CRHR- or NRHP-eligible, additional documentation and analysis, such as data recovery excavation, may be warranted.

Accidental Discovery of Human Remains

Although considered highly unlikely, there is always the possibility that ground-disturbing activities during construction may uncover previously unknown human remains. In the event of an accidental discovery or recognition of any human remains, PRC Section 5097.98 must be followed. Once project-related earthmoving begins and if there is a discovery or recognition of human remains, the following steps shall be taken:

1. There shall be no further excavation or disturbance of the specific location or any nearby area reasonably suspected to overlie adjacent human remains until the County Coroner is contacted to determine if the remains are Native American and if an investigation of the cause of death is required. If the coroner determines the remains are Native American, the coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" of the deceased Native American. The most likely descendant may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains, and any associated grave goods as provided in PRC Section 5097.98, or

2. Where the following conditions occur, the landowner or their authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity either in accordance with the recommendations of the most likely descendent or on the project area in a location not subject to further subsurface disturbance:

    - The NAHC is unable to identify a most likely descendent or the most likely descendent failed to make a recommendation within 48 hours after being notified by the commission;

    - The descendent identified fails to make a recommendation; or

    - The landowner or his authorized representative rejects the recommendation of the descendent, and the mediation by the NAHC fails to provide measures acceptable to the landowner.

Sincerely,

Benjamin D. Siegel

Benjamin Siegel, M.A., RPA.
Cultural Resource Project Manager II

Attachments:

Attachment A: Figure 1: Site and Vicinity Map of Project Area
Figure 2: USGS Topographic Map of Study Area
Figure 3: Aerial Map of Study Area

Attachment B: Resumes of Cultural Resources Staff

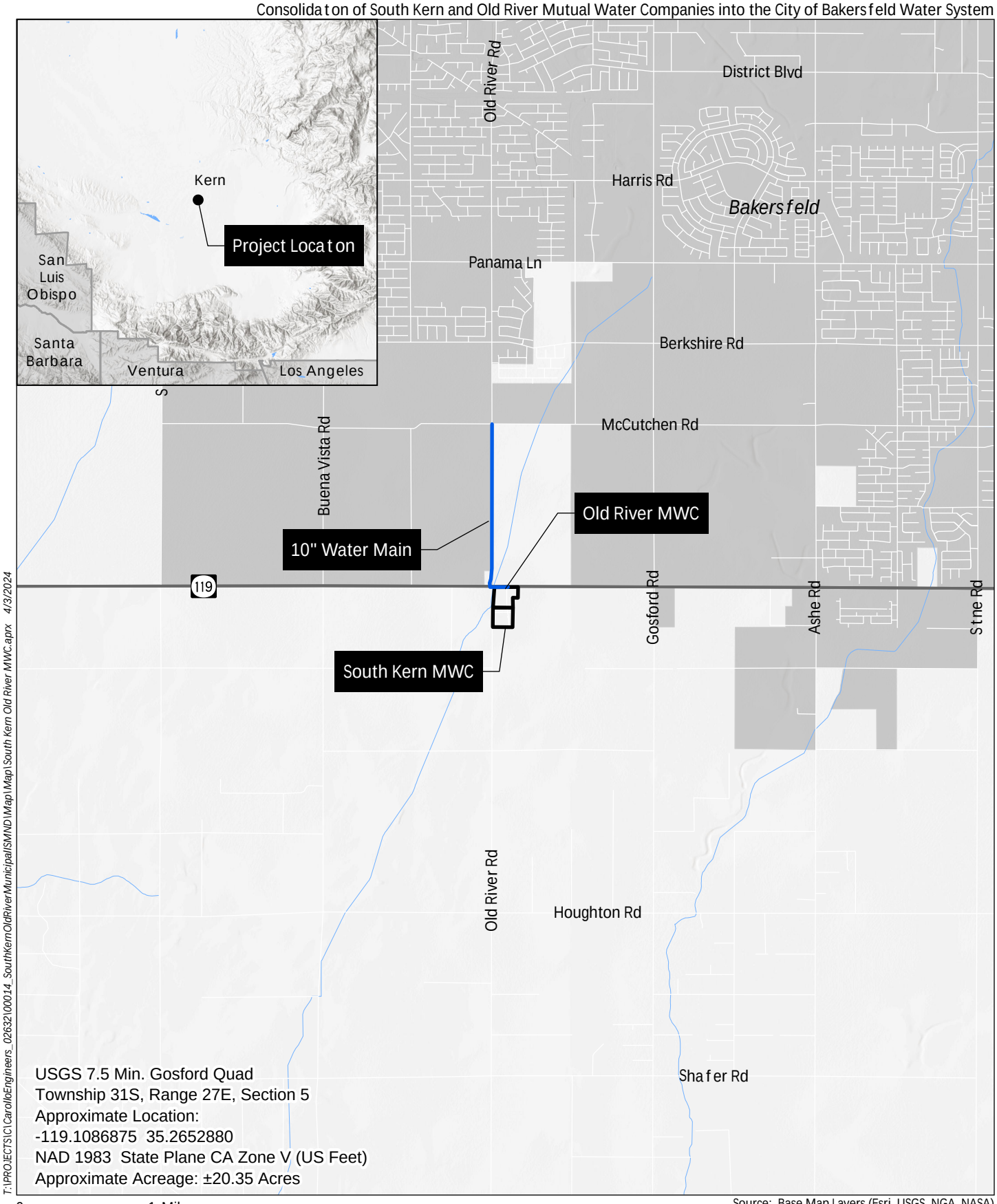
Attachment C: Native American Correspondence

REFERENCES

NETROnline. 2024. Historic Aerials. Electronic resource, https://www.historicaerials.com/viewer. Accessed June 5, 2024.

Attachment A

Figures



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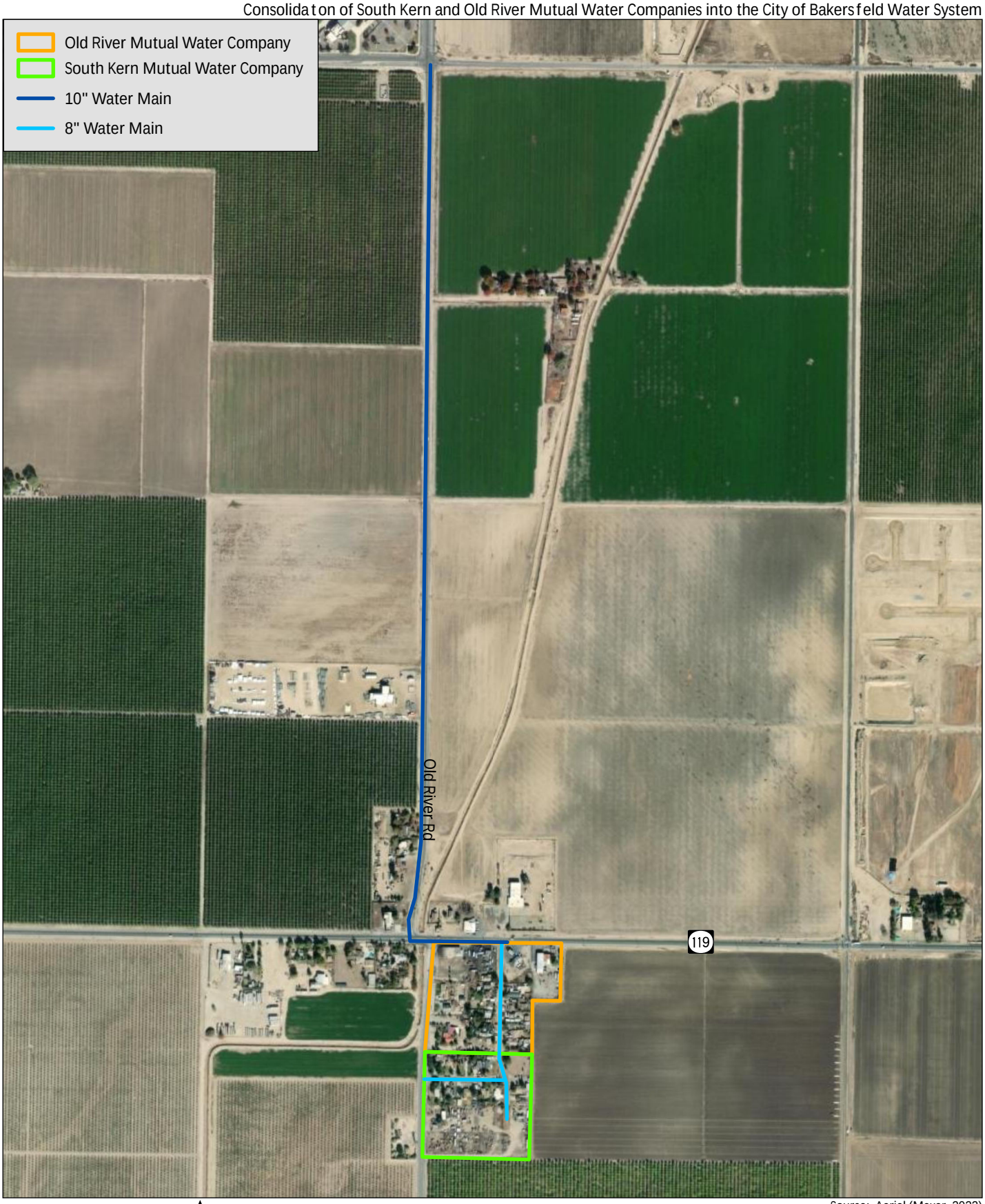
HELIX Environmental Planning

Site and Vicinity Map

Figure 1



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Source: Aerial (Maxar, 2022)

HELIX Environmental Planning

Project Location and Mutual Water Company Site Locations

Figure 2

T:\PROJECTS\C\Carollo\Engineers_02632\00014_SouthKernOldRiverMunicipalISMND\Map\Map\South Kern Old River MWC.aprx Fig3_Site Plan 4/4/2024

Source: Aerial (Maxar, 2022)

HELIX Environmental Planning

Site Plan

Figure 3

Attachment B

Resumes

Benjamin Siegel, RPA

Cultural Resources Project Manager

HELIX Environmental Planning

Summary of Qualifications

Mr. Siegel is an archaeologist and cultural resource manager with 14 years of experience directing cultural resource management efforts across the United States and in countries abroad. He has authored or co-authored dozens of cultural resource assessments and reports associated with projects requiring compliance with Section 106 of the National Historic Preservation Act (NHPA), National Environmental Policy Act (NEPA), and California Environmental Quality Act (CEQA). He has applicable experience in directing records searches, field surveys, site evaluations, data recovery efforts, and in the development of resource mitigation plans for large scale cultural resource efforts. Mr. Siegel is also experienced in the application of the California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP) evaluation criteria to various cultural resources. He meets the Secretary of the Interior's (SOI) Professional Qualifications Standards for prehistoric archaeology, historic archaeology, and history and is a member of the Register of Professional Archaeologists.

Selected Project Experience

West Point Water Supply Drought Resiliency Biological and Cultural Resource Evaluations (2022). Senior Archaeologist for a dam enhancement project, approximately 4.5 acres in size, located in West Point, Calaveras County. Responsible for conducting a California Historical Resources Information System records search and leading a pedestrian survey of the project area. Author of a cultural resource assessment that meets with CEQA and Section 106 requirements. Work performed for Calaveras County Water District.

Forebay Park Improvements Master Plan and CEQA Support (2022). Senior Archaeologist for proposed recreation improvements to the approximately six-acre Forebay Park located in Pollock Pines, El Dorado County. Responsible for conducting a California Historical Resources Information System records search, Native American outreach, and directing a pedestrian survey of the project area. Author of the project's cultural resource assessment which meets with CEQA requirements. Work performed for El Dorado County.

Social and Ecological Resilience Across the Landscape Fire Management Features Cultural Resources (2021 - 2022). Senior Archeologist managing a fuel break expansion project extending through Stanislaus National Forest lands. Cultural resources studies include Section 106 compliance with the Stanislaus National Forest as the lead agency, and CEQA compliance with the County of Tuolumne as the lead agency. Project activities managed include leading intensive pedestrian surveys of fuel break areas totaling approximately 8,500 acres, documenting over 100 cultural resources using California DPR 523 site recordation forms and following Stanislaus National Forest protocols, developing avoidance and minimization strategies for at-

Education

Doctor of Philosophy Candidate, Anthropology, University of California, Berkeley, 2023

Master of Arts, Anthropology, University of California, Berkeley, 2019

Master of Arts, Maritime Studies and Nautical Archaeology, East Carolina University, 2011

Master of Arts, American History, Emory University, 2007

Bachelor of Arts, History, Cum Laude, Emory University, 2007

Registrations/ Certifications

Registered Professional Archaeologist, #989542

U.S. SOI Qualified for Historic Archaeology, Prehistoric Archaeology, and History

Professional Affiliations

Society for Historical Archaeology

risk cultural resources, and producing a comprehensive Cultural Resources Inventory Report. Work performed for the County of Tuolumne with the U.S. Forest Service as project partners.

Fred Jackson First Mile/Last Mile Connection Environmental Compliance & Monitoring (2021). Senior Archaeologist for construction monitoring during roadway improvements project located in unincorporated community of North Richmond, Contra Costa County. Responsible for California Historical Resources Information System records search, Native American Heritage Commission Sacred Lands File search, technical cultural report authorship, and for the development of a Worker Environmental Awareness Training Program for project construction crews and contractors before excavation and ground disturbance activities. Work performed for Contra Costa County.

Mowry Village Residential (2021). Senior Archaeologist responsible for conducting a California Historical Resources Information System records search, historic aerial photograph analysis, tribal outreach, and an intensive pedestrian survey to inform a cultural resource assessment of a 35- acre project area in the City of Newark in Alameda County. The project site had a high potential to contain prehistoric archaeological sites and resources. Served as the primary author for the final cultural resource assessment report for the project to comply with CEQA requirements for the management of cultural resources.

North Vista Plaza Project (2021 - 2022). Senior Archaeologist for an approximately 41-acre residential development project in Valley Springs, Calaveras County. Responsible for California Historical Resources Information System records search and Native American Heritage Commission Sacred Lands File. Directed the pedestrian survey of the project area. Authored the cultural resource technical report to comply with USACE and Section 106 of the National Historic Preservation Act. Work performed for LGI Homes.

Watt Avenue Apartments (2021). Senior Archaeologist for 7-acre apartment complex development project located in North Highlands, Sacramento County. Responsible for producing the Cultural Resource Assessments associated with CEQA and Section 106 compliance. Work performed for New Green Properties, LLC.

Creekside Ridge Drive Development Cultural Extended Phase I Plan & Letter Reports (2021). Senior Archaeologist for approximately 2-acre developmental project located in Roseville, Placer County. Responsible for developing and planning an Extended Phase I archaeological study based on previous cultural resource efforts in the project vicinity and for the proposed development project. Work performed for RSC Engineering, Inc. with the City of Roseville as the lead agency.

Maverick Gas Station, Watt Avenue & Jackson Road (2021 - 2022). Senior Archaeologist for development of a gas station and convenience store with a project footprint of approximately 9 acres in Rosemont, Sacramento County. Responsible for producing a Cultural Resource Assessment associated with CEQA and Section 106 compliance. Work performed for RSC Engineering.

Poppy Grove Affordable Housing IS/MND (2022). Senior Archaeologist for an affordable housing development project on approximately 16 acres located in Elk Grove, Sacramento County. Responsible for conducting a California Historical Resources Information System records search and directing a pedestrian survey of the project area. Author of a cultural resource assessment that meets with CEQA requirements. Work performed for UrbanCore Development, LLC.

Attachment C

Native American Correspondence

Sacred Lands File & Native American Contacts List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: **South Kern/Old River Municipal Project (02632.00014.001)**

County: **Kern County**

USGS Quadrangle Name: **Gosford**

Township: **30S and 31S** **Range:** **27E** **Section(s):** **31&32, 3&6**

Company/Firm/Agency: **HELIX Environmental Planning, Inc.**

Street Address: **1180 Iron Point Road, Suite 130**

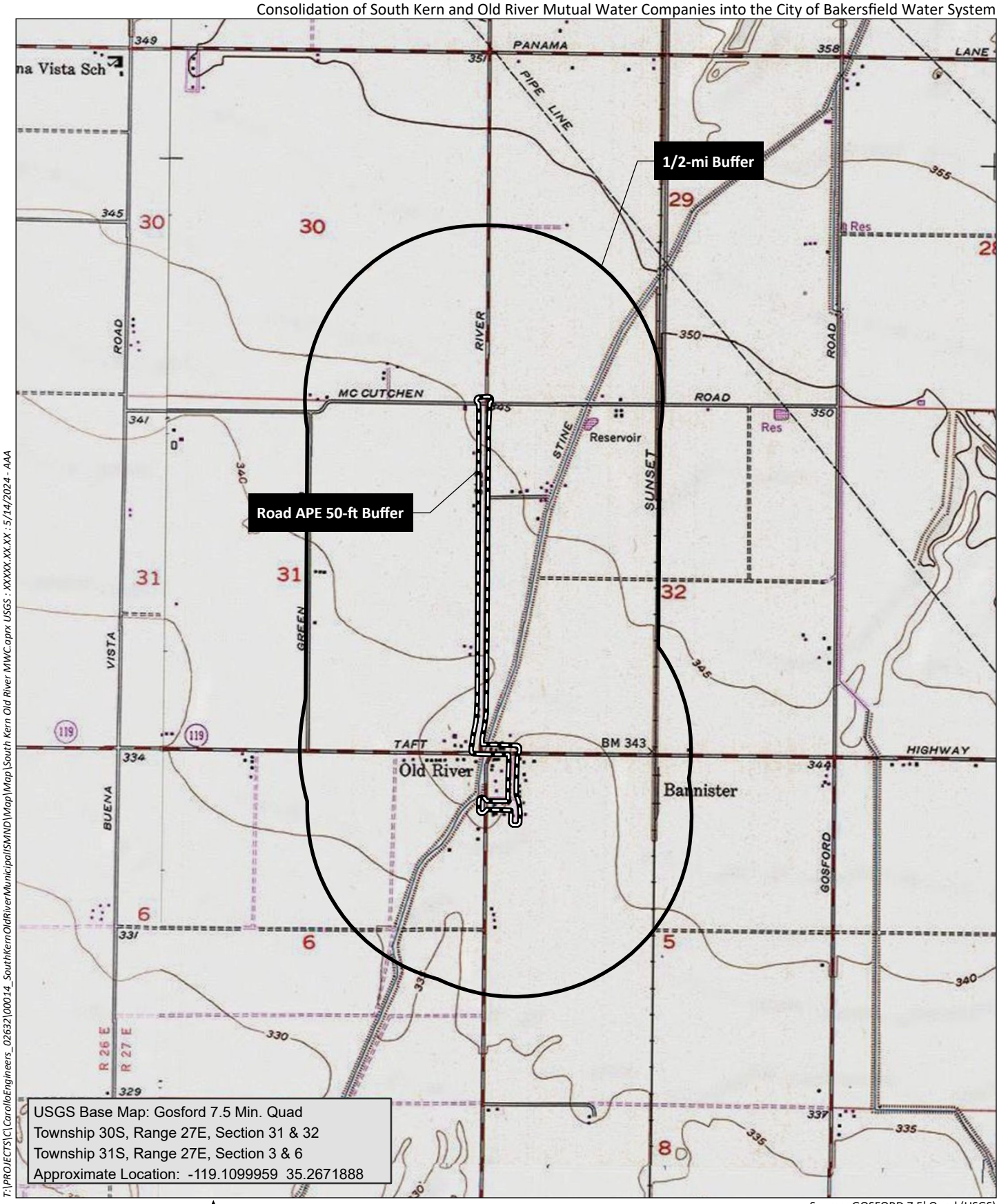
City: **Folsom, CA** **Zip:** **95630**

Phone: **(916)-435-1205**

Email: **bens@helixepi.com**

Project Description: The Old River Mutual Water Company (MWC) and South Kern MWC currently provide water service to residential and commercial customers within the Project Area. Each MWC operates using a single well, located with their respective service areas, which provides water to adjacent parcels and nearby customers. Water delivered by the Old River MWC and South Kern MWC has been found to contain uranium levels that exceed the maximum contaminant levels established by state and federal regulations, and both systems now lack source reliability and storage capacity to serve their customers. The two systems also lack technical, managerial, and financial capacity to continue service.

The proposed project would abandon the Old River MWC and the South Kern MWC wells and will extend the City of Bakersfield's water system to serve the areas previously served by these two MWCs, thereby consolidating both MWC's into the City of Bakersfield's water system. This effort will consist of the construction of an approximately 6,000 linear feet of new 10-inch water main, 1,600 linear feet of 8-inch lateral pipelines with connections to 29 households. Three fire hydrants would also be installed in case of emergency. The point of connection to the City of Bakersfield water system would be the existing 16-inch diameter water main at McCutchen Road and Old River Road. A map depicting the proposed Project Area is attached for your reference.



USGS Base Map: Gosford 7.5 Min. Quad
Township 30S, Range 27E, Section 31 & 32
Township 31S, Range 27E, Section 3 & 6
Approximate Location: -119.1099959 35.2671888

0 2,000 Feet

Source: GOSFORD 7.5' Quad (USGS)

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HELIX Environmental Planning

Records Search Map

Figure 1

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov

May 30, 2024

Ben Siegel
HELIX Environmental Planning

Via Email to: BenS@helixepi.com

Re: South Kern/Old River Municipal (02632.00014.001)Project, Kern County

To Whom It May Concern:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Murphy.Donahue@NAHC.ca.gov

Sincerely,

Murphy Donahue

Murphy Donahue
Cultural Resources Analyst

Attachment

HELIX Environmental Planning, Inc.
1180 Iron Point Road, Suite 130
Folsom, CA 95630
916.435.1205 **tel**
619.462.0552 **fax**
www.**helixepi**.com

June 17, 2024 02632.00014.001

Delia Dominguez, Chairperson
Kitanemuk & Yowlumne Tejon Indians
115 Radio Street
Bakersfield, CA, 93305

Subject: South Kern / Old River Municipal Project

Dear Chairperson Delia Dominguez,

HELIX Environmental Planning, Inc. (HELIX) is preparing a Cultural Resources Assessment in support of the South Kern / Old River Municipal Project (Project) located adjacent to the south of the City of Bakersfield, within unincorporated Kern County, California. The Old River Mutual Water Company (MWC) and South Kern MWC currently provide water service to residential and commercial customers within the Project Area. However, water delivered by the Old River MWC and South Kern MWC has been found to contain uranium levels that exceed the maximum contaminant levels established by state and federal regulations, and both systems now lack source reliability and storage capacity to serve their customers. The two systems also lack technical, managerial, and financial capacity to continue service.

The proposed project would abandon the Old River and South Kern MWC wells and will extend the City of Bakersfield's water system to serve the areas previously served by those two MWCs, thereby consolidating both MWCs into the City of Bakersfield's water system. This effort will consist of the construction of approximately 6,000 linear feet of new 10-inch water main and 1,600 linear feet of 8-inch lateral pipelines with connections to 29 households. Three fire hydrants would also be installed in case of emergency. The point of connection to the City of Bakersfield water system would be the existing 16-inch diameter water main at McCutchen Road and Old River Road.

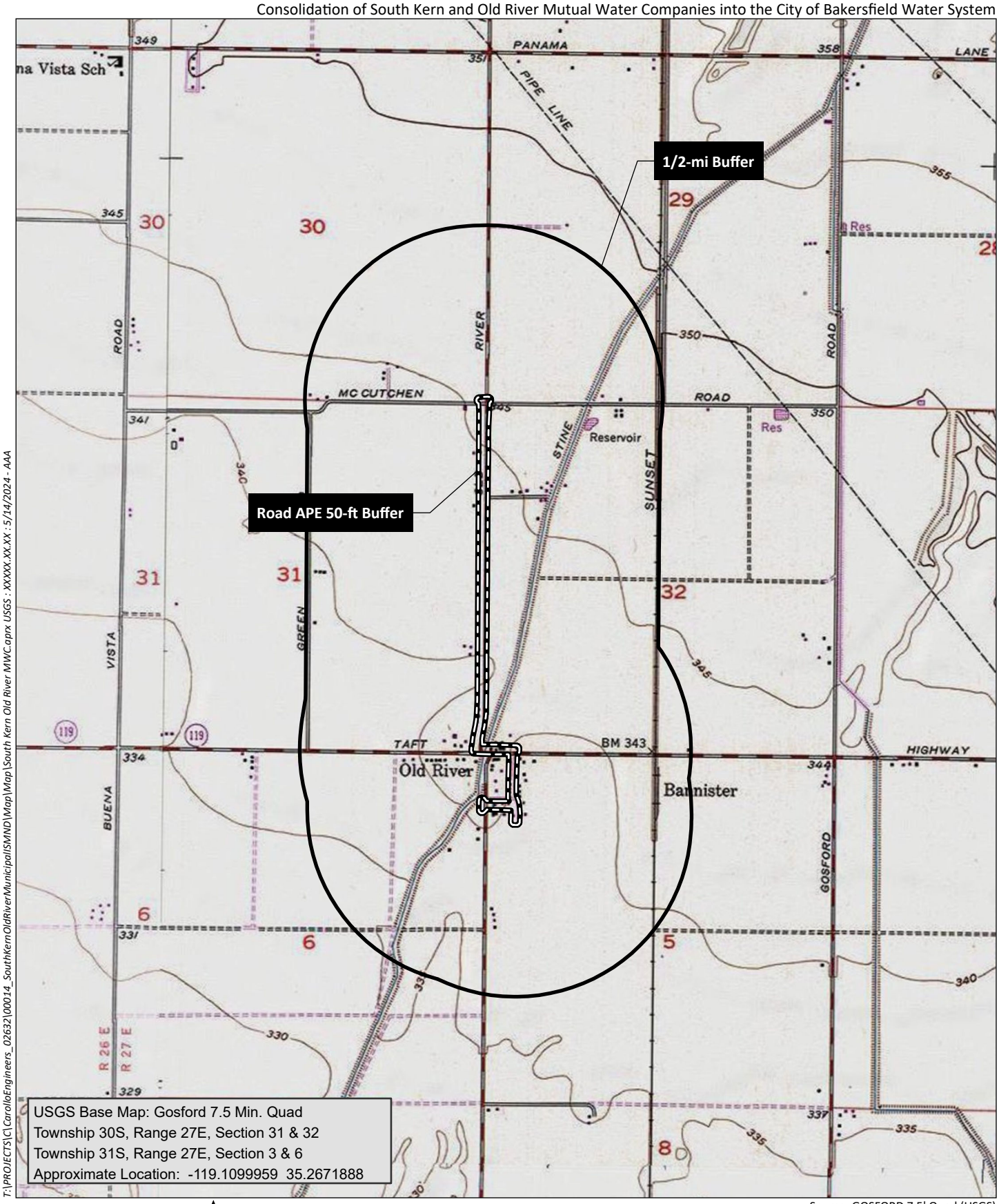
A search of the Native American Heritage Commission's (NAHC) Sacred Lands File returned negative results, and the NAHC suggested we contact you to ask if you have information you would like to share regarding Native American resources in or near the Project Area. The Project Area is located within Sections 31 and 32, of Township 30 South, Range 27 East, and Sections 3 and 6, of Township 31 South, Range 27 East, Mount Diablo Meridian, and is depicted on the U.S. Geological Survey (USGS) 7.5-minute *Gosford, California* topographic quadrangle map. A map showing the Project Area is included with this letter for your reference.

If there are sensitive resources within or near the proposed Project Area that could be impacted by Project implementation, please advise us accordingly. Please note that this request is for informational purposes only. If you have any information, questions, or concerns regarding the proposed Project, please feel free to contact me directly at bens@helixepi.com or over the phone at (404) 312-5883.

Sincerely,

Benjamin D. Siegel

Benjamin D. Siegel, M.A., M.A., M.A., RPA
Cultural Resources Project Manager II
HELIX Environmental Planning, Inc.



USGS Base Map: Gosford 7.5 Min. Quad
Township 30S, Range 27E, Section 31 & 32
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Approximate Location: -119.1099959 35.2671888

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Source: GOSFORD 7.5' Quad (USGS)

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HELIX Environmental Planning

Records Search Map

Figure 1

TABLE MOUNTAIN RANCHERIA
TRIBAL GOVERNMENT OFFICE

July 2, 2024

Benjamin D. Siegel, M.A., M.A., M.A., RPA
Cultural Resources Project Manager II
Helix Environmental Planning Inc.
1180 Iron Point Road, Suite 130
Folsom, CA 95360

RE: South Kern/Old River Municipal Project

To: Benjamin D. Siegel,

This is in response to your letter dated, June 17, 2024, regarding, South Kern/Old River Municipal Project, in the City of Bakersfield, Kern County, California.

We appreciate receiving notice; however, this project site is beyond our area of interest.

Sincerely,

Robert Pennell
Cultural Resources Director

23736
Sky Harbour Road
Post Office
Box 410
Friant
California
93626
(559) 822-2587
Fax
(559) 822-2693

Appendix D

Roadway Construction Noise Model Outputs

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 7/19/2024
Case Description: South Kern and Old River Municipal Water Companies

		Baselines (dBA)		---- Receptor #1 ----
Description	Land Use	Daytime	Evening	Night
Residentail	Residential	60	60	60

Description	Impact Device	Usage(%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	50	0
Concrete Saw	No	20		89.6	50	0
Excavator	No	40		80.7	50	0
Auger Drill Rig	No	20		84.4	50	0
Paver	No	50		77.2	50	0
Roller	No	20		80	50	0
Dump Truck	No	40		76.5	50	0

		Calculated (dBA)		Results	
Equipment		*Lmax	Leq	Day Lmax	Leq
Backhoe		77.6	73.6	N/A	N/A
Concrete Saw		89.6	82.6	N/A	N/A
Excavator		80.7	76.7	N/A	N/A
Auger Drill Rig		84.4	77.4	N/A	N/A
Paver		77.2	74.2	N/A	N/A
Roller		80	73	N/A	N/A
Dump Truck		76.5	72.5	N/A	N/A
	Total	89.6	85.7	N/A	N/A

*Calculated Lmax is the Loudest value.