ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Draft Environmental Impact Report
State Clearinghouse #2018021061

Prepared for
Rosedale-Rio Bravo Water Storage District

May 2020

ESA

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Abbreviations and Acronyms

°C	degrees Celcius
°F	degrees Fahrenheit
1,2,3-TCP	1,2,3-Trichloropropane
A	Exclusive Agriculture
A-1	Limited Agriculture
AB	Assembly Bill
AB 32	The Global Warming Solutions Act of 2006
ACS	American Community Survey
AFV	alternative fuel vehicles
AFY	acre-feet per year
AGR	Agricultural Supply
amsl	above mean sea level
AQAP	Air Quality Attainment Plan
AQMP	Air Quality Management Plan
AR4	IPCC Fourth Assessment Report
ASHRAE	American Society of Heating and Air-Conditioning Engineers
AST	above ground storage tanks
ATCM	Airborne Toxic Control Measure
BACT	Best Available Control Technology
BAU	business-as-usual
BLM	Bureau of Land Management
BMCM	Bulk Material Control Measures
BPS	Best Performance Standard
Btu	British thermal unit
BVWSD	Buena Vista Water Storage District
CAA	1963 federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
CAISO	California Independent System Operator
CalARP	California Accidental Release Prevention
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCD	Census County Division
CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife

CDOF	California Department of Finance
CDP	Census Designated Place
CDWR	California Department of Water Resources
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cf	cubic feet
CFGC –	California Fish and Game Commission
cfs	cubic feet per second
CGS	California Geological Survey
CH	Commercial Highway
CH_4	methane
CI	*Coccidioides immitis*
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_{2e}	carbon dioxide equivalents
COLD	Cold Freshwater Habitat
COPD	chronic obstructive pulmonary disease
CPUC	California Public Utilities Commission
CUPA	Certified Unified Program Agency
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
DBCP	dibromochloropropane
DMV	California Department of Motor Vehicles
DOC	California Department of Conservation
DOF	California Department of Finance
DPM	Diesel Particulate Matter
DTSC	Department of Toxic Substance Control
DWR	California Department of Water Resources
E	Estate
E3	Energy + Environmental Economics
EDB	ethylene dibromide
EDD	California Employment Development Department
EIA	Energy Information Administration
EIR	Environmental Impact Report
EKAPCD	Eastern Kern Air Pollution Control District
EO	Executive Order
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
EPact	Energy Policy Act

ES	Executive Summary
ESA	Environmental Science Associates
ESA	Endangered Species Act
ET	evapotranspiration
EV	electric vehicle
FCR	Farmland Conversion Report
FED	Functional Equivalent Document
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHRP	Fire Hazard Reduction Program
FIRM	Flood Insurance Rate Maps
FMMP	Farmland Mapping and Monitoring Program
FPPA	Farmland Protection Policy Act
FRA	Federal Responsibility Area
FRAP	Fire Resource Assessment Program
FRSH	Freshwater Replenishment
GAMA	Groundwater Ambient Monitoring and Assessment Program
GHG	greenhouse gas
GPG	State General Plan Guidelines
gpm	gallons per minute
GWh	gigawatt-hours
GWP	global warming potential
HAPS	Hazardous Air Pollutants
HCD	California Department of Housing and Community Development
HFC	hydrofluorocarbons
HMBP	Hazardous Materials Release Response Plans and Inventories
hp	horsepower
HSC	California Health and Safety Code
HSWA	The Federal Hazardous and Solid Waste Amendments
IFI	Important Farmlands Inventory
IND	Industrial Service Supply
IPCC	Intergovernmental Panel on Climate Change
IS	Initial Study
KCEHSD	Kern County Environmental Health Services Department
KCFD	Kern County Fire Deparment
KCWA	Kern County Water Agency
KDWD	Kern Delta Water District
Kern COG	Kern Council of Governments
KRSVP	Kern River Valley Specific Plan
KWB	Kern Water Bank
KWBA	Kern Water Bank Authority

kWh	kilowatt-hours
LACM	Natural History Museum of Los Angeles County
LAUS	Local Area Unemployment Statics
LCFS	Low Carbon Fuel Standard
LESA	Land Evaluation and Site Assessment
LORS	Laws, Ordinances, Regulations, and Standards
LRA	local responsibility area
M&I	municipal and industrial
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
MDAB	Mojave Desert Air Basin
mg/L	milligrams per liter
MH	Mobilehome Combining
MI	Miners Inch
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons
MODFLOW	modular finite-difference groundwater flow code developed by USGS
MPO	Metropolitan Planning Organization
MT	Metric Ton
MUN	Municipal and Domestic Supply
MW	megawatts
N/A	Not Applicable
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
ND	no date
NDIR	Non-Dispersive Infrared Photometry
NDMA	N-Nitrosodimethylamine
NE	North East
ne	not established
NHTSA	National Highway Traffic Safety Administration
NIMS	National Incident Management System
NO	nitric oxide
NOA	Notice of Availability
NOD	Notice of Determination
NOE	Notice of Exemption
NOP	Notice of Preparation
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSSH	National Soil Survey Handbook

NW	North West
O_3	Ozone
OA	Operational Area
OPR	State Office of Planning and Research
Pb	lead
PFC	perfluorocarbons
PL	Platted Lands
PM2.5	particulate matter with diameters that are 2.5 micrometers or less
PM10	particulate matter with diameters that are 10 micrometers or less
POU	publicly owned utilities
POW	Hydropower Generation
ppm	parts per million
PRC	Public Resources Code
PRO	Industrial Process Supply
R	Residential
RACM	Reasonably Available Control Measures
RARE	Rare, Threatened, or Endangered Species
RCRA	The Resource Conservation and Recovery Act
REC-1	Water Contract Recreation
REC-2	Non-Contact Water Recreation
RF	Recreation Forestry
ROD	Record of Decision
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RRBWSD	Rosedale-Rio Bravo Water Storage District
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAR	Second Assessment Report
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SCH	State Clearinghouse
SCS	Sustainable Communities Strategies
SE	South East
SEMS	California's Standard Emergency Management System
SF_6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SLCP	short-lived climate pollutants
SOC	Statement of Overriding Considerations
SOI	Sphere of Influence

SO_2	sulfur dioxide
SO_4^{-2}	sulfates
SPCC	Spill Prevention, Control and Countermeasure
SPWN	Spawning, Reproduction, and/or Early Development
SQF-MSA	Sequoia National Forest Land and Resource Management Plan as amended by the Mediated Settlement Agreement
SR	State Route
SRA	state responsibility area
SVP	Society of Vertebrate Paleontology
SW	South West
SWP	State Water Project
SWRCB	State Water Resources Control Board
T&D	Time and Date
TAC	Toxic Air Contaminants
TDS	Total dissolved solids
TMDL	Total Daily Maximum Limit
UC	University of California
U.S.	United States
USA	United States of America
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VLP	Voluntary Local Program
VMT	vehicle miles traveled
VOC	volatile organic compounds
W	watts
WARM	Warm Freshwater Habitat
Wh	watt-hours
WILD	Wildlife Habitat

EXECUTIVE SUMMARY

Onyx Ranch South Fork Valley Water Project

ES.1 Introduction

The Rosedale-Rio Bravo Water Storage District (RRBWSD) is proposing to implement the Onyx Ranch South Fork Valley Water Project (proposed project). As the lead agency, the RRBWSD has prepared this Draft Environmental Impact Report (Draft EIR) pursuant to the California Environmental Quality Act (CEQA) of 1970 (as amended), codified at California Public Resources Code Sections 21000 et. seq., and the State CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3. The purpose of this Draft EIR is to provide the public and responsible and trustee agencies with information about the potential effects on the environment associated with the proposed project.

The RRBWSD owns several parcels of land and the associated water rights along the South Fork of the Kern River in the Kern River Valley (see Figure ES-1). The parcels are located in and around the communities of Weldon and Onyx, in an unincorporated area of northeastern Kern County. Collectively, the parcels comprise the project site and cover approximately 4,109 acres.

The project site is located approximately 5 miles from the eastern boundary of the Isabella Reservoir along the South Fork of the Kern River, approximately 50 miles east of the RRBWSD service area in the San Joaquin Valley. The majority of the project site, consisting of approximately 3,418 acres, is located within lands collectively known as the Onyx Ranch. The remaining approximately 691 acres are parcels within the Smith Ranch, of which the RRBWSD owns one-third interest. The terms “Onyx Ranch” and “Smith Ranch” used herein generally refer to the portions of larger ranch areas with the same name within the project site.

The RRBWSD proposes to change the points of diversion and place of use for the water rights associated with the parcels on the project site so that the water can be delivered in the RRBWSD service area on the San Joaquin Valley floor and used for irrigation and groundwater recharge. The RRBWSD proposes to reduce the diversion and use of surface water on the project site by converting irrigated fields to non-irrigated pasture or native vegetation. The proposed project would not replace reduced surface water diversions with groundwater pumped on the project site. With the proposed project, surface water that is diverted under the existing condition would remain in the South Fork of the Kern River and flow downstream. This would result in a net increase in the South Fork flows that would run downstream to the Isabella Reservoir. The increased flows resulting from the proposed project would be released through the Isabella Dam and flow downstream in the Lower Kern River until the water is diverted at the RRBWSD diversion points. From there, the RRBWSD would deliver the water to recharge basins and

channels within and near its service area west of the City of Bakersfield (see Figure ES-1). The RRBWSD existing groundwater banking and conjunctive-use projects, operations, and CEQA documentation are detailed in the RRBWSD's annual Operations Report which is found online at: https://www.rrbwsd.com/newsletter-notices.

The proposed project would increase water supplies to the RRBWSD's service area to mitigate the shortages in the RRBWSD's contracted SWP water supply from the State of California, which has been steadily reduced due to environmental constraints impacting exports in the Sacramento/San Joaquin Delta. In addition, the proposed project would assist the RRBWSD in meeting its sustainability goals under the Sustainable Groundwater Management Act (SGMA). The proposed project would result in the use of the surface water moved downstream in the RRBWSD's service area as a beneficial use in Kern County.

As described in Section 15121(a) of the CEQA Guidelines, this Draft EIR is intended to serve as an informational document for the public and pertinent public agency decision makers. Accordingly, this Draft EIR has been prepared to identify the significant environmental effects of the proposed project, identify mitigation measures to minimize significant environmental effects, and consider reasonable alternatives to the proposed project. The environmental impact analyses in this Draft EIR are based on a variety of sources, including publicly-available documents, agency and public input, technical studies, and field surveys.

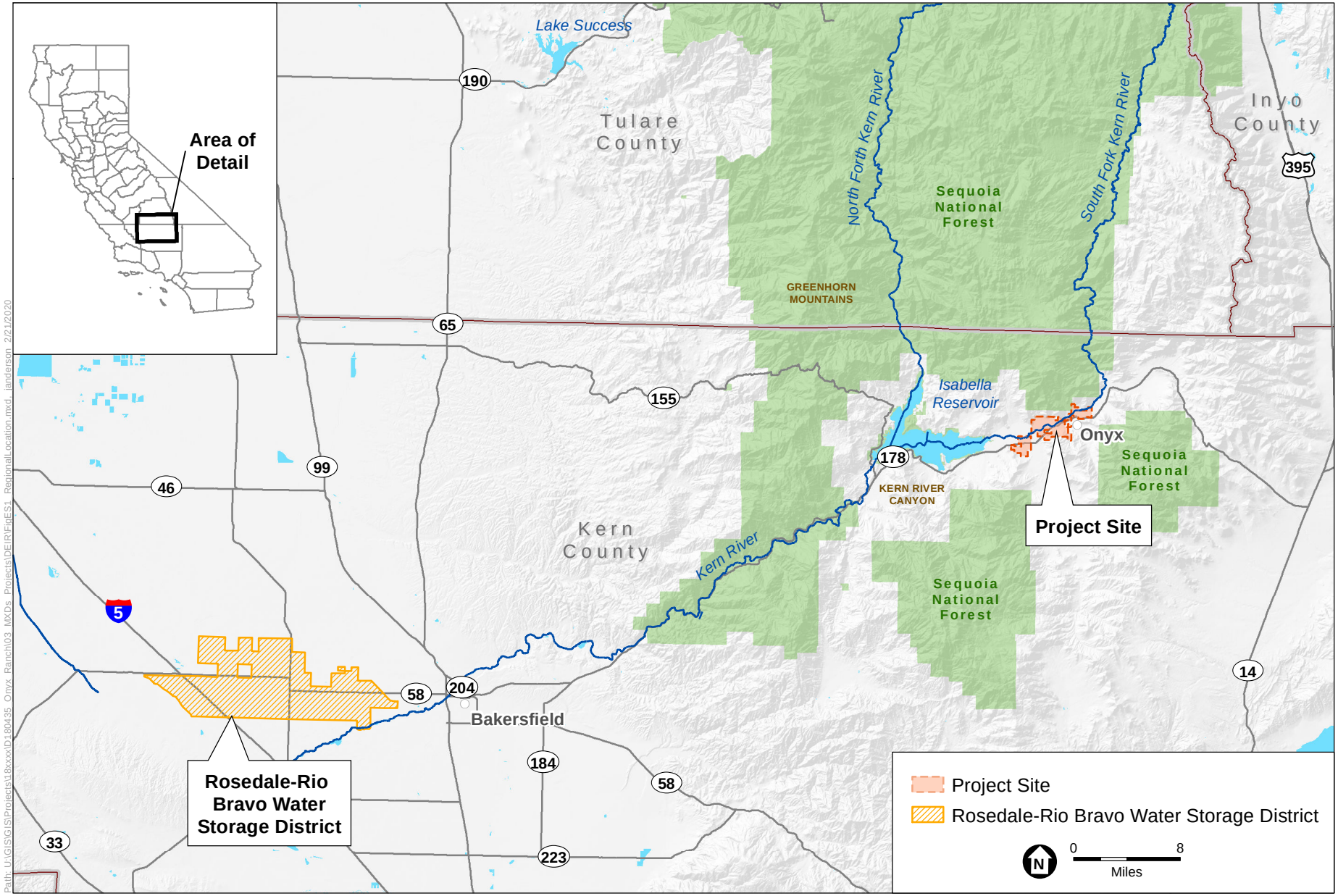
ES.2 Project Purpose and Objectives

Project Purpose

The RRBWSD has acquired the Onyx Ranch and one-third interest in Smith Ranch and the associated pre-1914 appropriative water rights on the South Fork of the Kern River. The purpose of the proposed project is to enable the RRBWSD to change the points of diversion and place of use of the surface water on the Onyx and Smith Ranches in order to move the water downstream for diversion and use in the RRBWSD's service area.

The proposed project would increase water supplies to the RRBWSD's service area to mitigate the shortages in the RRBWSD's contracted SWP water supply from the State of California, which has been steadily reduced due to environmental constraints impacting exports in the Sacramento/San Joaquin Delta. In addition, the proposed project would assist the RRBWSD in meeting its sustainability goals under the Sustainable Groundwater Management Act (SGMA). The proposed project would result in the use of the surface water moved downstream in the RRBWSD's service area as a beneficial use in Kern County.

The proposed project's change in point of diversion method is consistent with how the other "Kern River Interests" (including the Buena Vista Water Storage District, North Kern Water District, Kern Delta Water District, City of Bakersfield, Henry Miller Water District, and Kern County Water Agency) manage their respective Kern River pre-1914 water rights. This includes their use of changes in points of diversion and place of use in order for those agencies to manage and maximize their water supply benefits in Kern County. The analysis of the proposed project



SOURCE: ESRI; National Hydrography Dataset; DWR; Northcutt and Associates, 2015

Onyx Ranch South Fork Valley Water Project

Figure ES-1

Regional Project Location

ESA

uses a method that conservatively accounts for the quantity of pre-1914 appropriative rights and the available water supply that can be moved downstream as a result of the proposed project, without injury to other water right holders. This conservative method is not intended to quantify the full extent of the pre-1914 appropriative rights associated with the Onyx Ranch or Smith Ranch.

Project Objectives

The mission of the RRBWSD is to "…acquire surface water supplies for the preservation of water levels and quality throughout the district to ensure an affordable and sustainable water supply for all landowners." In their *Strategic Plan 2014-2024*, the RRBWSD has defined strategic goals to implement its mission, including the planning and implementation of the proposed project. In support of their mission and strategic goals, the RRBWSD's objectives for the proposed project consist of the following:

- Maximize the beneficial use of water rights associated with the Onyx Ranch and Smith Ranch in Kern County.
- Reduce dependence upon the imported water from the Sacramento/San Joaquin Delta (Delta) and provide a cost-effective, long-term method to replace a portion of the RRBWSD's contracted State Water Project (SWP) water supply that has become unreliable due to environmental restrictions in the Delta.
- Allow the RRBWSD to utilize the water rights associated with the Onyx Ranch and the Smith Ranch to maximize groundwater replenishment in the Kern County Sub-basin within the RRBWSD service area and assist RRBWSD with meeting its sustainability goals under SGMA.
- Increase water flows in the South Fork of the Kern River within existing habitat areas when consistent with water supply objectives.
- Incorporate project elements and project characteristics that address potential environmental effects on visual aesthetics, air quality, cultural resources, sensitive biological resources, water supply, and water quality.
- Include project elements that avoid:
  - Unreasonably affecting fish, wildlife, or other in-stream beneficial uses.
  - Unreasonably affecting the overall economy or environment of the South Fork Valley as well as the Kern River Valley.
  - Injuring any legal users of the waters of the South Fork of the Kern River.

ES.3 Project Description

The proposed project involves changing the points of diversion and place of use for the RRBWSD's pre-1914 appropriative surface water rights in the South Fork of the Kern River from the project site to the RRBWSD diversion point on the San Joaquin Valley floor. The proposed changes would allow water to flow past the project site (Onyx and Smith Ranches), resulting in a net increase in surface flows within the South Fork of the Kern River and the Isabella Reservoir. The increased amount of water accumulated in the Isabella Reservoir would be released through

the Isabella Dam and flow downstream in the Lower Kern River. The RRBWSD would divert the water from the Lower Kern River and deliver it to the groundwater recharge basins and channels in and near the RRBWSD's service area west of the City of Bakersfield in the San Joaquin Valley.

The amount of water involved in the proposed project would be the lesser of the amount available to the RRBWSD under its Onyx Ranch and Smith Ranch pre-1914 appropriative water rights from the South Fork of the Kern River during actual flow conditions and the typical pre-project irrigation demands on the project site, less a no-injury factor. Additionally, the proposed project would not include pumping groundwater to meet irrigation demand on the project site. In order to reduce irrigation demand on the Onyx Ranch, previously irrigated agricultural fields would be converted to non-irrigated pasture or native vegetation

The proposed project would implement the following elements:

- **Project Element 1** consists of the collection of surface flow diversion data for the South Fork of the Kern River and the preparation of data records for use by downstream water right holders. The implementation of the proposed project would include the continuation of the practice of monthly postings of daily flow and diversion records. In addition, more frequent coordination with the Kern River Watermaster and City of Bakersfield Water Department would occur.
- **Project Element 2** consists of the collection of groundwater pumping data and the preparation of data records for use by the water right holders. With the implementation of the proposed project, the RRBWSD would post daily pumping records on a monthly basis.
- **Project Element 3** consists of the collection of groundwater level and water quality data. The RRBWSD would collect data from the wells on the project site as well as seek additional data from other South Fork Valley water purveyors and post the records on a monthly basis.
- **Project Element 4** consists of the use of a comprehensive calibrated groundwater/surface-water model to estimate the net difference between the amount of South Fork of the Kern River water reaching Isabella Reservoir in the existing condition and with the proposed project.
- **Project Element 5** consists of the coordinated release of water from the Isabella Reservoir. The RRBWSD would coordinate with the USACE, Kern River Watermaster, and the Kern River Interests to release the RRBWSD water through the Isabella Reservoir and ensure that amount is not diverted by others between the Isabella Reservoir and the existing diversion points in the RRBWSD service area.
- **Project Element 6** consists of land management practices for the agricultural fields on the project site. In order to reduce irrigation demand on the Onyx Ranch, previously irrigated agricultural fields would be converted to non-irrigated pasture or native vegetation, with the exception of the Boone Field on the Onyx Ranch. On Onyx Ranch, the transition to non-irrigated pasture would be achieved by planting vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle. No substantial changes to agricultural practices at the Smith Ranch are anticipated with implementation of the proposed project other than a 33 percent reduction in irrigated acres. More effective use of existing available forage would be made with modifications to grazing management activities. The proposed project would involve development of up to 12 shallow, low-volume wells powered

by solar facilities, with aboveground 2,000 - 4,000 gallon water tanks, to provide livestock water and improved livestock distribution for more effective use of the available forage.

The proposed project would have an implementation timeframe that ranges up to approximately 3 years depending on hydrology and lease terms.

ES.4 CEQA Environmental Review Process

Notice of Preparation and Public Scoping

Pursuant to Section 15082 of CEQA Guidelines, the lead agency is required to send a Notice of Preparation (NOP) stating that an EIR will be prepared to the State Office of Planning and Research (OPR), responsible and trustee agencies, and the local County Clerk. The NOP must provide sufficient information in order for responsible and trustee agencies to make a meaningful response. At a minimum, the NOP must include a description of the project, location of the project, and probable environmental effects of the project (CEQA Guidelines Section 15082(a)(1)). Within 30 days after receiving the NOP, responsible and trustee agencies and OPR shall provide the lead agency with specific detail about the scope and content of the environmental information related to that agency's area of statutory responsibility that must be included in this Draft EIR (CEQA Guidelines Section 15082(b)).

On February 22, 2018, a NOP and Initial Study for the proposed project was posted with the California OPR and the Office of the Kern County Clerk and distributed via certified mail to potential responsible and trustee agencies and interested organizations and individuals for a 30-day public review period that ended March 23, 2018. A Notice of Availability (NOA) of the NOP and Initial Study was published in *The Bakersfield Californian* and *The Kern Valley Sun*, including the 30-day public review period and the information on the Scoping Meetings. The NOA was also mailed to other organizations and individuals in the Kern River Valley. The NOP and Initial Study were made available on the RRBWSD's website (https://www.onyxranch.org). In addition, copies of the NOP and Initial Study were made available for public review at the following Kern County libraries: Wofford Heights Branch, 6400 B Wofford Boulevard, Wofford Heights, CA 93285; Kern River Valley Branch, 7054 Lake Isabella Boulevard, Lake Isabella, CA 93240; and Beale Memorial Library, 701 Truxtun Avenue, Bakersfield, CA 93301.

The RRBWSD held two public Scoping Meetings during the 30-day NOP public review period for the proposed project. The meetings were both held on March 6, 2018. The first meeting was conducted at 10:00 A.M. at the RRBWSD office, 849 Allen Road, Bakersfield, CA 93314, and the second meeting was held at 6:00 P.M. at the South Fork Elementary School, 6401 Fay Ranch Road, Weldon, CA 93283. The NOA, NOP, Initial Study, proof of publication in the newspapers, and the Scoping Meeting sign-in sheets are provided in Appendix A Public Participation Process to this Draft EIR.

The RRBWSD received 37 written comment letters and emails in response to the NOP and Initial Study. The comments were received from public agencies, interested organizations, and interested individuals. Additionally, written comments were submitted by members of the public

at the Scoping Meetings. The written comments received are provided in Appendix A Public Participation Process to this Draft EIR.

Draft EIR Public Review

In accordance with CEQA Guidelines Section 15105, this Draft EIR has been submitted to the OPR State Clearinghouse for review by potential responsible and trustee agencies during a 60-day public review period. In addition, the NOA for this Draft EIR was posted at the Office of the Kern County Clerk and provided in two newspapers of general circulation in the project area, *The Bakersfield Californian* and *The Kern Valley Sun*. Copies of the NOA and a USB flash drive with the Draft EIR were provided to interested agencies, organizations, and individuals that participated in the scoping process for the Draft EIR and/or requested notification of the availability of this Draft EIR for public review and comment during the 60-day review period. Additionally, this Draft EIR has been made available on the RRBWSD website (https://www.rrbwsd.com) and the website for the proposed project (https://www.onyxranch.org). As permitted, printed copies of this Draft EIR will be available for public review at the following public libraries and the RRBWSD office when restrictions due to facility closures and the need for social distancing required in response to COVID-19 are lifted by the appropriate governmental agencies: Wofford Heights Branch, 6400 B Wofford Boulevard, Wofford Heights, CA 93285; Kern River Valley Branch, 7054 Lake Isabella Boulevard, Lake Isabella, CA 93240; and Beale Memorial Library, 701 Truxtun Avenue, Bakersfield, CA 93301.

Written comments on this Draft EIR must be received by the RRBWSD, at the address provided below, no later than July 27, 2020, at 5:00 P.M. The written comments received on this Draft EIR will be responded to and included in the Final EIR.

Dan Bartel, Assistant General Manager/District Engineer
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849 Allen Road
Bakersfield, CA 93314
DBartel@rrbwsd.com
FAX: (661) 589-1867

During the 60-day public review period, the RRBWSD will post a public information presentation on: the proposed project; the contents and conclusions of this Draft EIR; and the key steps for the remainder of the public review process including the hearing on the proposed project before the RRBWSD Board of Directors. It should be noted that the CEQA Guidelines require a 45-day public review period for a Draft EIR; however, the RRBWSD has extended that to a 60-day public review period for the submittal of public comments on this Draft EIR to allow for more time when communities are dealing with the effects of COVID-19. Additionally, although not a requirement of CEQA, a USB flash drive that contains the Draft EIR has been mailed with the NOA to agencies and the public to provide easier access to the environmental documentation.

ES.5 Summary of Environmental Impacts

Table ES-1, at the end of this chapter, presents a summary of the potential impacts of the proposed project, the mitigation measures recommended to reduce the identified impacts, and the level of significance including after incorporation of mitigation measures. This Draft EIR provides analysis of the potential impacts for the environmental topics where it was determined, in the NOP and Initial Study during the scoping process or through subsequent analyses, that the proposed project would result in a potential significant impact. The following provides an explanation of the terminology used to describe the magnitude of impacts identified in Table ES-1.

No impact: A no impact determination would occur if the proposed project would not result in a substantive change to the existing environmental conditions of the environmental topic that is being evaluated.

Less than significant impact: CEQA Section 21068 defines a significant impact as "a substantial, or potentially substantial, adverse change in the environment." Appendix G Environmental Checklist of the CEQA Guidelines provides additional guidance for determining which impacts would be regarded as significant. This Draft EIR applies the thresholds contained within Appendix G of the CEQA Guidelines and uses the CEQA definition of "significant impact." Therefore, a less than significant impact determination occurs if the proposed project would not result in a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the proposed project (see CEQA Guidelines Section 15382). However, an economic or social change by itself would not be considered a significant impact on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is a significant impact. Impacts determined to be less than significant would not require incorporation of mitigation measures.

Potentially significant impact: A significant impact would occur if the proposed project could result in a substantial or potentially substantial, adverse change in the existing environmental conditions of the environmental topic being evaluated. If such a determination is made, mitigation measures or alternatives must be considered if they would avoid or substantially reduce the significant impact. Feasible mitigation measures are then adopted and incorporated into the project to avoid or substantially reduce the significant impact to the extent feasible. The level of significance with incorporation of a mitigation measure is evaluated and can result in a determination that is **less than significant with mitigation** or **significant and unavoidable**. A significant and unavoidable impact is a substantial adverse effect on the environment that cannot be mitigated to a less than significant level, either because with mitigation it is still a significant impact or there is no feasible mitigation.

Mitigation measures are recommended for any identified potential significant impacts as a result of the proposed project. The significance determination provides the level of significance after the implementation of recommended mitigation measures.

ES.6 Alternatives to the Proposed Project

According to the CEQA Guidelines, an EIR must describe a reasonable range of alternatives to a project, or alternative project locations, that could feasibly attain most of the basic project objectives, and would avoid or substantially lessen the project's significant environmental effects. Although this Draft EIR indicates implementation of the proposed project would not result in any significant and unavoidable impacts, Chapter 5 Alternatives Analysis of this Draft EIR provides an analysis of the potential alternatives to the proposed project as follows.

Alternatives Rejected from Further Consideration

Alternatives may be eliminated from detailed consideration in the EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid any significant environmental effects. This Draft EIR briefly describes the rationale for the selection and rejection of alternatives to the proposed project and the information that was relied on when making that selection. It identifies three alternatives that were considered, but were determined to not meet the basic project objectives and, therefore, were rejected as infeasible by the RRBWSD during the scoping process and the preparation of this Draft EIR. Chapter 5 Alternatives Analysis describes the reasons for the exclusion of these following three alternatives from further consideration: Alternative Locations; Delta Conveyance Project Alternative; and Commercial Use Alternative.

Alternatives Analysis

As described above, according to CEQA Guidelines Section 15126.6(a), the purpose of analyzing project alternatives is to identify alternatives that "…would avoid or substantially lessen any of the significant effects of the project." Based on the analysis contained in Chapter 3 of this Draft EIR, with incorporation of mitigation measures, the potential significant impacts to biological resources, cultural resources, and paleontological resources would be reduced to a less than significant level. Therefore, the proposed project would not result in any significant and unavoidable environmental impacts.

According to CEQA Guidelines Section 15126.6(e)(1), an EIR alternatives analysis should include the analysis of a No Project Alternative to allow decision-makers to compare the potential impacts of approving a proposed project with the consequences that would occur without implementation of the proposed project. Therefore, the No Project Alternative is summarized below.

Additionally, according to CEQA Guidelines Section 15126.6(b), "the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project." Alternatives to the proposed project, including alternative locations, were evaluated in Chapter 5 Alternatives Analysis. As discussed above, based on the analyses, the Alternative Locations, the Delta Conveyance Project Alternative, and the Commercial Use Alternative were rejected from further consideration in this Draft EIR. However, one alternative, the 50 Percent Reduction Alternative, was determined to be appropriate as an alternative to the proposed project and, therefore, was analyzed in Chapter 5 Alternatives Analysis. The conclusion of that analysis is summarized further below.

No Project Alternative

The alternatives analysis in Chapter 5 describes that the No Project Alternative would not involve a change in the point of diversion and place of use of the surface water on the Onyx Ranch and the portions of Smith Ranch in which the RRBWSD owns one-third interest. The water currently applied to fields and pastures on the project site would continue to flow through agricultural ditches, be used for agricultural irrigation, and percolate into the ground as return flow. The fields and pastures currently irrigated with surface water on the Onyx Ranch and the Smith Ranch would not be converted to non-irrigated pasture or native vegetation. Similar to the proposed project, the Boone Field, which has non-transferrable riparian rights, would continue to be irrigated. The surface water would not remain in the South Fork of the Kern River, flow downstream to Isabella Reservoir, be released through the Isabella Dam to the Lower Kern River, or arrive at the RRBWSD's service area. The surface water would continue to be diverted and used for agricultural operations on the project site. None of the 12 shallow, low-volume wells powered by solar facilities, with their associated aboveground 2,000 - 4,000 gallon water tanks, for livestock water would be constructed. Existing agricultural practices on the project site would continue in the same manner and intensity as in the existing conditions.

The No Project Alternative would meet none of the project objectives. The beneficial use of water rights associated with the Onyx Ranch and the RRBWD's one-third interest in the Smith Ranch would not be maximized. This alternative would not meet the project objective of reducing dependence upon imported water from the Sacramento/San Joaquin Delta by providing a cost-effective, long-term method to replace a portion of the RRBWSD's contracted SWP water supply that has become unreliable due to environmental restrictions in the Delta. The objective to increase surface water flow on the South Fork of the Kern River within habitat areas also would not be met.

The other objectives of the proposed project pertaining to the inclusion of project elements and project characteristics that avoid unreasonable effects to biological resources, the economy, and the overall environment would not be met since the proposed project would not be implemented under the No Project Alternative.

Furthermore, continuing the existing agricultural operations on the Onyx and the Smith Ranch under the No Project Alternative is not economically feasible for the RRBWSD. Continuing the agricultural operations on the project site alone would not be financially sustainable for the RRBWSD as the payoff of the debt service associated with the property acquisition is required. The current lease income for the Onyx Ranch is significantly less than the total operating expenses including capital outlays, maintenance, utilities, and wages and benefits. If the proposed project would not be implemented, the RRBWSD would be obligated to find another use for the project site. Therefore, the implementation of the No Project Alternative is not feasible.

50 Percent Diversion Alternative

The alternatives analysis in Chapter 5 describes that the 50 Percent Diversion Alternative would involve the diversion of 50 percent less surface water from the South Fork of the Kern River to the RRBWSD's service area than with the proposed project. The amount of surface water the

proposed project would allow to remain in the South Fork of the Kern River for downstream diversion to RRBWSD's service area would be variable based on the annual water flow in the South Fork of the Kern River. The 50 Percent Diversion Alternative assumes the water diversion to RRBWSD's service area would be capped at approximately half. This alternative assumes that the 50 percent reduction in diversion of surface water to RRBWSD's service area would result in irrigation of approximately 50 percent of the agricultural fields and pastures on the Onyx Ranch while the remaining 50 percent of the fields and pastures on the Onyx Ranch would be transitioned to non-irrigated pastures for grazing and native vegetation. This alternative also would result in a 16.5 percent reduction in irrigated acres at Smith Ranch. Additionally, this alterative would require the installation of, on an as needed basis, up to 6 shallow, low-volume wells powered by solar facilities, with their associated aboveground tanks, for livestock water. Some or all of the same ditches on the project site would be used for the 50 Percent Diversion Alternative, but 50 percent more surface water would be diverted to the ditches on the project site when compared to the proposed project.

The 50 Percent Diversion Alternative would meet some, but not all of the project objectives. This alternative would not meet the objective to maximize the beneficial use of water rights associated with the Onyx Ranch and the Smith Ranch in Kern County. By reducing the amount of surface water that would remain in the South Fork of the Kern River and ultimately be diverted to the RRBWSD's service area with the 50 Percent Diversion Alternative, this alternative would not meet the project objective to reduce dependence upon imported water from the Sacramento/San Joaquin Delta and provide a cost-effective, long-term method to replace a portion of the RRBWSD's contracted SWP water supply that has become unreliable due to environmental restrictions in the Delta. This alternative would not meet the project objective to maximize the groundwater replenishment in the Kern County Sub-basin within the RRBWSD service area and assist the RRBWSD to meet the project objective of meeting its sustainability goals under SGMA. Other project objectives would generally be met.

Furthermore, continuing only 50 percent of the existing agricultural operations on the Onyx Ranch and reducing irrigation by 16.5 percent on the Smith Ranch under the 50 Percent Diversion Alternative is not economically feasible for the RRBWSD. Continuing only 50 percent of the agricultural operations on the project site would not be financially sustainable for the RRBWSD due to the payoff of the debt service associated with the property acquisition. The current lease income from the tenants on the Onyx Ranch is less than the total operating expenses including capital outlays, maintenance, utilities, and wages and benefits. If the proposed project would not be implemented, the RRBWSD would be obligated to find another use for the project site. Therefore, the implementation of the 50 Percent Diversion Alternative is not feasible.

Environmentally Superior Alternative

According to CEQA Guidelines Section 15126.6(e)(2), an EIR must identify the environmentally superior alternative. One of the primary purposes of the alternatives analysis is to identify alternatives to the proposed project that may avoid or substantially lessen significant project impacts (CEQA Guidelines Section 15126.6). With incorporation of mitigation measures, the proposed project would result in no significant and unavoidable impacts. Regardless, the

following summarizes the analysis to determine the environmentally superior alternative provided in Chapter 5 Alternatives Analysis.

The analysis concluded that the No Project Alternative would result in similar or less impacts in comparison to the impacts of the proposed project for all but two environmental topics. The No Project Alternative would continue the existing agricultural practices on the project site and would therefore result in greater air quality emissions and greenhouse emissions relative to the proposed project. Given the reduction in vehicle miles traveled for transporting cattle, the reduction in electricity consumption due to reduced groundwater pumping for irrigation, the fact that no additional electricity would be required to operate the proposed solar wells, and the minimal annual emissions from well construction, the net air quality and greenhouse gas emissions from the proposed project would be reduced relative to existing conditions (No Project Alternative). Additionally, the No Project Alternative would not meet any of the project objectives.

The 50 Percent Diversion Alternative was reviewed in accordance with the CEQA Guidelines requirement to identify an environmentally superior alternative other than the No Project Alternative. The 50 Percent Diversion Alternative would have similar impacts to the proposed project for all environmental topics except for biological resources. Depending on the portion of the project site that would remain irrigated, there is potential for the 50 Percent Diversion Alternative to result in fewer impacts to sensitive natural communities and riparian habitats, and the special-status species they support. Mitigation measures for biological resources would be required for the 50 Percent Diversion Alternative and, therefore, the level of significance determination would remain the same as for the proposed project. However, the 50 Percent Diversion Alternative has the potential to substantially lessen the amount of acres of sensitive natural communities and riparian habitats that would be impacted by the proposed project. In terms of objectives, by modifying the amount of surface water diverted to the RRBWSD's service area, the 50 Percent Diversion Alternative would meet some, but not all of the project objectives.

As discussed above, CEQA requires that an EIR identify the environmentally superior alternative of a project other than the No Project Alternative (CEQA Guidelines Section 15126.6(e)(2)). While the proposed project would result in potentially significant impacts, with the incorporation of mitigation measures, no significant and unavoidable impacts would occur. In considering the 50 Percent Diversion Alternative relative to the proposed project, the 50 Percent Diversion Alternative would result in similar impacts to the proposed project for all environmental topics except for biological resources. Although the 50 Percent Diversion Alternative would reduce the magnitude of the potential significant impacts to biological resources, with incorporation of mitigation measures recommended for the proposed project, the potential impacts of the 50 Percent Diversion Alternative and the proposed project would be reduced to a less than significant level. Overall, the 50 Percent Diversion Alternative would not avoid any impacts or mitigation measures associated with the proposed project and would not meet all of the project objectives.

ES.7 Areas of Controversy and Issues of Concern

Pursuant to Section 15123(b)(2) of the CEQA Guidelines, a lead agency is required to include areas of controversies raised by agencies and the public during the public scoping process. Based on comments made during the 30-day public review period in response to information published in the NOP and Initial Study, the following areas of controversy and issues of concern have been identified for the proposed project:

- Potential impacts related to air quality caused by increased dust as a result of less irrigation on the project site.
- Potential impacts to agricultural, biological, and scenic resources as a result of less irrigation on the project site.
- Potential for the increase in fire hazards with less irrigation on the project site.
- Potential impacts to cultural resources, including tribal cultural resources.
- Potential impacts to local groundwater supplies with the reduction in the surface water diverted to the project site.
- Potential impacts to flooding of roadways that cross the South Fork of the Kern River with the reduction in surface water diverted to the project site.
- Potential impacts to the local economy, eco-tourism, and agri-tourism.
- Potential impacts to storage and at Isabella Reservoir due to the reduction in surface water diverted to the project site.
- Potential impacts to flow and injury to water rights holders in the Lower Kern River, downstream of Isabella Reservoir.

ES.8 Significant Unavoidable Environmental Impacts and Irreversible Environmental Changes

The environmental review process under CEQA requires a brief discussion of the irreversible impacts or irretrievable commitment of resources associated with the proposed project. Specifically, CEQA Guidelines Section 15126.2 (b) and (c) require that the significant and unavoidable impacts of a proposed project, as well as any significant irreversible environmental changes that would result from project implementation be addressed in an EIR.

Significant Unavoidable Impacts

As required by CEQA Guidelines Section 15126.2(b), an EIR must describe any significant impacts that cannot be avoided, including those impacts that can be mitigated, but not reduced to a less than significant level. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons the project is being proposed, notwithstanding their effect, should be described.

Chapter 3 of this Draft EIR describes the potential environmental impacts of the proposed project and recommends mitigation measures to reduce the identified impacts to a less than significant

level. As discussed in this Draft EIR, the implementation of the proposed project, with incorporation of the recommended mitigation measures, would not result in any significant and unavoidable environmental impacts. Table ES-1, at the end of this chapter, presents a summary of the identified potential impacts and the recommended mitigation measures for incorporation into the proposed project.

Significant Irreversible Environmental Changes

Section 21100(b)(2)(b) of the Public Resources Code and Section 15126.2(c) of the CEQA Guidelines require that an EIR analyze the extent to which a project's primary and secondary effects would affect the environment and commit nonrenewable resources to uses that future generations would not be able to reverse. "Significant irreversible environmental changes" include the use of nonrenewable natural resources during the initial and continued phases of the project, should this use result in the unavailability of these resources in the future. Primary impacts and secondary impacts generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with a project. Irretrievable commitments of these resources are required to be evaluated in an EIR to ensure that such consumption is justified (CEQA Guidelines Section 15126.2(c)).

Per Section 15126.2(c) of the CEQA Guidelines, a project would result in an irreversible and irretrievable commitment of resources if it:

- Involved a large commitment of nonrenewable resources.
- Created primary and secondary impacts that would generally commit future generations to similar uses.
- Involved uses in which irreversible damage would result from any potential environmental accidents associated with the project.
- Proposed consumption of resources that were not justified (e.g., the project involves the wasteful use of energy).

The initial implementation of the proposed project, including transition of irrigated agricultural fields and pastures to non-irrigated pastures and native vegetation as well as the construction of up to 12 shallow, low-volume wells powered by solar facilities, would require use of negligible amounts of energy derived from nonrenewable resources such as diesel fuel and gasoline. The implementation of the ongoing operation of the proposed project would result in a long-term reduction in energy consumption due to the reduction or elimination of groundwater pumping by electric wells for irrigation on the project site. The proposed project would use solar energy, which is a renewable resource, to power the up to 12 new shallow, low-volume wells to provide livestock water. The water currently consumed in the proposed project area would instead be consumed in RRBWSD's service area, and as a result, would not result in an overall depletion of water as a nonrenewable resource. Therefore, the proposed project would not lead to wasteful, inefficient, or unnecessary consumption of energy, or involve a large commitment of nonrenewable resources, during project construction or operation.

ES.9 Organization of this EIR

This Draft EIR is organized into the following chapters and appendices:

- **ES. Executive Summary:** This chapter summarizes the contents of this Draft EIR. This includes a summary of: the proposed project, project purpose, and objectives; the CEQA environmental review process; the environmental impacts of the proposed project, recommended mitigation measures, and level of significance after mitigation; the alternatives to the proposed project; areas of controversy and issues of concern; and the organization of the Draft EIR.
- **Chapter 1, Introduction:** This chapter provides: the purpose of this Draft EIR; an overview of the proposed project; project background and purpose; the CEQA environmental review process for the proposed project; and the organization of this Draft EIR.
- **Chapter 2, Project Description:** This chapter provides an overview of the proposed project, describes the project purpose and objectives, provides a detailed discussion of the characteristics of the proposed project as required by CEQA Guidelines Section 15124, and defines the potential discretionary actions and approvals for implementation of the proposed project.
- **Chapter 3, Environmental Setting, Impacts and Mitigation Measures:** This chapter introduces the format of the environmental impact analysis, describes the cumulative projects, and includes individual sections for each environmental topic identified during the scoping process and included in this Draft EIR. For the analysis of each environmental topic, this chapter identifies: the existing environmental setting; the applicable regulatory requirements; the thresholds of significance, criteria used to define the significance of the potential impacts, and the analysis methodology; the potential direct, indirect, and cumulative impacts of the proposed project for each environmental topic; and recommended mitigation measures to reduce or avoid to the extent feasible the significant impacts of the proposed project. The environmental topics identified during the scoping process and analyzed in this Draft EIR include: Aesthetics; Agriculture; Air Quality; Biological Resources; Cultural Resources; Geology and Soils; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Population and Employment; Tribal Cultural Resources; and Utilities, Service Systems, and Energy.
- **Chapter 4, Growth Inducement:** This chapter describes the potential for the proposed project to induce growth.
- **Chapter 5, Alternatives Analysis:** This chapter presents an overview of the process used to identify and develop the potential alternatives to the proposed project, an analysis of the alternatives to the proposed project that were identified for evaluation in this Draft EIR, describes the potential impacts of feasible alternatives relative to the significant impacts of the proposed project; and identifies environmental superior alternatives to the proposed project.
- **Chapter 6, Report Preparers:** This chapter identifies those involved in preparing this Draft EIR, including persons and organizations consulted.
- **Appendices:** The Appendices contain important information including public participation documentation and technical reports that address the project site and proposed project that were used to support the analyses and conclusions made in this Draft EIR.

ES.10 References

AECOM, 2013. Final Draft Rosedale-Rio Bravo Water Storage District Groundwater Management Plan. Prepared for Rosedale-Rio Bravo Water Storage District, February 2013.

RRBWSD, 2019. About Us. Rosedale-Rio Bravo Water Storage District. Accessible at: https://www.rrbwsd.com/about-us. Accessed October 23, 2019.

TABLE ES-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
Aesthetics			
Potential Impact AES-1: Would the proposed project have a substantial adverse effect on a scenic vista?	Implementation of the proposed project would not have a substantial adverse effect on a scenic vista or cause the local scenic publically-accessible viewsheds of the South Fork Valley, the South Fork of the Kern River, or Kern River Valley to appear visually different than the existing conditions. Therefore, a less than significant impact would occur.	None required	Less than Significant Impact
Potential Impact AES-2: Would the proposed project (located in a non-urbanized area) 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 points.)	With implementation of the proposed project, the project site would transition from irrigated fields and pastures to non-irrigated fields and pastures or native vegetation and would result in drier agricultural fields and pastures covered with vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle. However, the proposed project would not substantially degrade the existing visual character or quality of public views of the project site and its surroundings. Therefore, a less than significant impact would occur.	None required	Less than Significant Impact
Potential Cumulative Impacts	With implementation of the proposed project, the resultant non-irrigated agricultural fields, pastures, grazing areas, and native vegetation on the project site would not alter local scenic viewsheds from publically-accessible viewing locations or substantially degrade the existing visual character of the project site. Therefore, the proposed project, when considered together with cumulative projects, would not result in significant cumulative impacts to aesthetic resources.	None required	Less than Significant Impact
Agriculture			
Potential Impact AGR-1: Would the proposed project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use?	With implementation of the proposed project, lands designated by the State Farmland Mapping and Monitoring Program as Prime Farmland and Unique Farmland on the Onyx Ranch would no longer be irrigated. However, the non-irrigated lands would be gradually converted to Grazing Land which is considered an agricultural use. Therefore, the proposed project would not result in the conversion of Prime Farmland or Unique Farmland to a non-agricultural use. Impact would be less than significant.	None required	Less than Significant Impact
Potential Impact AGR-2: Would the proposed project conflict with existing zoning for agricultural use, or a Williamson Act contract?	The proposed project would not conflict with existing agricultural zoning designations for the Onyx Ranch and the Smith Ranch on the project site. Therefore, no impact would occur. The proposed project would not conflict with or result in a need to terminate or modify the existing Williamson Act contract for the Smith Ranch. Although the proposed project would reduce the amount of water available for irrigation on the Smith Ranch, the existing fields would continue to be used for agricultural uses and grazing of cattle. Therefore, no impact would occur	None required	No Impact
Potential Impact AGR-3: Would the proposed project result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 (Williamson Act) for any parcel of 100 acres or more (Section 15206(b)(3) Public Resources Code) or Farmland Security Zone Contract within an agricultural preserve approved by Kern County?	The project site is located in Kern County Agricultural Preserve 15. However, the proposed project would not result in the cancellation of an existing Williamson Act contract within an agricultural preserve approved by Kern County. Therefore, no impact would occur.	None required	No Impact

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
Potential Cumulative Impacts	None of the four cumulative projects in the Kern River Valley would have adverse impacts to agricultural resources. Neither the proposed project nor the cumulative projects have the potential to result in the conversion of farmland to non-agricultural use, conflict with agricultural zoning designations, or result in cancellation of a Williamson Act contract or Farmland Security Zone Act contract. When the proposed project is considered together with cumulative projects, there would be no cumulatively considerable impacts to agricultural resources.	None required	Less than Significant Impact
Air Quality			
Potential Impact AIR-1: Would the proposed project conflict with or obstruct implementation of the applicable air quality plan?	The proposed project would be consistent the air quality plan because it would: be consistent with growth assumptions used to form the applicable air quality plan; would implement all applicable and reasonably available and feasible air quality control measures; and not exceed the EKAPCD thresholds. Therefore, the impact would be less than significant.	None required	Less than Significant Impact
Potential Impact AIR-2: Would the proposed project violate any air quality standard as adopted by the Eastern Kern Air Pollution Control District (EKAPCD) or established by the U.S. Environmental Protection Agency or contribute substantially to an existing or projected air quality violation?	During operation and maintenance of the proposed project, the estimated air quality emissions would not exceed the adopted air quality standards for criteria pollutants and, when compared to existing emissions would result in less fugitive dust emissions. Therefore, the proposed project would not violate air quality standards. The impacts would be less than significant.	None required	Less than Significant Impact
Potential Impact AIR-3: Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is designated non-attainment under an applicable federal or State ambient air quality standard, or for which the proposed project would exceed any of the adopted thresholds provided by the EKAPCD?	The proposed project is located in the Mojave Desert Air Basin (MDAB) which is currently designated as non-attainment for O3 and PM10. The proposed project would not result in a cumulatively considerable net increase in non-attainment pollutants, and would not exceed the EKAPCD thresholds of significance. Therefore, the impact would be less than significant.	None required	Less than Significant Impact
Potential Impact AIR-4: Would the proposed project expose sensitive receptors to substantial pollutant concentrations?	Implementation of the proposed project would result in a reduction of PM10 and PM2.5 emissions, which include fugitive dust, and no change in the emissions of toxic air contaminants (TACs), diesel particulate matter (DPM), carbon monoxide (CO), or other criteria pollutants. There would be no potential for sensitive receptors to be exposed to greater amounts of fugitive dust, TACs, DPM, or CO hotspots, and therefore, the impacts would be less than significant. Implementation of the proposed project would not result in the exposure of sensitive receptors, ranch employees, and employees of the well contractors to Valley Fever or asbestos at levels greater than the existing conditions. Therefore, the impacts would be less than significant	None required	Less than Significant Impact
Potential Cumulative Impacts	The proposed would not result in cumulatively considerable impacts because: the proposed project would not exceed EKAPCD's significance thresholds for criteria pollutants; would be consistent with and facilitate the implementation of the local air quality plan (i.e., Ozone Attainment Plan); and would reduce emissions in the CARB air basin (i.e., MDAB). Cumulative impacts to air quality would be less than significant.	None required	Less than Significant Impact

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
Biological Resources			
Potential Impact BIO-1: Would the proposed project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	The proposed project would result in no impact to the Fremont cottonwood forest within the potential impact area as a result of the proposed project since additional flow in the South Fork of the Kern River would likely benefit this community and improve the overall condition of the Fremont cottonwood forest on the project site and in the downstream areas. The southwestern willow flycatcher, western yellow-billed cuckoo, least Bell's vireo, yellow-breasted chat, and yellow warbler would benefit from the proposed project through the provision of higher quality contiguous breeding and foraging habitat within the Fremont cottonwood forest. The implementation of the proposed project would result in a less than significant impact to habitat for the southwestern willow flycatcher, western yellow-billed cuckoo, least Bell's vireo, yellow-breasted chat, and yellow warbler. With the implementation of the proposed project, the changes in the diversions of surface water from the South Fork of the Kern River would: reduce or eliminate the flow in some agricultural ditches and the resulting on-site marsh habitats adjacent to the fields; and/or result in drier conditions with the transition of irrigated fields and pastures to non-irrigated pastures and native vegetation on the project site. These changes to the project site could result in potential significant impacts to the suitable breeding and foraging habitat for the tri-colored blackbird and Kern red-winged blackbird. Incorporation of Mitigation Measures BIO-1 and BIO-2 would reduce this potential significant impact to a less than significant level. With implementation of the proposed project, no changes to the upland habitat that is suitable for Crotch bumble bee, California legless lizard, loggerhead shrike, pallid bat, and Townsend's big eared bat would occur and no impact to these special-status species would be anticipated. Conveyance of more water into the South Fork of the Kern River as part of the proposed project would be a benefit to Loggerhead shrike, Kern Plateau salamander, Cooper's hawk, and summer tanager and their habitat. The proposed project would result in no changes to nesting habitat for golden eagle and extensive foraging habitat for that species would remain. Therefore, potential impacts to these special-status species would be less than significant. The California androsace, Kern River evening-primrose, Kern County evening-primrose, white pygmy poppy, Kern Canyon clarkia, rose-flowered larkspur, limestone dudleya, Tracy's eriastrum, and Onyx Peak bedstraw do not occur within riparian or wetland communities. As a result, no impact to these nine special-status plant species would occur with implementation of the proposed project. With implementation of the proposed project, the reduction in the water flowing along the Hillside Ditch and the reduction in irrigation levels in the Landers I and II Tracts and the Unnamed Agricultural Tracts located in the Givney Pasture may have an adverse effect on populations of alkali mariposa lily. Therefore, the implementation of the proposed project has the potential to result in a potential significant impact to the alkali mariposa lily. Incorporation of Mitigation Measures BIO-1 and BIO-3 would reduce this impact to a less than significant level.	**BIO-1**: Assessment and Monitoring Program: A qualified biologist shall prepare and implement a pre-project and post-project Assessment and Monitoring Program. The pre-project phase of the program shall confirm and update the existing baseline conditions and extents of the creeping rye grass turfs, red willow thickets, cattail marsh, mulefat thickets, and sandbar willow thickets within the potential impact area. The post-project phase of the program shall be developed to systematically monitor the condition of each of the aforementioned sensitive natural communities and riparian habitats located within the potential impact area to determine whether each sensitive natural community and/or riparian habitat is experiencing a level of disturbance as a result of the project implementation and operational activities. For the Assessment and Monitoring Program, the physical condition of each sensitive natural community and riparian habitat shall be documented during both the pre-project and post-project monitoring activities. Documentation shall include, but is not limited to: GPS mapping to monitor community extents, qualitative and quantitative vegetation analysis (including native and non-native cover), and annual reporting. Vegetation analysis methods, including determination of the level of site disturbance, shall be conducted in accordance with accepted industry standards, such as the CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment (Rapid Assessment) and Relevé methods (CDFW, 2019b). Post-project monitoring activities shall continue for a period of 5 years, to be initiated one year following implementation of the project. Pre-project surveys and post-project monitoring documentation shall be submitted to and retained at the RRBWSD administrative office. The CDFW-CNPS Rapid Assessment/Relevé method of vegetation sampling includes the following standards for classifying disturbances from the reduction or elimination of surface water diversion (Disturbance Code 14) and other disturbances within the potential impact area: • Light: less than 33% of the stand is impacted. • Moderate: between 33% and 66% of the stand is impacted. • Heavy: more than 66% of the stand is impacted. If the assessment and monitoring program determines a Light, Moderate, or Heavy Disturbance (as defined in the CDFW-CNPS Rapid Assessment/Relevé methods) in the potentially impacted sensitive natural communities and/or riparian habitats identified, the area of impact shall be quantified through comparison with the established pre-project baseline conditions. For purposes of comparing post-project implementation conditions after the 5-year monitoring period with the pre-project baseline conditions, the impacts characterized as Light, Moderate, or Heavy Disturbance shall include: • Light: less than 33% of sample plots averaged over the 5-year monitoring period show a 20% or greater reduction in absolute native cover of the sensitive natural community and/or riparian habitat • Moderate: between 33% and 66% of sample plots averaged over the 5-year monitoring period show a 20% or greater reduction in absolute native cover of the sensitive natural community and/or riparian habitat • Heavy: more than 66% of sample plots averaged over the 5-year monitoring period show a 20% or greater reduction in absolute native cover of the sensitive natural community and/or riparian habitat If the monitoring biologist determines that extraneous factors (i.e., drought, non-project-related anthropogenic influences, other uncontrollable factors) could have adversely influenced absolute native cover of the sensitive natural community and/or riparian habitat during the 5-year monitoring period, the monitoring period may be extended at the monitoring biologist's discretion to account for these factors. At the conclusion of the monitoring period, impacts evaluated in terms of Light, Moderate, or Heavy Disturbance shall be mitigated as described below. Mitigation Options at Conclusion of 5-Year Monitoring Period: For impacts to creeping rye grass turfs, red willow thickets, cattail marsh, mulefat thickets, or sandbar willow thickets, the RRBWSD shall provide one or a combination of the following mitigation options unless the habitat is occupied by tri-colored blackbird (which would be mitigated in accordance with BIO-2): 1. No mitigation required for Light Disturbance. 2. On- and/or off-site preservation, creation, restoration, and/or enhancement of sensitive natural communities or riparian habitat at a ratio no less than 1:1 for Moderate Disturbance impacts, and no less than 2:1 for Heavy Disturbance impacts. A habitat mitigation plan (HMP) shall be developed to include information on site selection, grading and site preparation, seeding and planting plans, irrigation, maintenance and monitoring activities, success criteria, adaptive management/contingency measures, and provisions for site preservation and long-term management. The HMP shall focus on the preservation, creation, restoration, and/or enhancement of equivalent habitats within suitable habitat areas of the project site and/or off-site.	Less than Significant Impact with Mitigation

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
	The Fremont cottonwood forest within the potential impact area provides is included in the USFWS designated critical habitat for the Southwestern willow flycatcher and western yellow-billed cuckoo. However, the potential for impacts to this community as a result of the proposed project would not be expected since the modification of surface water diversions would result in the conveyance of more water in the South Fork of the Kern River, which is expected to benefit the Fremont cottonwood forest and associated riparian habitat, resulting in a benefit to the critical habitat areas for the southwestern willow flycatcher and yellow-billed cuckoo. Therefore, no impact would occur to the Fremont Cottonwood forest in the critical habitat for the Southwestern willow flycatcher and western yellow-billed cuckoo. With the implementation of the proposed project, potential impacts to red willow thickets, mulefat thickets, and cattail marsh within the critical habitat for the southwestern willow flycatcher and western yellow-billed cuckoo would have the potential to occur. The incorporation of Mitigation Measure BIO-1 would reduce the impacts to designated critical habitat for these species to a less than significant level.	3. The purchase of mitigation credits from an approved mitigation bank at a ratio of no less than 1:1 for Moderate Disturbance and no less than 2:1 for Heavy Disturbance. **BIO-2**: Prior to implementation of the proposed project, a qualified biologist shall conduct surveys for the tri-colored blackbird throughout the cattail marsh, mulefat thickets, sandbar willow thickets, and tamarisk thickets within the potential impact area, and submit a report to the RRBWSD of survey findings. The report shall be submitted to and retained at the RRBWSD administrative office. If tri-colored blackbirds are not detected within the suitable breeding habitat, no further action is necessary. If tri-colored blackbirds are observed nesting within the potential impact area, for a period of 5 years, an annual focused survey shall be conducted for the tri-colored blackbird within the areas of occupied habitat to monitor for the continued use of the occupied habitat for nesting. The quality and quantity of the occupied habitat also shall be monitored in accordance with the Assessment and Monitoring Program identified in Mitigation Measure BIO-1. The annual survey and monitoring data shall be submitted for a period of 5 years and retained at the RRBWSD administrative office. If the annual focused surveys reveal the nesting colony is no longer utilizing occupied habitat and there is a decline in the occupied habitat quality based on disturbance levels defined in Mitigation Measure BIO-1 or decline in quantity from the pre-project baseline conditions, the tri-colored blackbird nesting habitat shall be replaced at a ratio of 2:1. The replacement habitat shall be suitable to support tri-colored blackbird breeding habitat with similar nesting and foraging habitat functions as is provided by the existing habitat. **BIO-3**: Prior to implementation of the proposed project, a qualified biologist/botanist shall conduct a focused special-status plant survey throughout the creeping rye grass turfs for alkali mariposa lily during the appropriate blooming period (April - June) to determine the presence/absence of the species. If the species is detected, the population shall be mapped and demarcated. If through the implementation of Mitigation Measure BIO-1 (post-project Assessment and Monitoring Program) it is determined that the creeping rye grass turfs are declining or being reduced as a result of the project implementation and may result in reduction in the alkali mariposa lily, one or a combination of the following methods shall be implemented: 1. Onsite and/or off-site translocation of surviving alkali mariposa lily bulbs to suitable habitat preserved through a conservation easement. Translocation shall occur at the end of the dormant season (summer) and prior to the forecast of initial fall rains. 2. Seed collection and propagation for at least two-years old bulbs to be planted prior to the forecast of initial fall rains into suitable habitat preserved through a conservation easement. 3. Payment into a mitigation bank or through an established in-lieu fee program specific to the conservation of alkali mariposa lily. The selected method shall be incorporated into the pre-project and post-project Assessment and Monitoring Program required by Mitigation Measure BIO-1. Survey and monitoring data shall be submitted to and retained by the RRBWSD administrative office.	

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
Potential Impact BIO-2: Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Joshua tree woodland is an upland community that is not dependent on surface water flows and is not situated in any of the agricultural tracts within the study area. Therefore, this sensitive natural community is not within the potential impact area. With implementation of the proposed project, no impacts are anticipated to this upland community. With implementation of the proposed project, the additional flow in the South Fork of the Kern River that would occur would likely benefit the Fremont cottonwood forest sensitive natural community and improve the overall condition of the community within the potential impact area and the South Fork Valley. Therefore, with implementation of the proposed project, the potential impacts to Fremont cottonwood forest would be less than significant. Implementation of the proposed project would result in modifications to the timing and amount of surface water diverted from the South Fork of the Kern River and flow through the ditches on the project site. This would reduce or eliminate the irrigation of the fields within the potential impact area with the exception of Boone Field. Therefore, the proposed project would have potential significant impacts to the following sensitive natural communities and riparian habitats associated with the ditches and fields within the potential impact area: 399.4 acres of creeping rye grass turfs; 4.7 acres of red willow thicket; 19.0 acres of cattail marsh; 8.0 acres of mulefat thicket; and 5.0 acres of sandbar willow thickets. Incorporation of Mitigation Measure BIO-1 would reduce the potential significant impacts to these sensitive natural communities and riparian habitats to a less than significant level.	Implementation of Mitigation Measure BIO-1	Less than Significant Impact with Mitigation
Potential Impact BIO-3: Would the proposed project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	Implementation of the proposed project would provide a benefit to the South Fork of the Kern River by allowing more water to remain within the main river channel to support the existing Fremont cottonwood forest and associated riparian habitats of the river. Therefore, the proposed project would have a less than significant impact to the 70.4 acres of Fremont cottonwood forest within the potential impact area. Implementation of the proposed project would result in modification to the timing and amount of surface water diverted from the South Fork of the Kern River and flowing through ditches on the project site and would reduce or eliminate irrigation of the fields within the potential impact area with the exception of Boone Field. The proposed project would potentially reduce some riparian habitat within the portions of the potential impact area that would be adjacent to the South Fork of the Kern River that is supported by the man-made diversions. Implementation of the proposed project would have potential significant impacts to 399.4 acres of creeping rye grass turfs, 154.4 acres of salt grass flats, 4.7 acres of red willow thickets, 19.0 acres of cattail marsh, 8.0 acres of mulefat thickets, and 5.0 acres of sandbar willow thickets. Incorporation of Mitigation Measure BIO-1 and Mitigation Measure BIO-4 would reduce the potential significant impacts to these riparian habitats that may contain federal or State-protected wetlands to a less than significant level. Implementation of the proposed project would result in the installation and operation, on an as needed basis, of up to 12 wells operated by solar facilities and associates tanks that would be sited in disturbed areas on the project site. No impacts to riparian habitats or wetlands would occur.	Implementation of Mitigation Measure BIO-1 and/or Mitigation Measure BIO-2 for red willow thickets, cattail marsh, mulefat thickets, sandbar willow thickets, and creeping rye grass turfs. **BIO-4**: The Assessment and Monitoring Program and mitigation requirements outlined in Mitigation Measure BIO-1 shall apply to salt grass flats within the potential impact area.	Less than Significant Impact with Mitigation

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
Potential Impact BIO-4: Would the proposed project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	A small southern portion of the study area, located outside of the potential impact area, is identified as part of a wildlife connectivity area by the California Essential Habitat Connectivity Project. However, since it is outside of the potential impact area, the proposed project would have no direct impact to this designated wildlife connectivity area. Implementation of the proposed project would be a benefit to the South Fork of the Kern River by allowing more water to remain within the main river channel to support the extensive Fremont cottonwood forest and associated riparian habitats of the river. However, the proposed project would result in the reduction or elimination of surface water diversions within the agricultural ditches and the reduction of applied irrigation water to fields would potentially reduce some riparian habitats adjacent to the Kern River that is supported by these man-made diversions. The potential impacts related to the loss of or decline of these riparian habitats would be reduced to a less than significant level with incorporation of Mitigation Measure BIO-1. With this mitigation measure, the extensive riparian habitat provided throughout the South Fork of the Kern would provide ample habitat and resources for continued wildlife movement locally and regionally. Therefore, potential impacts to wildlife movement would be less than significant. With the implementation of the proposed project, the installation of the shallow, low-volume wells would be scheduled outside of the nesting bird season. Due to the very limited disturbance footprint, installation of the well components would be negligible and would not inhibit regional or local movement through the area. Potential impacts to wildlife movement would be less than significant.	Implementation of Mitigation Measure BIO-1.	Less than Significant Impact with Mitigation
Potential Cumulative Impacts	With implementation of the proposed project, the potential impacts to biological resources would be less than significant or reduced to a less than significant impact level with incorporation of Mitigation Measures BIO-1, BIO-2, and BIO-4. The proposed project's contribution to cumulative impacts to biological resources would not be cumulatively considerable and the proposed project, considered together with Cumulative Projects A, B, C, and D, would not result in cumulative significant impacts to biological resources.	Implementation of Mitigation Measures BIO-1, BIO-2, and BIO-4	Less than Significant Impact with Mitigation
Cultural Resources			
Potential Impact CUL-1: Would the proposed project cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Section 15064.5?	With implementation of the proposed project, physical changes to the nine historical resources on the project site would be avoided during the proposed transition of irrigated agricultural fields and pastures to non-irrigated pastures and native vegetation, and during the siting and installation of up to 12 shallow, low-volume wells powered by solar facilities and their accompanying aboveground water tanks. Therefore, no impacts to these nine historical resources (six historic agricultural ditches, two homestead/ranch complexes, and one historic road) would be anticipated with implementation of the proposed project. The proposed project would not cause a substantial adverse change in the significance of a historical resource.	None required	Less than Significant Impact

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
Potential Impact CUL-2: Would the proposed project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5?	With implementation of the proposed project, there would be no impacts to six archaeological resources on the project site (two historical cemeteries, two prehistoric milling stations, and two prehistoric sites with rock art) because the resources are located on the margins of the project site, south of Highway 178 on the slopes and hillsides above the South Fork Valley floor. With implementation of the proposed project, there would be no impact to the isolated millingstone located on the project site because it does not qualify as a unique archaeological resource under CEQA. With implementation of the proposed project, the two historic refuse dumps located within an existing non-irrigated pasture would not be affected by the pasture transition activities associated with the proposed project. However, the installation of the proposed shallow, low-volume wells could have the potential to affect the two historic refuse dumps if ground disturbance occurs within the boundaries of these known resources. Nevertheless, based on siting criteria that wells be located in previously disturbed areas adjacent to existing dirt roads for access, the proposed shallow, low-volume wells would not be located in the non-irrigated pasture that includes the two historic refuse dumps. Therefore, the potential impacts to these two archeological resources (two historic refuse dumps) would be less than significant. With implementation of the proposed project, the prehistoric lithic scatter located within an irrigated field that is proposed for transition to a non-irrigated pasture would not be affected by the pasture transition activities. However, since this resource is located near an existing dirt road, if this area is selected as a potential well location, there would be the potential for the prehistoric sparse lithic scatter to be affected by well installation activities, including drilling of a proposed shallow, low-volume well in a disturbed area adjacent to the road. Therefore, there is the potential for the proposed project to result in a significant impact to this archeological resource (prehistoric lithic scatter). Incorporation of Mitigation Measure CUL-1 would reduce this impact to a less than significant level. With implementation of the proposed project, the ground disturbing activities associated with well installation would have the potential to cause a substantial adverse change in the significance of unknown archaeological resources qualifying as unique archaeological resources under CEQA Section 15064.5, should they be encountered. Therefore, the proposed project would have the potential to result in a significant impact from the unanticipated discovery of archaeological resources during the installation of up to 12 shallow, low-volume wells on the project site. Incorporation of Mitigation Measure CUL-2 would reduce the potential impacts from the unanticipated discovery of archaeological resources to a less than significant level.	**CUL-1:** Retention of Qualified Archaeologist and Avoidance of Prehistoric Sparse Lithic Scatter (P-15-013792). The RRBWSD shall retain a Qualified Archaeologist that meets the minimum professional qualifications standards (PQS) set forth by the Secretary of the Interior (SOI) (codified in 36 Code of Federal Regulations [CFR] Part 61; 48 FR 44738-44739) to oversee the construction monitoring activities for the cultural resources work associated with the proposed project. Prior to the siting of any shallow, low-volume well components in or adjacent to the agricultural field where the prehistoric sparse lithic scatter (P-15-013792) occurs, the Qualified Archeologist shall map the prehistoric sparse lithic scatter location with a buffer around the site perimeter. The map shall be used to determine the area of avoidance for the prehistoric sparse lithic scatter (P-15-013792) during any activities associated with the drilling and construction of the shallow, low-volume wells (including well pad location, materials and equipment staging area, and the dirt access road to be used). The map of the prehistoric sparse lithic scatter (P-15-013792) with the buffer area shall be included in the confidential cultural resources report to be retained on file at the RRBWSD administrative office. **CUL- 2**: Archaeological Monitoring and Unanticipated Discoveries. All ground disturbing activities associated with the installation of the shallow, low-volume wells shall be monitored by an archaeological monitor working under the direction of the Qualified Archaeologist. In the event of the unanticipated discovery of archaeological materials, the contractor shall immediately cease all work activities at the well site and within 100 feet of the discovery until it is evaluated by the Qualified Archaeologist. Construction shall not resume until the Qualified Archaeologist has conferred with the RRBWSD and the appropriate Native American representatives (if the find is of Native American origin) on the significance of the resource as an historical resource or as a unique archaeological resource. Based on the determination of the significance of the discovery, the RRBWSD shall implement a strategy for avoidance and preservation in place. A Treatment Plan to implement the avoidance and preservation in place shall be prepared and, after approval by the RRBWSD, shall be implemented under the direction of the Qualified Archaeologist. The Treatment Plan and associated documentation shall be retained at the RRBWSD administrative office.	Less than Significant Impact with Mitigation
Potential Impact CUL-3: Would the proposed project disturb any human remains, including those outside of formal cemeteries?	With implementation of the proposed project, the ground disturbing activities associated with installation of the shallow, low-volume solar wells and field conversion activities have the potential to disturb unknown human remains, specifically human remains outside of a formal cemetery. This would be considered a significant impact. Incorporation of Mitigation Measure CUL-3 would reduce the potential impacts to human remains to a less than significant level.	**CUL-3:** Human Remains Discovery. If human remains are encountered, all work in the vicinity (within 100 feet) of the find shall cease and the County Coroner shall be contacted in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American in origin, the Native American Heritage Commission (NAHC) shall be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98 (as amended by AB 2641). The NAHC shall designate a Most Likely Descendent (MLD) for the remains per PRC Section 5097.98. Until RRBWSD has conferred with the MLD, the immediate vicinity where the discovery occurred shall not be disturbed by further activity and shall be adequately protected according to generally accepted cultural or archaeological standards or practices, taking into account the possibility of multiple burials.	Less than Significant Impact with Mitigation

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
Potential Cumulative Impacts	The proposed project is required to implement Mitigation Measures CUL-1 and CUL-2 for archaeological resources, and to comply with CUL-3 consistent with State regulatory measures for the protection of human remains. Similar measures would be required for cumulative projects to mitigate potential impacts to cultural resources. Therefore, when considered together with cumulative projects, the proposed project's contribution to cumulative impacts to historical resources, archaeological resources, and human remains would not be cumulatively considerable. Cumulative impacts on historical resources, archaeological resources, and human remains would be less than significant with mitigation.	Implementation of Mitigation Measures CUL-1 through CUL-3	Less than Significant Impact with Mitigation
Geology and Soils			
Potential Impact GEO-1: Would the proposed project directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death, involving the rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo earthquake Fault Zone Map?	Implementation of the proposed project would not locate any new habitable structures or facilities on an active fault and would not include actions that would trigger surface rupture or fault movement. There would be no change in the potential risk of loss, injury, or death involving rupture of a known earthquake fault due to implementation and operation of the proposed project. Impacts would be less than significant. Implementation of the proposed project would not result in a change to the water surface elevation or volume of water stored at Isabella Reservoir in accordance with the Water Control Manual. There would be no change in the potential risk of loss, injury, or death involving rupture of the Kern Canyon fault that passes through Isabella Reservoir and Dam due to implementation and operation of the proposed project. Impacts would be less than significant	None required	Less than Significant Impact
Potential Impact GEO-2: Would the proposed project directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death, involving strong seismic ground shaking?	Implementation of the proposed project would not introduce additional people or new habitable structures or facilities on the project site. Therefore, implementation of the proposed project would not cause potential adverse effects relative to seismic shaking, including the risk of loss, injury, or death. Impacts would be less than significant.	None required	Less than Significant Impact
Potential Impact GEO-3: Would the proposed project directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death, involving seismic-related ground failure, including liquefaction, lateral spreading, and landslides strong seismic ground shaking?	The proposed project would not construct any new structures that would expose people or property to seismic-induced ground failures including landslides, liquefaction, or lateral spreading. Impacts would be less than significant. The proposed project would not change existing conditions for areas within the project site that have potential for landslide to occur. Impacts would be less than significant. The proposed project would not include actions that could trigger landslides, liquefaction, or lateral spreading. Impacts would be less than significant.	None required	Less than Significant Impact

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
Potential Impact GEO-4: Would the proposed project result in substantial soil erosion or loss of topsoil?	The proposed project would maintain vegetative cover on the fields and pastures on the project site, which would stabilize soils and prevent erosion and loss of topsoil. In addition, EKAPCD Rule 402 and KRVSP Conservation Element Air Quality Policies and Implementation Measures would require implementation of fugitive dust control on the project site. Impacts related to soil erosion and loss of topsoil would be less than significant. The proposed project would result in an increase in flow in the South Fork of the Kern River and Lower Kern River, adjacent to and downstream of the project site. Since the increase in flows would not significantly alter the flow volume of the surface water in the South Fork of the Kern River and Lower Kern River, the proposed project would not result in increased soil erosion compared to the existing conditions. Impacts related to soil erosion would be less than significant.	None required	Less than Significant Impact
Potential Impact GEO-5: Would the proposed project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	The proposed project does not include activities or elements that would affect the portions of the project site that are in the foothills and that are susceptible to landslides. The proposed project would not induce landslides or affect the existing potential for landslides to occur in the foothill portions of the project site. Impacts would be less than significant. The proposed project would result in negligible fluctuations in groundwater levels in alluvial soils units that are less susceptible to subsidence. As such, the potential impacts to subsidence would be less than significant. The proposed project would not include actions that could trigger landslides, subsidence, or collapse. Impacts would be less than significant.	None required	Less than Significant Impact
Potential Impact GEO-6: Would the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	The proposed project would install a maximum of up to 12 shallow, low-volume wells powered by solar facilities on an as needed basis. Depending on the depth of each well, the drilling activity could have the potential to result in a significant impact to paleontological resources. Impacts to paleontological resources would be reduced to a less than significant level with implementation of Mitigation Measure GEO-1. The proposed project would not be located in an area with unique geologic resources. No impact to unique geologic landforms would occur.	**GEO-1**: Prior to the start of drilling activities for each new shallow, low-volume well on the project site that would occur in an area with older alluvium, a Qualified Paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards (Qualified Paleontologist) shall be retained by the RRBWSD. The Qualified Paleontologist shall be responsible for oversight of: monitoring activities during well drilling activities; sediment sampling, and collection, identification; and final disposition of identified fossils. The steps to be taken are as follows: • The paleontological resources monitoring shall be conducted for all ground-disturbing activities for well drilling at depths greater than 5 feet. The monitoring shall be performed by a qualified paleontological monitor under the direction of the Qualified Paleontologist. The monitor shall recover sediment samples from each 5-foot interval and prepare a daily log detailing the type of drilling activities, soils observed at various depths, and any discoveries recovered. • The sediment samples recovered from each 5-foot interval shall be screened onsite or elsewhere and the resulting concentrate shall be sorted using a binocular microscope. Any significant fossils collected shall be prepared to the point of identification and curated into an accredited repository with retrievable storage. If caliche materials are recovered from the sediment samples, a radiocarbon date shall be obtained. • The Qualified Paleontologist shall prepare a final monitoring and mitigation report for submittal to the RRBWSD in order to document the results of the monitoring effort and any discoveries. If there are significant discoveries, fossil locality information and final disposition shall be included with the final report that will be submitted to the appropriate repository and the RRBWSD.	Less Than Significant Impact with Mitigation
Potential Cumulative Impacts	Neither the proposed project, nor the cumulative projects, would have significant impacts to existing geology or soils. Potential impacts of the proposed project related to paleontological resources during construction activities for the shallow, low volume wells would be reduced to a less than significant level with implementation of Mitigation Measure GEO-1. As such, when considered together with the cumulative projects, the proposed project would not result in cumulatively considerable impacts.	Implementation of Mitigation Measure GEO-1	Less than Significant Impact with Mitigation

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
Greenhouse Gas Emissions			
Potential Impact GHG-1: Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Implementation of the proposed project would reduce vehicle miles traveled associated with transporting cattle and reduce electricity consumption associated with groundwater pumping for irrigation. Therefore, GHG emissions as a result of the proposed project would be similar or reduced relative to existing conditions. The impact would be less than significant.	None required	Less than Significant Impact
Potential Impact GHG-2: Would the proposed project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	The implementation of the proposed project would not conflict with plans or policies established for the reduction of GHG emissions. The impact would be less than significant.	None required	Less than Significant Impact
Potential Cumulative Impacts	With implementation of the proposed project, there would be no net increase in GHG emissions relative to existing conditions, and the proposed project would not result in a cumulatively considerable impact. The proposed project would result in less than significant cumulative impacts.	None required	Less than Significant Impact
Hazards and Hazardous Materials			
Potential Impact HAZ-1: Would the proposed project 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 and the environment?	The proposed project would not be located on or adjacent to a site identified as a listed hazardous materials site pursuant to Government Code Section 65962.5. Therefore, the proposed project would not create a significant hazard to the public or the environment through the release of hazardous materials. No impact would occur.	None required	No Impact
Potential Impact HAZ-2: Since the project site is located in a State responsibility area (SRA) and portions of the project site are classified as a very high fire severity zone, would the proposed project substantially impair an adopted emergency response plan or emergency evacuation plan?	The proposed project would not include changes to adjacent roadways or other access points to the project site or create traffic that would impair any Emergency Operations Plan (EOP) operations or emergency access that would take place on the project site or in the surrounding area. The proposed project would have no impact to the emergency response or emergency evacuation plan as defined by the Kern County EOP.	None required	No Impact
Potential Impact HAZ-3: Would the proposed project expose people or structures to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors that exacerbate wildfire risks?	The proposed project would increase the volume of flammable vegetation on the project site. With adherence to the regulatory requirements that address fire hazard reduction, implementation of the proposed project would not expose people or structures to significant risks from pollutant concentrations from a wildfire or cause the uncontrolled spread of a wildfire. The impact would be less than significant.	None required	Less than Significant Impact
Potential Impact HAZ-4: Would the proposed project 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?	The changes to the existing conditions on the project site as a result of the proposed project would occur to the agricultural fields and pastures located on the relatively level areas on the project site. With implementation of the proposed project, no changes would occur to the existing conditions in the hillside areas and, therefore, in the event of a fire followed by a rain event, would not result in an increase in the risk of downslope or downstream flooding or landslides. The impact would be less than significant.	None required	Less than Significant Impact

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
Potential Impact HAZ-5: Would the proposed project generate vectors or have a component that includes agricultural waste that would generate vectors that exceed the qualitative thresholds established by the applicable enforcement agency?	With implementation of the proposed project, the reduction in the amount of surface water diverted to the project site would decrease the potential for standing water that could attract vectors, such as mosquitoes, or provide conditions for breeding. No significant impact due to vectors would occur as a result of the changes in the agricultural use of the project site from irrigated fields and pastures to non-irrigated pastures and native vegetation and the addition of surface water to the existing surface recharge basins at the RRBWSD's facilities in the San Joaquin Valley. The presence of supplemental feed and manure on the project site would have the potential for vectors such as flies and rodents to occur. Consistent with the current grazing management practices used on the project site, the proposed project would be implemented in accordance with the South Fork Mosquito Abatement District requirements that address vector control. Therefore, the continued presence of manure and supplemental feed on the project site would not cause an increase in vectors. With implementation of the proposed project, no significant impacts due to vectors would occur as a result of the transition of irrigated fields and pastures to non-irrigated pastures and native vegetation.	None required	Less than Significant Impact
Potential Cumulative Impacts	The cumulative projects in the Kern River Valley would not change the existing conditions relative to wildfires. When the proposed project is considered together with cumulative projects, there would be no cumulatively considerable impacts to wildfire hazards. The cumulative projects in the Kern River Valley would not change the existing conditions relative to vectors. When the proposed project is considered together with cumulative projects, there would be no cumulatively considerable impacts to vectors.	None required	Less than Significant Impact
Hydrology and Water Quality			
Potential Impact HYDRO-1: Would the proposed project violate any water quality standards or otherwise substantially degrade surface or ground water quality?	The implementation of the proposed project would not violate any water quality standards or otherwise substantially degrade surface water or groundwater quality. The potential impacts to water quality would be less than significant.	None required	Less than Significant Impact
Potential Impact HYDRO-2: Potential Impact HYDRO-2: Would the proposed project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted), or such that the project may impede sustainable groundwater management of the basin?	The proposed project would result in a net increase in groundwater storage in the Kern River Valley Groundwater Basin. The implementation of the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume. Although there would be seasonal localized fluctuations of the groundwater table, there would be no adverse effects to the ability of nearby wells, including those of the 13 community water systems in the South Fork Valley, to pump groundwater. Therefore, the impacts relative to groundwater supplies and recharge in the Kern River Valley Groundwater Basin would be less than significant. The proposed project would not impede the sustainable management of the Kern River Valley Groundwater Basin.	None required	Less than Significant Impact

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
Potential Impact HYDRO-3: Would the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: result in substantial erosion or siltation on-site or off-site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	The proposed project would not alter the existing drainage pattern of the project site, the South Fork of the Kern River, the Lower Kern River, or the creeks and tributaries that flow to these rivers. The proposed project would result in very small amounts of new impervious surfaces at the project site associated with the proposed shallow, low-volume wells. As a result, the proposed project would not cause: substantial erosion or siltation on-site or off-site; substantial increases in surface runoff that would result in flooding on-site or off-site; runoff water that would exceed the capacity of existing or planned stormwater drainage systems; or substantial additional sources of polluted runoff. Therefore, the impacts relative to drainage patterns, erosion, siltation, or surface runoff would be less than significant.	None required	Less than Significant Impact
Potential Impact HYDRO-4: In a flood hazard zone, would the proposed project risk release of pollutants due to project inundation?	The proposed project would result in a small increase in surface flows in the South Fork of the Kern River on the order of less than one percent of the total flow. There would be no significant increase in flooding or increase in the risk of flood hazards that would result in inundation on the project site, along the South Fork of the Kern River, at the Isabella Reservoir, or along the Lower Kern River. The proposed project would not introduce new structure, facilities, or hazardous compounds or operations that would result in the increased risk of the release of pollutants in a flood hazard zone. Therefore, impacts would be less than significant.	None required	Less than Significant Impact
Potential Impact HYDRO-5: Would the proposed project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	The project site is not located downstream of a dam and would not be subject to inundation from a dam or levee failure. Therefore, no impact would occur. The proposed project would not result in a change to the water surface elevation or volume of water stored at Isabella Reservoir or affect the operation of Isabella Reservoir for flood control purposes. The proposed project would not result in an increased risk of the failure of the Isabella Dam or flooding downstream. Additionally, the Isabella Lake Dam Safety Modification Project, currently under construction, addresses potential overtopping and seismic and seepage issues identified with Isabella Reservoir's main and auxiliary dams to reduce the likelihood of dam failure. Therefore, impacts would be less than significant.	None required	Less than Significant Impact
Potential Impact HYDRO-6: Would the proposed project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	The project site is located in the Kern River Valley Groundwater Basin, which is a low-priority basin, and does not require preparation of a groundwater sustainability plan. No impact would occur. The proposed project would not adversely affect surface water quality or groundwater quality or the availability or surface water or groundwater in the South Fork of the Kern River or Kern River Valley Groundwater Basin. Therefore, the proposed project would not conflict with or obstruct implementation of the Tulare Lake Basin Plan (water quality control plan) or the beneficial uses of the South Fork of the Kern River, Isabella Reservoir, or Kern River Valley Groundwater Basin. No impact would occur.	None required	No Impact

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
	The RRBWSD is located in the Kern County Sub-basin (DWR Basin 5-022.14), which is considered a high-priority basin by the DWR. The RRBWSD is a member of the Kern Groundwater Authority, which has prepared a Groundwater Sustainability Plan for the portion of the Kern County Sub-basin that is within the boundaries of its member agencies. The proposed project is included in the Kern Groundwater Authority's Groundwater Sustainability Plan and, therefore, would not conflict with or obstruct, but rather supports, the implementation of a sustainable groundwater management plan. No impact would occur.		
Potential Cumulative Impacts	Neither the proposed project, nor the cumulative projects, would have significant impacts to hydrology or water quality. Therefore, when considered together with the cumulative projects, the proposed project would not result in cumulatively considerable impacts associated with hydrology and water quality.	None required	Less than Significant Impact
Land Use and Planning			
Potential Impact LU-1: Would the proposed project cause a significant environmental impact due to a conflict with a County land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?	The proposed project would be consistent with the applicable County land use plans, policies and regulations with implementation of mitigation measures for potential impacts to biological resources (BIO-1 through BIO-4), cultural resources (CUL-1, CUL-2, CUL-3) and paleontological resources (GEO-1). Impacts would be less than significant with mitigation. With implementation of the proposed project, the surface water diverted from the South Fork of the Kern River in the existing conditions would remain in the South Fork of the Kern River and be delivered to the RRBWSD service area where it would be used for groundwater recharge. The proposed project would be consistent with the RRBWSD's adopted Groundwater Sustainability Plan. Impacts would be less than significant.	Implementation of Mitigation Measures BIO-1, BIO-3, BIO-3, BIO-4, CUL-1, CUL-2, CUL-3, and GEO-1	Less than Significant Impact with Mitigation
Potential Cumulative Impacts	The proposed project would be consistent with the applicable County land use plans, policies and regulations with implementation of mitigation measures for potential impacts to biological resources (BIO-1 through BIO-4), cultural resources (CUL-1, CUL-2, CUL-3) and paleontological resources (GEO-1). When considered together with cumulative projects, the proposed project would not result in cumulatively considerable impacts associated with land use.	Implementation of Mitigation Measures BIO-1, BIO-3, BIO-3, BIO-4, CUL-1, CUL-2, CUL-3 and GEO-1	Less than Significant Impact with Mitigation
Population and Employment			
Potential Impact EMP-1: Would the proposed project have a substantial effect on employment at the project site and surroundings, either directly (for example, through the elimination or addition of a land use or land use characteristic that provides employment) or indirectly (for example, through a change in resources that could eliminate employment opportunities in the agriculture, recreation, or tourist sectors associated with the Kern River Valley, Isabella Reservoir, or the Kern River), that subsequently results in secondary environmental impacts?	Implementation of the proposed project may result in the loss of up to two agriculture-related employees on Onyx Ranch, which would reduce the percentage of the civilian population employed in the "agriculture, forestry, fishing and mining" industry in the Kern River Valley from 4.8 percent to 4.7 percent. Therefore, no significant impact to agriculture-related employment would occur, and the reduction in agriculture-related employment would not result in significant secondary impacts to the physical environment. With implementation of the proposed project, the addition of project-related flows to the South Fork of the Kern River would support existing recreational opportunities and businesses in the Kern River Valley; as such, the persons they employ would not be affected by the proposed project. Therefore, no significant impact to recreation-related employment would occur. Since there would be no impact to recreation-related employment, the proposed project would not cause any significant secondary impacts to the physical environment.	None required	Less than Significant Impact

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
Potential Cumulative Impacts	The cumulative projects would not combine with the proposed project to create a substantial adverse impact to employment in the Kern River Valley. As a result, there would be no cumulative secondary impacts to the physical environment.	None required	Less than Significant Impact
Tribal Cultural Resources			
Potential Impact TCR-1: Would the proposed project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is 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)?	No existing tribal cultural resources are known to exist within the project site. Should there be an inadvertent discovery of a tribal cultural resource, the RRBWSD must follow the existing regulatory requirements of AB 52. Therefore, with implementation of the proposed project, potential impacts to tribal cultural resources would be less than significant.	None required	Less than Significant Impact
Potential Impact TCR-2: Would the proposed project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is a 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, and considering the significance of the resource to a California Native American Tribe?	No existing tribal cultural resources are known to exist within the project site. Should there be an inadvertent discovery of a tribal cultural resource, the RRBWSD must follow the existing regulatory requirements of AB 52. Therefore, with implementation of the proposed project, potential impacts to tribal cultural resources would be less than significant.	None required	Less than Significant Impact
Potential Cumulative Impacts	No existing tribal cultural resources are known to exist within the project site and, with implementation of the proposed project, potential impacts to tribal cultural resources would be less than significant. Therefore, to the extent impacts on tribal cultural resources from cumulative projects may occur, contribution from the proposed project would not be cumulatively considerable.	None required	Less than Significant Impact
Utilities, Service Systems, and Energy			
Potential Impact UTIL-1: Would the proposed project have a substantial effect on water supplies available to serve the adjacent land uses and communities, and associated local water suppliers from existing entitlements and resources?	Implementation of the proposed project would result in no change in surface water supplies available to serve adjacent land uses, communities, and local water suppliers in the South Fork Valley. No impact on surface water supplies would occur in the South Fork Valley. Implementation of the proposed project is predicted to result in a net increase of groundwater in storage across the Hydrological Study Area, as compared to the existing conditions. The existing decrease in groundwater storage is estimated to be -39,706 AF and, the groundwater storage with the proposed project, is estimated to be -21,482 AF. Therefore, the proposed project would result in a beneficial effect by reducing loss of groundwater storage by approximately 18,224 AF. Therefore, relative to groundwater storage, there would be no impact on water supplies available to serve adjacent land uses, communities, and local water suppliers in the South Fork Valley. With implementation of the proposed project, the maximum predicted offsite project-related seasonal fluctuation in groundwater levels would be negligible relative to normal seasonal fluctuations in the Hydrological Study Area. It is not expected that existing groundwater wells adjacent to the project site would be prevented from accessing groundwater and likewise that pump performance (flow rate and pressure) fluctuations would be negligible and not noticeable to water users. Therefore, there would be a less than significant impact on groundwater supplies available to serve adjacent land uses, communities, and local water suppliers in the South Fork Valley.	None required	Less than Significant Impact

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE ONYX RANCH SOUTH FORK VALLEY WATER PROJECT

Environmental Topic	Impact Summary	Mitigation Measures	Significance after Mitigation
	With implementation of the proposed project, based on the 13-year model period of 2005 to 2017, it is estimated that an average of 6,014 net AFY of new water would flow through the Isabella Dam and into the Lower Kern River. This represents a 17 percent "no injury factor" that accounts for model-estimated losses that are anticipated to occur between Onyx Ranch and Isabella Reservoir as a result of the proposed project. The RRBWSD would coordinate with the Kern River Interests to address scheduling releases and compute any losses between the Isabella Dam and the existing RRBWSD diversion points at their spreading basins. There would be no impact on water supplies available to serve the existing water rights and entitlements of the Kern River Interests.		
Potential Impact ENERGY-1: Would the proposed project result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	Energy consumption would not increase during operation of the proposed project. Energy consumption during construction of the 12 shallow, low-volume wells powered by solar facilities would be minimal (2,768 gallons of diesel fuel and 210 gallons of gasoline). Therefore, the implementation of the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of energy. The impact would be less than significant. With implementation of the proposed project, the change in energy consumption by existing groundwater wells adjacent to the project site would also be minor and within the normal seasonal fluctuations. Therefore, energy consumption impacts would be less than significant.	None required	Less than Significant Impact
Potential Impact ENERGY-2: Would the proposed project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	The proposed project would not conflict with the implementation of CALGreen or Title 24. No impact would occur. The proposed project would support the goals and policies of the Kern River Valley Specific Plan related to use of solar energy and energy conservation. No impact would occur. The proposed project would not conflict with or obstruct implementation of a State or local plan for renewable energy or energy efficiency. No impact would occur.	None required	No Impact
Potential Cumulative Impacts	None of the cumulative projects would have adverse effects to surface water or groundwater supplies within the South Fork Valley or the Hydrological Study Area defined for the proposed project. Therefore, when considered together with the cumulative projects, the proposed project would not result in cumulatively considerable impacts related to water supply. None of the cumulative projects would have adverse effects to energy in the Kern River Valley. Therefore, when considered together with the cumulative projects, the proposed project would not result in cumulatively considerable impacts related to energy.	None required	Less than Significant Impact

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CHAPTER 1
Introduction

1.1 Purpose of this EIR

The Rosedale-Rio Bravo Water Storage District (RRBWSD) is proposing to implement the Onyx Ranch South Fork Valley Water Project (proposed project). As the lead agency, the RRBWSD has prepared this Draft Environmental Impact Report (Draft EIR) pursuant to the California Environmental Quality Act (CEQA) of 1970 (as amended), codified at California Public Resources Code Sections 21000 et seq., and the State CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3. The purpose of this Draft EIR is to provide the public and responsible and trustee agencies with information about the potential effects on the environment associated with the proposed project.

The RRBWSD owns several parcels of land and the associated water rights along the South Fork of the Kern River in the Kern River Valley (see Figure ES-1 of the Executive Summary of this Draft EIR). The parcels are located in and around the communities of Weldon and Onyx, in an unincorporated area of northeastern Kern County. Collectively, the parcels comprise the project site and cover approximately 4,109 acres.

The project site is located approximately 5 miles from the eastern boundary of the Isabella Reservoir along the South Fork of the Kern River, approximately 50 miles east of the RRBWSD service area in the San Joaquin Valley. The majority of the project site, consisting of approximately 3,418 acres, is located within lands collectively known as the Onyx Ranch. The remaining approximately 691 acres are parcels within the Smith Ranch, of which the RRBWSD owns one-third interest. The terms “Onyx Ranch” and “Smith Ranch” used herein generally refer to the portions of larger ranch areas with the same name within the project site.

The RRBWSD proposes to change the points of diversion and place of use for the water rights associated with the parcels on the project site so that the water can be delivered in the RRBWSD service area on the San Joaquin Valley floor and used for irrigation and groundwater recharge. The RRBWSD proposes to reduce the diversion and use of surface water on the project site by converting irrigated fields to non-irrigated pasture or native vegetation. The proposed project would not replace reduced surface water diversions with groundwater pumped on the project site. With the proposed project, surface water that is diverted under the existing condition would remain in the South Fork of the Kern River and flow downstream. This would result in a net increase in the South Fork flows that would run downstream to the Isabella Reservoir. The increased flows resulting from the proposed project would be released through the Isabella Dam and flow downstream in the Lower Kern River until the water is diverted at the RRBWSD

diversion points. From there, the RRBWSD would deliver the water to recharge basins and channels within and near its service area west of the City of Bakersfield (see Figure ES-1). The RRBWSD existing groundwater banking and conjunctive-use projects, operations, and CEQA documentation are detailed in the RRBWSD's annual Operations Report which is found online at: https://www.rrbwsd.com/newsletter-notices.

The proposed project would increase water supplies to the RRBWSD's service area to mitigate the shortages in the RRBWSD's contracted SWP water supply from the State of California, which has been steadily reduced due to environmental constraints impacting exports in the Sacramento/San Joaquin Delta. In addition, the proposed project would assist the RRBWSD in meeting its sustainability goals under the Sustainable Groundwater Management Act (SGMA). The proposed project would result in the use of the surface water moved downstream in the RRBWSD's service area as a beneficial use in Kern County.

As described in Section 15121(a) of the CEQA Guidelines, this Draft EIR is intended to serve as an informational document for the public and pertinent public agency decision makers. Accordingly, this Draft EIR has been prepared to identify the significant environmental effects of the proposed project, identify mitigation measures to minimize significant environmental effects, and consider reasonable alternatives to the proposed project. The environmental impact analyses in this Draft EIR are based on a variety of sources, including publicly-available documents, agency and public input, technical studies, and field surveys.

1.2 Project Background

Overview of Rosedale-Rio Bravo Water Storage District

The current RRBWSD service area is located in the westernmost portion of the City of Bakersfield and unincorporated Kern County (see Figure ES-1). The RRBWSD was formed in 1959 for the purpose of obtaining surface water supplies and constructing and operating a groundwater recharge project to offset declining groundwater levels in the RRBWSD service area. Prior to the construction of the Isabella Dam in 1953, the Kern River would overflow into the Goose Lake Slough in the Bakersfield area on an average of once every 3 years. These overflows would result in significant increases in groundwater storage due to the percolation capabilities of the soils along the channel. With the construction of Isabella Dam in the Kern River Valley, these overflows ceased and the groundwater levels were dropping at a rate of approximately 9 feet per year (AECOM, 2013).

Currently, the RRBWSD service area contains approximately 44,000 acres of land, of which approximately 27,500 acres are utilized for irrigated agriculture and approximately 7,500 acres are developed for residential, commercial, and industrial uses. The urban development is primarily located in the eastern end of the RRBWSD's service area and is anticipated to increase as the City of Bakersfield develops to the west (RRBWSD, 2019).

The RRBWSD's Groundwater Recharge Project was developed to take advantage of the Goose Lake Slough that runs east to west through the RRBWSD service area (see Figure 1-1). Additionally, the Groundwater Recharge Project provided for the construction of groundwater recharge basins and channels that currently cover approximately 1,300 acres, generally following the channel's historic alignment. Subsequent to the completion of the Groundwater Recharge Project, additional properties and facilities have been added. Further, as a part of agreements with the City of Bakersfield, Kern Water Bank, Kern County Water Agency (KCWA), and Irvine Ranch Water District, the RRBWSD has the right to use groundwater recharge facilities in groundwater banking projects located to the south of their service area (AECOM, 2013). These facilities are generally located in the area to the south of Stockdale Highway, to the west of Calloway Drive, north of Panama Lane, and east of Mayer Avenue.

The RRBWSD entered into long-term contracts for delivery of surface water supplies from the Kern River and the SWP and short-term contracts for water from the Friant Kern Canal (which is part of the U.S. Bureau of Reclamation Central Valley Project) to their service area (AECOM, 2013). The proposed project would increase water supplies to the RRBWSD service area to mitigate the current shortages in the RRBWSD's contracted SWP water supply, which has been steadily reduced due to environmental constraints impacting exports in the Sacramento/San Joaquin Delta.

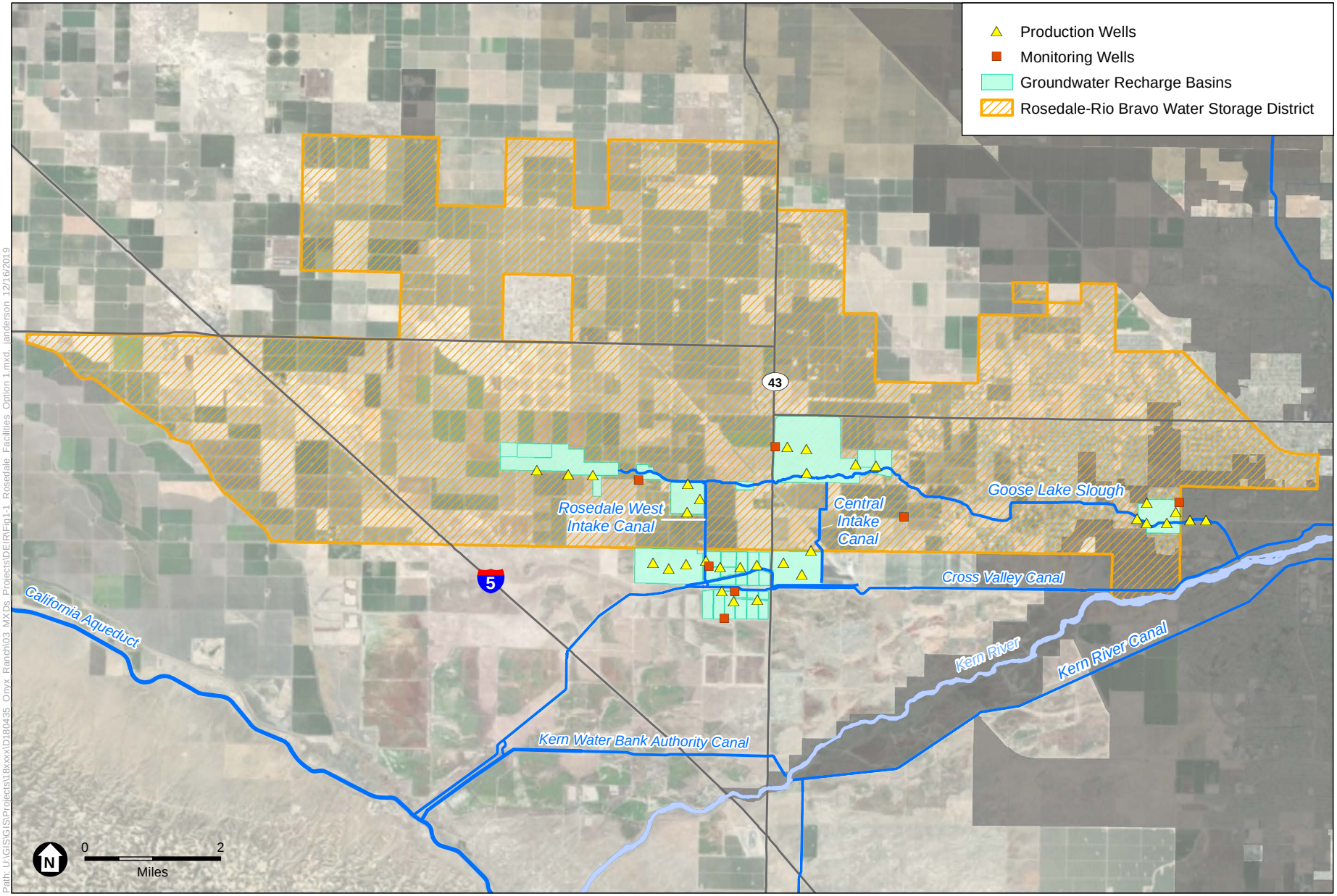
Planning Process for the Proposed Project

Beginning in 2008, the RRBWSD began investigating the potential for a project, located in the South Fork Valley, to provide water supplies to the RRBWSD service area. Various landowners in the area had previously attempted to market water supplies to local water agencies. After a 1-year-long due diligence process in 2013, the RRBWSD acquired approximately 3,732 acres of the Onyx Ranch portion of the project site from ReNu, who had purchased this property in 2009 as a part of an approximately 67,000-acre acquisition from the Rudnick Trust. To comply with CEQA, the purchase of the property by the RRBWSD was addressed in a Notice of Exemption filed by the RRBWSD with the Kern County Clerk on February 15, 2013.

In late 2015, the RRBWSD acquired one-third interest of the Smith Ranch (approximately 691 acres) from James Neukirchner. To comply with CEQA, the purchase of the property by the RRBWSD was addressed in a Notice of Exemption filed by the RRBWSD with the Kern County Clerk on November 11, 2015.

Purpose of the Proposed Project

As discussed above, the RRBWSD acquired the Onyx Ranch and one-third interest in Smith Ranch and the associated pre-1914 appropriative water rights on the South Fork of the Kern River. The purpose of the proposed project is to enable the RRBWSD to change the points of diversion and place of use of the surface water on the Onyx and Smith Ranches in order to move the water downstream for diversion and use in the RRBWSD's service area.



SOURCE: ESRI; Kern County

Onyx Ranch South Fork Valley Water Project

Figure 1-1

Rosedale-Rio Bravo Water Storage District Service Area and Facilities

ESA

The proposed project would increase water supplies to the RRBWSD service area to mitigate the shortages in the RRBWSD's contracted SWP water supply from the State of California, which has been steadily reduced due to environmental constraints impacting exports in the Sacramento/San Joaquin Delta. In addition, the proposed project would assist the RRBWSD in meeting its sustainability goals under the Sustainable Groundwater Management Act (SGMA). The proposed project would result in the use of the surface water moved downstream in the RRBWSD's service area as a beneficial use in Kern County.

The proposed project's change in point of diversion method is consistent with how the other "Kern River Interests" (including the Buena Vista Water Storage District, North Kern Water District, Kern Delta Water District, City of Bakersfield, Henry Miller Water District, and Kern County Water Agency) manage their respective Kern River pre-1914 water rights. This includes their use of changes in points of diversion and place of use in order for those agencies to manage and maximize their water supply benefits in Kern County. The analysis of the proposed project uses a method that conservatively accounts for the quantity of pre-1914 appropriative rights and the available water supply that can be moved downstream as a result of the proposed project, without injury to other water right holders. This conservative method is not intended to quantify the full extent of the pre-1914 appropriative rights associated with the Onyx Ranch or Smith Ranch.

1.3 CEQA Environmental Review Process

1.3.1 CEQA Process Overview

The basic purposes of CEQA are to: (1) inform decision makers and the public about the potential, significant adverse environmental effects of proposed governmental decisions and activities; (2) identify the ways those environmental effects can be avoided or significantly reduced; (3) prevent significant, avoidable and adverse environmental effects by requiring changes in projects through the use of alternatives or mitigation measures when feasible; and (4) disclose to the public the reasons why an implementing agency may approve a project even if significant unavoidable environmental effects are involved.

An EIR uses a multidisciplinary approach, applying social and natural sciences to make a qualitative and quantitative analysis of all the foreseeable environmental impacts that a proposed project would exert on the project site and surrounding area. As stated in CEQA Guidelines Section 15151:

> *An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible.*

This Draft EIR has been prepared to comply with CEQA and the CEQA Guidelines and is to be used by local regulators and the public in their review of the potential significant adverse environmental impacts of the proposed project and the alternatives to the proposed project and

mitigation measures that would minimize or avoid those potential environmental effects. The RRBWSD will consider the information presented in this Draft EIR, along with other factors, prior to considering and making any final decisions regarding the proposed project. While CEQA Guidelines Section 15021 requires that major consideration be given to avoiding environmental damage, the lead agency and other responsible public agencies must balance adverse environmental effects against other public objectives, taking into account economic, legal, social, and technological factors.

1.3.2 Notice of Preparation and Public Scoping

Pursuant to Section 15082 of CEQA Guidelines, the lead agency is required to send a Notice of Preparation (NOP) stating that an EIR will be prepared to the State Office of Planning and Research (OPR), responsible and trustee agencies, and the local County Clerk. The NOP must provide sufficient information in order for responsible and trustee agencies to make a meaningful response. At a minimum, the NOP must include a description of the project, location of the project, and probable environmental effects of the project (CEQA Guidelines Section 15082(a)(1)). Within 30 days after receiving the NOP, responsible and trustee agencies and OPR shall provide the lead agency with specific detail about the scope and content of the environmental information related to that agency's area of statutory responsibility that must be included in this Draft EIR (CEQA Guidelines Section 15082(b)).

On February 22, 2018, a NOP and Initial Study for the proposed project was posted with the California OPR and the Office of the Kern County Clerk and distributed via certified mail to potential responsible and trustee agencies and interested organizations and individuals for a 30-day public review period that ended March 23, 2018. A Notice of Availability (NOA) of the NOP and Initial Study was published in *The Bakersfield Californian* and *The Kern Valley Sun*, including the 30-day public review period and the information on the Scoping Meetings. The NOA was also mailed to other organizations and individuals in the Kern River Valley. The NOP and Initial Study were made available on the RRBWSD's website (https://www.onyxranch.org). In addition, copies of the NOP and Initial Study were made available for public review at the following Kern County libraries: Wofford Heights Branch, 6400 B Wofford Boulevard, Wofford Heights, CA 93285; Kern River Valley Branch, 7054 Lake Isabella Boulevard, Lake Isabella, CA 93240; and Beale Memorial Library, 701 Truxtun Avenue, Bakersfield, CA 93301.

The RRBWSD held two public Scoping Meetings during the 30-day NOP public review period for the proposed project. The meetings were both held on March 6, 2018. The first meeting was conducted at 10:00 A.M. at the RRBWSD office, 849 Allen Road, Bakersfield, CA 93314, and the second meeting was held at 6:00 P.M. at the South Fork Elementary School, 6401 Fay Ranch Road, Weldon, CA 93283. The NOA, NOP, Initial Study, proof of publication in the newspapers, and the Scoping Meeting sign-in sheets are provided in Appendix A Public Participation Process to this Draft EIR.

The RRBWSD received 37 written comment letters and emails in response to the NOP and Initial Study. The comments were received from public agencies, interested organizations, and interested individuals. Additionally, written comments were submitted by members of the public

at the Scoping Meetings. The written comments received are provided in Appendix A Public Participation Process to this Draft EIR.

1.3.3 Preparation of Draft EIR

This Draft EIR has been prepared pursuant to the requirements of CEQA Guidelines Section 15126. The environmental issues addressed in this Draft EIR were established through review of environmental documentation developed for the proposed project and comments from agencies, interested organizations, and interested individuals on the NOP and Initial Study. This Draft EIR provides an analysis of reasonably foreseeable environmental impacts associated with the implementation of the proposed project. The environmental baseline for determining the potential impacts reflects the existing conditions at the date of publication of the NOP for the proposed project (February 22, 2018), unless otherwise indicated (CEQA Guidelines Section 15125(a)).

In accordance with the CEQA Guidelines Section 15126, this Draft EIR describes the proposed project and the baseline environmental setting, identifies short-term, long-term, and cumulative environmental impacts associated with project implementation, recommends mitigation measures for significant environmental impacts identified, analyzes potential growth-inducing impacts, and provides an analysis of alternatives to the proposed project. Significance criteria have been developed for each environmental resource analyzed in this Draft EIR based on the CEQA Guidelines Appendix G and comments provided on the NOP and Initial Study during the public review period. More information on the format and methodology for the environmental analysis is included in Chapter 3 Environmental Setting, Impacts, and Mitigation Measures of this Draft EIR.

Known Areas of Controversy and Issues of Concern

Pursuant to Section 15123(b)(2) of the CEQA Guidelines, a lead agency is required to include areas of controversies raised by agencies and the public during the public scoping process. Based on comments made during the 30-day public review period in response to information published in the NOP and Initial Study, the following areas of controversy and issues of concern have been identified for the proposed project:

- Potential impacts related to air quality caused by increased dust as a result of less irrigation on the project site.
- Potential impacts to agricultural, biological, and scenic resources as a result of less irrigation on the project site.
- Potential for the increase in fire hazards with less irrigation on the project site.
- Potential impacts to cultural resources, including tribal cultural resources.
- Potential impacts to local groundwater supplies with the reduction in the surface water diverted to the project site.
- Potential impacts to flooding of roadways that cross the South Fork of the Kern River with the reduction in surface water diverted to the project site.
- Potential impacts to the local economy, eco-tourism, and agri-tourism.

- Potential impacts to water storage in the Isabella Reservoir due to the reduction in surface water diverted to the project site.
- Potential impacts to flow and injury to water rights holders in the Lower Kern River, downstream of Isabella Reservoir.

1.3.4 Public Review of the Draft EIR

In accordance with CEQA Guidelines Section 15105, this Draft EIR has been submitted to the OPR State Clearinghouse for review by potential responsible and trustee agencies during a 60-day public review period. In addition, the NOA for this Draft EIR was posted at the Office of the Kern County Clerk and provided in two newspapers of general circulation in the project area, *The Bakersfield Californian* and *The Kern Valley Sun*. Copies of the NOA and a USB flash drive with the Draft EIR were provided to interested agencies, organizations, and individuals that participated in the scoping process for the Draft EIR and/or requested notification of the availability of this Draft EIR for public review and comment during the 60-day review period. Additionally, this Draft EIR has been made available on the RRBWSD website (https://www.rrbwsd.com) and the website for the proposed project (https://www.onyxranch.org). As permitted, printed copies of this Draft EIR will be available for public review at the following public libraries and the RRBWSD office when the restrictions due to facility closures and the need for social distancing required in response to COVID-19 are lifted by the appropriate governmental agencies: Wofford Heights Branch, 6400 B Wofford Boulevard, Wofford Heights, CA 93285; Kern River Valley Branch, 7054 Lake Isabella Boulevard, Lake Isabella, CA 93240; and Beale Memorial Library, 701 Truxtun Avenue, Bakersfield, CA 93301.

Written comments on this Draft EIR must be received by the RRBWSD, at the address provided below, no later than July 27, 2020, at 5:00 P.M. The written comments received on this Draft EIR will be responded to and included in the Final EIR.

Dan Bartel, Assistant General Manager/District Engineer
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FAX: (661) 589-1867

During the 60-day public review period, the RRBWSD will post a public information presentation on: the proposed project; the contents and conclusions of this Draft EIR; and the key steps for the remainder of the public review process including the hearing on the proposed project before the RRBWSD Board of Directors. It should be noted that the CEQA Guidelines require a 45-day public review period for a Draft EIR; however, the RRBWSD has extended that to a 60-day public review period for the submittal of public comments on this Draft EIR to allow for more time when communities are dealing with the effects of COVID-19. Additionally, although not a requirement of CEQA, a USB flash drive that contains the Draft EIR has been mailed with the NOA to agencies and the public to provide easier access to the environmental documentation.

1.3.5 Final EIR Publication and Certification

The RRBWSD will prepare written responses to the written comments received during the 60-day public review period. The Final EIR will be comprised of this Draft EIR, responses to comments received on this Draft EIR, and any changes or corrections to this Draft EIR that are made as part of the responses to comments. As the lead agency, the RRBWSD will make the Final EIR available for review on their website prior to considering any final decision regarding approval of the proposed project (CEQA Guidelines Section 15089(b)). Additionally, the Final EIR will be provided on a USB flash drive to commenting agencies at least 10 days prior to the hearing at which the RRBWSD Board of Directors shall consider certification of the Final EIR (CEQA Guidelines Section 15088(b)).

Prior to considering the proposed project for approval, the RRBWSD will review and consider the information presented in the Final EIR and consider certification that the Final EIR has been adequately prepared in accordance with CEQA. Once the Final EIR is certified, the RRBWSD may proceed to consider any final decisions regarding the proposed project (CEQA Guidelines Section 15090, Section 15096(f)). Prior to considering approval of the proposed project, the RRBWSD must make written Findings in accordance with Section 15091 of the CEQA Guidelines for each identified significant environmental effect. In addition, the RRBWSD must adopt a Statement of Overriding Considerations (SOC) concerning each significant environmental effect identified in the Final EIR (if any) that cannot be fully mitigated to a less than significant level. If one is needed, then the SOC will be included in the record of the consideration of the proposed project's approval and mentioned in the Notice of Determination (NOD) following CEQA Guidelines Section 15093(c). Pursuant to Section 15094 of the CEQA Guidelines, the RRBWSD will file an NOD with the State Clearinghouse and County Clerk within five working days if the proposed project is approved and/or the Final EIR is certified.

1.3.6 Mitigation Monitoring and Reporting Program

CEQA requires lead agencies to "adopt a reporting and mitigation monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment" (CEQA Guidelines Section 15097.) The mitigation measures, if any, adopted as part of the Final EIR will be included in a Mitigation Monitoring and Reporting Program (MMRP) and implemented by the RRBWSD.

1.4 Organization of this Draft EIR

This Draft EIR is organized into the following chapters and appendices:

- **Executive Summary:** This chapter summarizes the contents of this Draft EIR This includes a summary of: the proposed project, project purpose, and objectives; the CEQA environmental review process; the environmental impacts of the proposed project, recommended mitigation measures, and level of significance after mitigation; the alternatives to the proposed project; areas of controversy and issues of concern; and the organization of the Draft EIR.
- **Chapter 1 Introduction:** This chapter provides: the purpose of this Draft EIR; an overview of the proposed project; project background and purpose; the CEQA environmental review process for the proposed project; and the organization of this Draft EIR.

- **Chapter 2 Project Description:** This chapter provides an overview of the proposed project, describes the project purpose and objectives, provides a detailed discussion of the characteristics of the proposed project as required by CEQA Guidelines Section 15124, and defines the potential discretionary actions and approvals for implementation of the proposed project.
- **Chapter 3 Environmental Setting, Impacts and Mitigation Measures:** This chapter introduces the format of the environmental impact analysis, describes the cumulative projects, and includes individual sections for each environmental topic identified during the scoping process and included in this Draft EIR. For the analysis of each environmental topic, this chapter identifies: the existing environmental setting; the applicable regulatory requirements; the thresholds of significance and criteria used to define the significance of the potential impacts and the analysis methodology; the potential direct, indirect, and cumulative impacts of the proposed project for each environmental topic; and recommended mitigation measures to reduce or avoid to the extent feasible the significant impacts of the proposed project. The environmental topics identified during the scoping process and analyzed in this Draft EIR include: Aesthetics; Agriculture; Air Quality; Biological Resources; Cultural Resources; Geology and Soils; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Hydrology and Water Quality; Land Use and Planning; Population and Employment; Tribal Cultural Resources; and Utilities, Service Systems, and Energy.
- **Chapter 4 Growth Inducement:** This chapter describes the potential for the proposed project to induce growth.
- **Chapter 5 Alternatives Analysis:** This chapter presents an overview of the process used to identify and develop the potential alternatives to the proposed project, an analysis of the alternatives to the proposed project that were identified for evaluation in this Draft EIR, describes the potential impacts of feasible alternatives relative to the significant impacts of the proposed project; and discusses environmental superior alternatives to the proposed project.
- **Chapter 6 Report Preparers:** This chapter identifies those involved in preparing this Draft EIR, including persons and organizations consulted.
- **Appendices:** The Appendices contain important information including public participation documentation and technical reports that address the project site and proposed project that were used to support the analyses and conclusions made in this Draft EIR.

1.5 References

AECOM, 2013. Final Draft Rosedale-Rio Bravo Water Storage District Groundwater Management Plan. Prepared for Rosedale-Rio Bravo Water Storage District, February 2013.

RRBWSD, 2019. About Us. Rosedale-Rio Bravo Water Storage District. Accessible at: https://www.rrbwsd.com/about-us. Accessed October 23, 2019.

CHAPTER 2
Project Description

2.1 Introduction

The Onyx Ranch South Fork Valley Water Project (proposed project) involves changing the points of diversion and place of use for certain South Fork of the Kern River water rights from lands in the South Fork Valley to lands on the San Joaquin Valley floor in Kern County (County).

The Rosedale-Rio Bravo Water Storage District (RRBWSD), the project proponent, owns several parcels of land and the associated water rights along the South Fork of the Kern River in the Kern River Valley (see Figure 2-1). The parcels are located in and around the communities of Weldon and Onyx, in an unincorporated area of northeastern Kern County. Collectively, the parcels comprise the project site and cover approximately 4,109 acres.

The RRBWSD proposes to change the points of diversion and place of use for the water rights associated with these parcels so that the water can be delivered in the RRBWSD service area on the San Joaquin Valley floor and used for irrigation and groundwater recharge. The RRBWSD proposes to reduce the diversion and use of surface water on the project site by converting irrigated fields to non-irrigated pasture or native vegetation. The proposed project would not replace reduced surface water diversions with groundwater pumped on the project site. With the proposed project, surface water that is diverted under the existing condition would remain in the South Fork of the Kern River and flow downstream. This would result in a net increase in the South Fork flows that would run downstream to the Isabella Reservoir. The increased flows resulting from the proposed project would be released through the Isabella Dam and flow downstream in the Lower Kern River until the water is diverted at the RRBWSD diversion points. From there, the RRBWSD would deliver the water to recharge basins and channels within and near its service area west of the City of Bakersfield (see Figure 2-1). The RRBWSD existing groundwater banking and conjunctive-use projects, operations, and CEQA documentation are detailed in the RRBWSD's annual Operations Report which is found online at: https://www.rrbwsd.com/newsletter-notices.

The proposed project would increase water supplies to the RRBWSD's service area to mitigate the shortages in RRBWSD's contracted State Water Project (SWP) water supply from the State of California, which has been steadily reduced due to environmental constraints impacting exports in the Sacramento/San Joaquin Delta (Delta). In addition, the proposed project would assist RRBWSD in meeting its sustainability goals under the Sustainable Groundwater Management Act (SGMA).

The following provides a description of the project location, purpose of the proposed project, project objectives, a brief project setting, the project site water rights and proposed diversion, the description of the proposed project, project implementation, the project schedule, and the potential discretionary actions, approvals, and permits that would be needed for implementation of the proposed project.

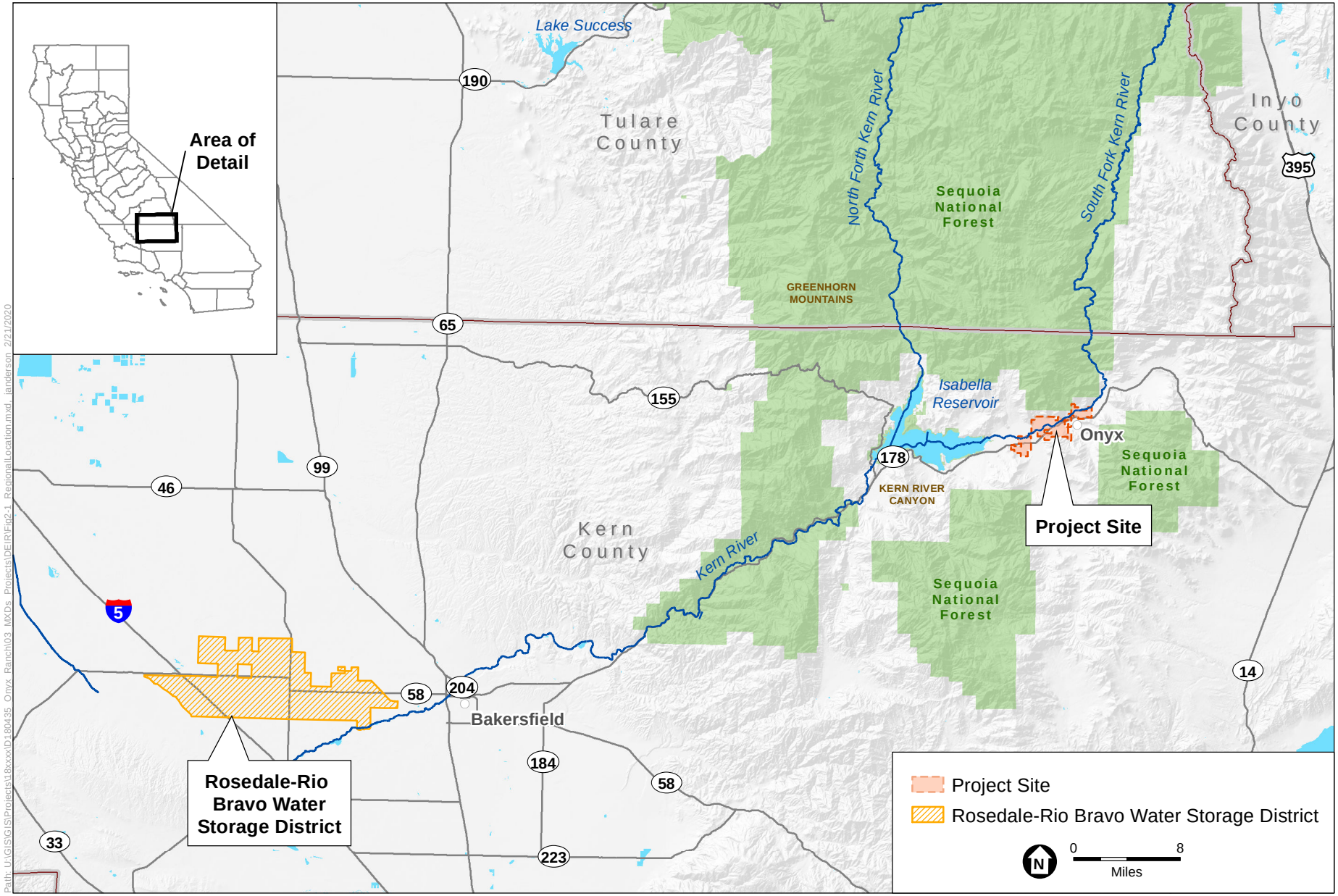
2.2 Project Location

The project site is shown in its regional setting in Figure 2-1. The project site is located approximately 5 miles from the eastern boundary of the Isabella Reservoir along the South Fork of the Kern River, approximately 50 miles east of the RRBWSD service area in the San Joaquin Valley. The majority of the project site, consisting of approximately 3,418 acres, is located within lands collectively known as the Onyx Ranch. The remaining approximately 691 acres are parcels within the Smith Ranch, of which the RRBWSD owns one-third interest. The terms "Onyx Ranch" and "Smith Ranch" used herein generally refer to the portions of larger ranch areas with the same name within the project site (see Figure 2-1).

The project site is shown in its local setting in Figure 2-2. As indicated in Figure 2-2, the majority of the project site is located within the Kern River Valley Specific Plan (KRVSP) boundaries east of the Isabella Dam and Isabella Reservoir. The remainder of the project site is to the north of the KRVSP. The project site is situated adjacent to and on either side of the South Fork of the Kern River. Between the project site and the Isabella Reservoir are two natural resource conservancy areas. At the eastern end of the Isabella Reservoir is the U.S. Forest Service South Fork Wildlife Area. The Audubon California's Kern River Preserve is located between the Wildlife Area and the project site. The Canebrake Ecological Reserve is west, south, and east of the project site, on parcels between Onyx Ranch and Smith Ranch, and on a parcel surrounded by the project site. The locations of these areas are shown in Figure 2-2.

Regional access to the project vicinity is provided via State Route (SR) 178 and SR 155. Local access is provided to the project site by SR 178, Fay Ranch Road, Kelso Valley Road, Doyle Ranch Road, and Scodie Lane and as well as by dirt ranch roads on the project site. Figure 2-3 provides an aerial photograph of the project site and vicinity, including the roadways that provide access to the project site.

The project site is comprised of 29 parcels with the following Kern County Assessor's Parcel Numbers: 055-130-12; 055-130-14; 321-020-02; 321-020-05; 321-020-43; 321-030-02; 321-030-05; 321-030-11; 321-030-12; 321-030-13; 321-030-15; 321-030-16; 321-030-17; 321-030-21; 321-040-03; 321-040-04; 321-040-10; 321-061-01; 321-061-05; 321-181-01; 426-032-10; 426-032-11; 426-032-12; 426-032-13; 426-032-14; 426-032-15; 426-034-10; 426-035-02; and 426-080-04. The project site is located in: Sections 13, 14, 23, and 24, Township 26 S., Range 34 E. and Sections 2, 3, 5, 6, 7, 8, 9, 16, and 17, Township 26 S., Range 35 E. and Sections 34 and 35 Township 25 S., Range 35 E., Mount Diablo Meridian and Base.



SOURCE: ESRI; National Hydrography Dataset; DWR; Northcutt and Associates, 2015

Onyx Ranch South Fork Valley Water Project

Figure 2-1

Regional Project Location

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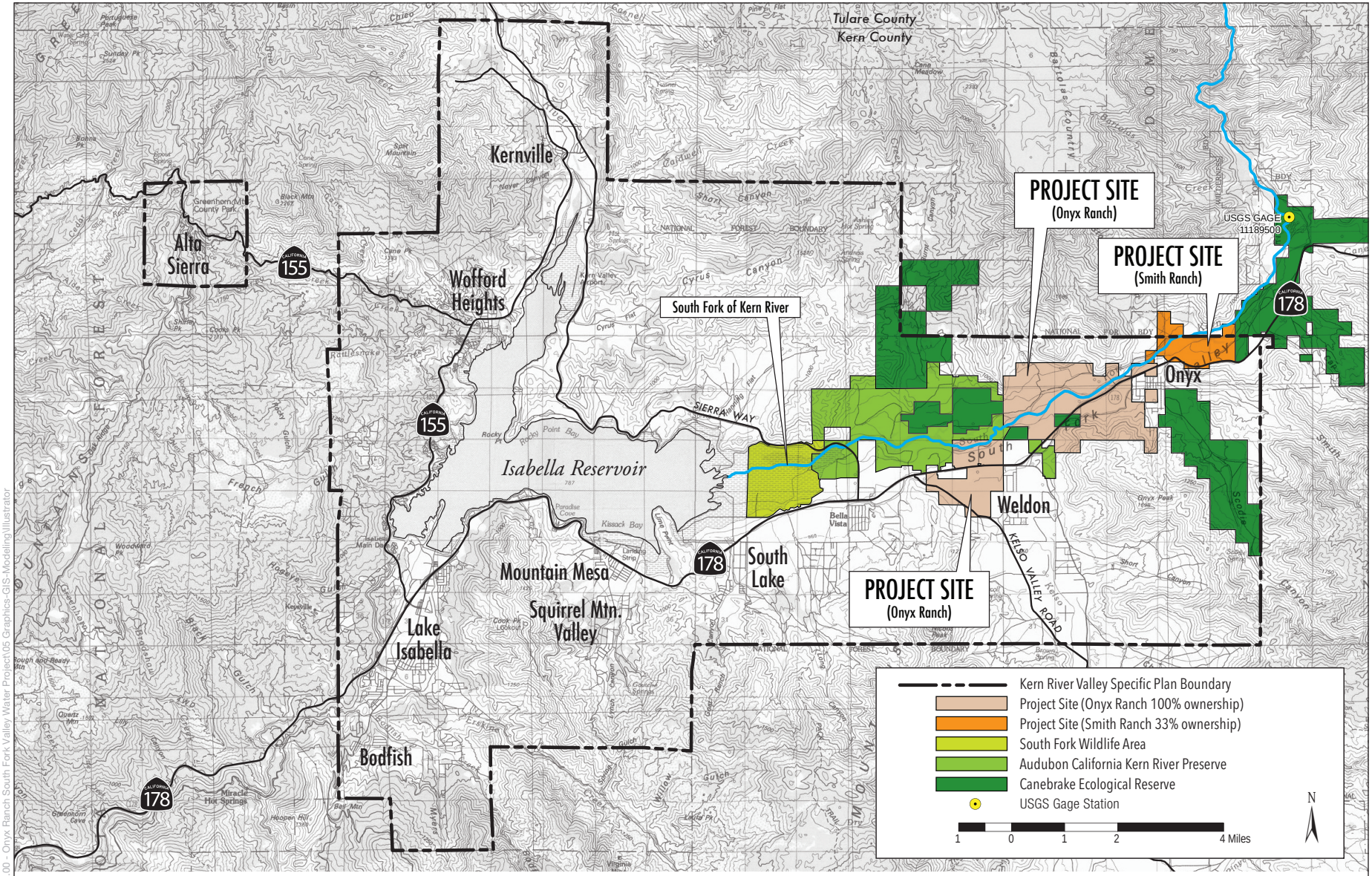


USGS 7.5 Map Series, Warner Springs, CA, 1988

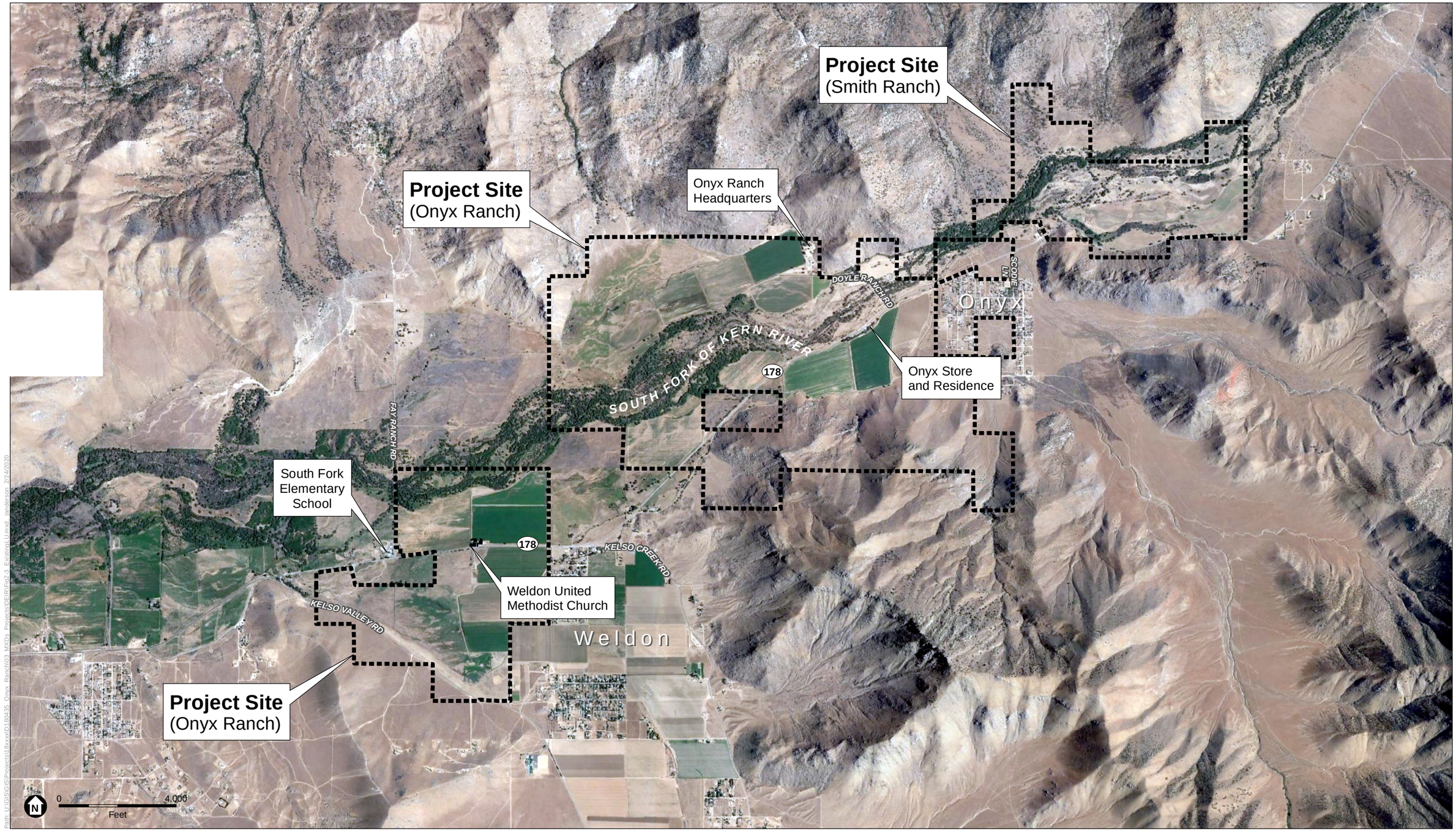
D180435.00 - Onyx Ranch South Fork Valley Water Project\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Onyx Ranch South Fork Valley Water Project, 2018

Onyx Ranch South Fork Valley Water Project

Figure 2-2
Project Site – Local Setting

ESA



SOURCE: Google Earth, 2018; Rosedale-Rio Bravo Water Storage District

Onyx Ranch South Fork Valley Water Project

Figure 2-3
Existing Land Uses at Project Site

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2.3 Purpose and Background of the Proposed Project

The RRBWSD has acquired the Onyx Ranch and one-third interest in Smith Ranch and the associated pre-1914 appropriative water rights on the South Fork of the Kern River. The purpose of the proposed project is to enable the RRBWSD to change the points of diversion and place of use of the surface water on the Onyx and Smith Ranches in order to move the water downstream for diversion and use in the RRBWSD's service area.

The proposed project would increase water supplies to the RRBWSD's service area to mitigate the shortages in the RRBWSD's contracted SWP water supply from the State of California, which has been steadily reduced due to environmental constraints impacting exports in the Sacramento/San Joaquin Delta. In addition, the proposed project would assist the RRBWSD in meeting its sustainability goals under the SGMA. The proposed project would result in the use of the surface water moved downstream in the RRBWSD's service area as a beneficial use in Kern County.

The proposed project's change in point of diversion method is consistent with how the other "Kern River Interests" (including the Buena Vista Water Storage District, North Kern Water District, Kern Delta Water District, City of Bakersfield, Henry Miller Water District, and Kern County Water Agency) manage their respective Kern River pre-1914 water rights. This includes their use of changes in points of diversion and place of use in order for those agencies to manage and maximize their water supply benefits in Kern County.

The analysis of the proposed project uses a method that conservatively accounts for the quantity of pre-1914 appropriative rights and the available water supply that can be moved downstream as a result of the proposed project, without injury to other water right holders. This conservative method is not intended to quantify the full extent of the pre-1914 appropriative rights associated with the Onyx Ranch or Smith Ranch. Refer to Section 2.6 below for a detailed discussion.

More information on the background of the proposed project can be found in Chapter 1, Introduction and Project Background.

2.4 Project Objectives

The mission of the RRBWSD is to "…acquire surface water supplies for the preservation of water levels and quality throughout the district to ensure an affordable and sustainable water supply for all landowners." In their *Strategic Plan 2014-2024*, the RRBWSD has defined strategic goals to implement its mission, including the planning and implementation of the proposed project. In support of their mission and strategic goals, the RRBWSD's objectives for the proposed project consist of the following:

- Maximize the beneficial use of water rights associated with the Onyx Ranch and Smith Ranch in Kern County.

- Reduce dependence upon the imported water from the Sacramento/San Joaquin Delta (Delta) and provide a cost-effective, long-term method to replace a portion of the RRBWSD's contracted SWP water supply that has become unreliable due to environmental restrictions in the Delta.
- Allow the RRBWSD to utilize the water rights associated with the Onyx Ranch and the Smith Ranch to maximize groundwater replenishment in the Kern County Sub-basin within the RRBWSD service area and assist RRBWSD with meeting its sustainability goals under SGMA.
- Increase water flows in the South Fork of the Kern River within existing habitat areas when consistent with water supply objectives.
- Incorporate project elements and project characteristics that address potential environmental effects on visual aesthetics, air quality, cultural resources, sensitive biological resources, water supply, and water quality.
- Include project elements that avoid:
  - Unreasonably affecting fish, wildlife, or other in-stream beneficial uses.
  - Unreasonably affecting the overall economy or environment of the South Fork Valley as well as the Kern River Valley.
  - Injuring any legal users of the waters of the South Fork of the Kern River.

2.5 Project Setting

Regional Setting

The project site is located in the South Fork Valley portion of the Kern River Valley in northeastern Kern County, within the Sierra Nevada Mountains south of the Kern/Tulare County boundaries. The project site is situated adjacent to and on either side of the South Fork of the Kern River. The headlands of the South Fork are in the Golden Trout Wilderness in the Inyo, South Sierra, and Domeland Wilderness Areas in the Sequoia National Forest. Within the South Sierra Wilderness Area, the northern portion of the South Fork flows through fairly open areas dominated by conifers, sage flats, and wet meadows. Downstream from this portion of the river, the South Fork flows through a deep river gorge for the remainder of the South Sierra Wilderness. The South Fork, together with the North Fork, form the major upstream tributaries of the Kern River and converge at the Isabella Reservoir located approximately 5 miles west of the western project site boundary (see Figures 2-1 and 2-2).

Water in the Kern River, measured just east of the City of Bakersfield city limits (located 7 miles west of the mouth of the Kern River Canyon), provides an annual average flow of approximately 731,000 acre-feet (City of Bakersfield, 2011). In addition to the South Fork and North Fork, other minor tributaries from the Piute Mountains along the Lower Kern River contribute to the flow measurement. However, the North Fork is the greater contributor to this flow. Flow in the South Fork is measured at the U.S. Geological Survey (USGS) Onyx Gage Station 11189500 located at the upper end of the South Fork Valley upstream of the project site. During 2005 to 2017, the South Fork had an annual average flow of approximately 88,440 acre-feet, with a maximum of 292,062 acre-feet in 2017 and minimum of 6,385 acre-feet in 2015 (Thomas Harder & Company,

2019). During 2005 to 2017, daily mean discharge at the Onyx Gage Station ranged from zero cubic feet per second (cfs) to 14,000 cfs.[1] Historically, over the period of 1947 to 2014, annual average discharge ranged from 10 cfs (in 1961) to 615 cfs (in 1969) (Thomas Harder & Company, 2015). Typically, the monthly stream flow measured at the Onyx Gage Station is highest from March to June with peak flows in April (Thomas Harder & Company, 2015).

With the construction of the Isabella Dam in 1953, the waters of the South Fork (not consumed upstream) and North Fork of the Kern River were impounded to create the Isabella Reservoir, a man-made earthen reservoir. The Isabella Reservoir consists of 11,499 acres (45 square kilometers) and has a design capacity of 568,000 acre-feet. The Isabella Reservoir is the dividing point between the Upper Kern River that flows into the reservoir and the Lower Kern River, which flows downstream out of the reservoir. Below the Isabella Dam, the Kern River flows through the Kern River Canyon along the southern edge of the Greenhorn Mountains, emerging from the mountains at the eastern boundary of the City of Bakersfield (see Figure 2-1).

Although the main purpose of the Isabella Dam and Reservoir was initially flood control, the other benefits provided by the construction of the Isabella Dam are recreation, fish and wildlife habitat, electrical power generation, and conservation storage for improved water supply for irrigation purposes downstream of the dam. The Kern River Watermaster prepares and keeps daily records on the flow of the waters of the Upper Kern River and the storage and release of surface water to the Lower Kern River from the Isabella Reservoir for deliveries to water right holders in the San Joaquin Valley as coordinated by the City of Bakersfield Water Resources Department. The release of water from the Isabella Dam is made in accordance with prior existing agreements on the Kern River, beginning with the Miller-Haggin Agreement of 1888. The Kern River Watermaster represents various water entities on matters pertaining to: the operation of the Isabella Dam; and water rights administration according to the agreements among the water rights holders located in the San Joaquin Valley.[2] In addition, the Kern River Watermaster coordinates water releases, as required, with the U.S. Army Corps of Engineers (USACE) who is responsible for the operation of the Isabella Dam.

Several entities have water rights or access to water via agreement along the Kern River downstream of the Isabella Dam, including the City of Bakersfield, Olcese Water District, North Kern Water Storage District, Kern Delta Water District, the Buena Vista Water Storage District, and Kern County Water Agency (Kern River Interests). The RRBWSD receives Kern River water from the City of Bakersfield and other Kern River Interests through contractual arrangements.

Above Isabella Reservoir along the South Fork of the Kern River, much of the land on the floor of the Kern River Valley surrounding the project site is privately owned. These lands are used primarily by cattle ranches and agricultural operations, with several thousand acres protected as conservation lands by the USACE, the Bureau of Land Management (BLM), the U.S. Forest Service (USFS), Audubon California, and the California Department of Fish and Wildlife (CDFW). The communities of Weldon and Onyx are located to the south, east, and west of the

1 USGS Daily Statistics for California, Hydrologic Unit Code 18030002, Kern County, California. Accessed: https://waterdata.usgs.gov/ca/nwis/dvstat/?site_no=11189500&por_11189500_9133=2208420,00060,9133.

2 City of Bakersfield Water Resources Department, The Kern River Purchase, December 2003, page 15.

project site. These small rural communities have characteristics that represent the ranching history of the South Fork Valley. In addition to smaller lot residential areas, schools, and limited commercial uses, many of the properties contain farms, horse ranches, and working cattle ranches. The locations of the conservation areas and the communities closest to the project site are shown in Figure 2-2.

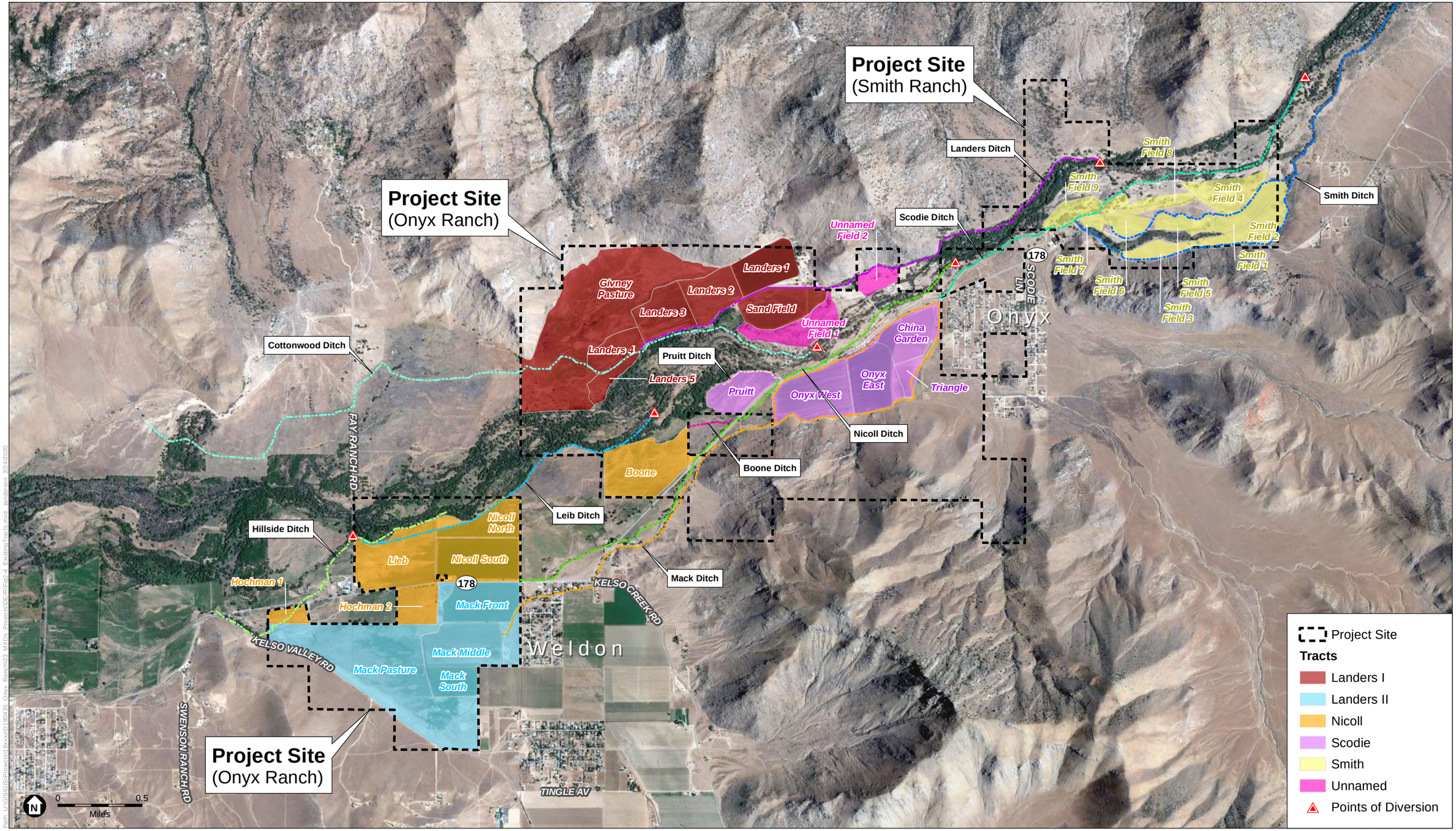
The water rights of the South Fork of the Kern River are associated with the landholdings upstream of the Isabella Reservoir. The majority, but not all, of the South Fork water rights were quantified in a 1902 Arbitration Decree (1902 Decree) that resolved water rights disputes between various diverters on the South Fork. The water rights holders along the South Fork do not have a formal watermaster or organization. However, they have been working with the RRBWSD since 2013 to coordinate operations. The RRBWSD works with the various landowners to record flow data and distribute flow records among the parties on a weekly basis.

The alluvial aquifer system of the South Fork Valley, which is located within the Kern River Valley Groundwater Basin, is relatively shallow and extremely permeable. A review of California Department of Water Resources (CDWR) driller logs show that the alluvium is generally less than 300 feet thick. Up gradient of the Isabella Reservoir, the alluvial aquifer sediments consist primarily of sand and gravel with very high permeability. Individual well pumping rates as high as 4,000 gallons per minute (gpm) have been recorded on CDWR driller's logs and specific capacities greater than 100 gpm per foot of drawdown are common. In the immediate vicinity of the Isabella Reservoir, alluvial sediments contain more silt and clay than areas up gradient of the Reservoir (CDWR, 2003). There are some wells at the perimeter of the Kern River Valley Groundwater Basin area that are constructed in a fractured bedrock aquifer system. Review of CDWR driller logs of those wells indicate they typically yield from 5 gpm to 20 gpm (Thomas Harder & Company, 2015).

Project Site

The project site consists of the Onyx Ranch and Smith Ranch where the points of surface water diversion and place of use would change as a result of the proposed project. The topography on the project site ranges from 2,640 to 3,320 feet above sea level. The project site has a combination of: vacant areas with steep slopes and rocky terrain generally located along the outer portions of the project site; relatively level areas with agricultural fields, ditches, and limited development; and the riverbed and banks of the South Fork that traverse through the project site. In addition, the project site has cottonwood/willow riparian habitat.

Figure 2-3 provides an aerial photograph of the existing conditions, including land uses, on and adjacent to the project site. Figure 2-4 indicates the locations of the existing tracts, agricultural fields, and ditches on the project site and where the ditches originate or end off-site. Of the approximately 3,418 acres of land on the Onyx Ranch portion of the project site, approximately 2,269 acres are currently used for an agricultural purpose, with approximately 611 acres of riparian pasture and approximately 1,658 acres of irrigated agricultural lands (pasture and crops).



SOURCE: Google Earth, 2018; Rosedale-Rio Bravo Water Storage District

Onyx Ranch South Fork Valley Water Project

Figure 2-4
Existing Tracts, Fields and Ditches

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The remainder of the Onyx Ranch is mountainous or otherwise not suitable for agriculture. For the Smith Ranch portion of the project site, of the approximately 691 acres, approximately 278 acres are riparian pasture, 171 acres are mountainous areas, and approximately 242 acres are used for irrigated pasture purposes. The riparian and irrigated pastures have been irrigated for at least the last 20 years. The Smith Ranch acreage is irrigated exclusively with surface water diverted from the South Fork of the Kern River and conveyed to the fields with earthen ditches.

Table 2-1 provides a summary of the crops that have been historically grown on the Onyx Ranch portion of the project site between 2009 and 2017. The crops include alfalfa, potatoes, oats, sudan grass, and irrigated pasture. These crops have been irrigated during their respective seasons by water from two sources: (1) surface water diverted from the South Fork and conveyed to the fields via earthen ditches; and (2) pumped groundwater when surface water is not available.

As indicated in Figure 2-3, in addition to SR 178 which traverses through the two parts of the project site, there are three developed areas on the project site: (1) the Onyx Ranch Headquarters located along the northern boundary of the project site; (2) the Onyx Store, adjacent single family residence, and sheds located along the southern side of SR 178, in the central-eastern portion of the project site; and (3) buildings associated with the Smith Ranch located in the eastern portion of the project site. A review of aerial photographs of the project site indicated that the structures on the Onyx Ranch were constructed prior to 1952 and little change to development has occurred on the project site since then (Kennedy/Jenks Consultants, 2008, pages 3-2 and 3-3).

The structures and supporting facilities that comprise the Onyx Ranch Headquarters include ranch-style residential structures, rows of cabins, barns, silos, storage sheds, water wells, corals, and a storage area for old equipment and debris. There are internal paved and dirt roads that are lined with trees in some places. Access is provided from SR 178 via Doyle Ranch Road that has a bridge over the South Fork of the Kern River. The Onyx Store, which was founded in 1861, continues to operate today. Adjacent to the Onyx Store is a single-family residence as well as storage sheds and a parking lot. Access to these structures is provided from SR 178. The proposed project does not involve any changes to the Onyx Ranch Headquarters or the Onyx Store.

The structures and facilities associated with the Smith Ranch include a residence, two barns, two corrals, a saddle house, storage sheds, associated outbuildings, and water wells. The proposed project does not involve any changes to these structures or facilities.

The following parcels on the project site are within the designated 100-year flood zone: 055-130-12; 055-130-14; 321-020-02; 321-020-05; 321-020-43; 321-030-05; 321-030-11; 321-030-12; 321-030-13; 321-030-15; 321-030-16; 321-030-17; 321-030-21; 321-040-03; 321-040-04; 321-040-10; 321-181-01; 426-032-10; 426-032-11; 426-032-12; 426-032-13; 426-032-14; 426-032-15; 426-034-10; 426-035-02; and 426-080-04 (Kennedy/Jenks Consultants, 2008, page 2-2; RRBWSD, 2018).

TABLE 2-1
SUMMARY OF CROPS 2009–2017 ON ONYX RANCH PORTION OF THE PROJECT SITE

Tract/Field	Acres	Crops[a]
Landers I		
Givney Pasture	312	Irrigated Pasture
Landers 1	55	Irrigated Pasture and Alfalfa
Landers 2	53	Alfalfa, Irrigated Pasture, Oats, Potatoes, and Sudan Grass
Landers 3	54	Irrigated Pasture
Landers 4	33	Irrigated Pasture
Landers 5	19	Irrigated Pasture
Landers Sand 1	45	Alfalfa, Irrigated Pasture, Oats, and Potatoes
Landers Sand 2	15	Alfalfa, Fallow, Irrigated Pasture, Oats, and Potatoes
Landers II		
Mack Front	60	Alfalfa, Oats, Potatoes, and Sudan Grass
Mack Middle 1	32	Alfalfa, Fallow, Irrigated Pasture, Oats, and Potatoes
Mack Middle 2	33	Alfalfa, Irrigated Pasture, Oats, Fallow, and Potatoes
Mack South	35	Alfalfa, Fallow, and Irrigated Pasture
Mack Pasture	267	Irrigated Pasture
Nicoll		
Lieb	107	Irrigated Pasture
Nicoll South	82	Oats, Potatoes, and Sudan Grass, Alfalfa
Nicoll North	45	Fallow and Irrigated Pasture, Alfalfa
Boone	96	Alfalfa and Oats, Irrigated Pasture
Hochman 1	14	Irrigated Pasture
Hochman 2	32	Irrigated Pasture
Scodie		
Pruitt	44	Irrigated Pasture
Onyx West	83	Irrigated Pasture and Oats, Sudan Grass, Potatoes
Onyx East	71	Fallow, Irrigated Pasture, and Oats, Alfalfa
China Garden	56	Sudan, Oats, Potatoes, Fallow, Rye
Triangle	15	Fallow
Other		
Unnamed Field 1	50	Irrigated Pasture and Riparian Pasture [b]
Unnamed Field 2	20	Irrigated Pasture and Riparian Pasture
RP1	64	Riparian Pasture
RP2	13	Riparian Pasture
RP3	65	Riparian Pasture
RP4	173	Riparian Pasture
RP5	8	Riparian Pasture
RP6	154	Riparian Pasture
RP7	30	Riparian Pasture

TABLE 2-1 (CONTINUED)
SUMMARY OF CROPS 2009–2017 ON ONYX RANCH PORTION OF THE PROJECT SITE

Tract/Field	Acres	Crops[a]
RP8	5	Riparian Pasture
RP9	0	Riparian Pasture
RP10	1	Riparian Pasture
RP11	6	Riparian Pasture
RP12	10	Riparian Pasture
RP13	12	Riparian Pasture
Approx. Total Acreage	**2,269**	

[a] Summary of crops includes indication of whether or not the field had been in a fallow condition.

[b] Riparian Pasture fields are within the river bottom and are not irrigated.

SOURCE: Rosedale-Rio Bravo Water Storage District, August 2017.

Existing Irrigation Improvements On-Site and Adjacent to Project Site

Figure 2-4 provides the general layout of the existing water conveyance system on the project site. There are three existing diversions from the South Fork of the Kern River that serve the Onyx Ranch: (1) the diversion at the head of the Nicoll Ditch; (2) the diversion at the head of the Landers Ditch; and (3) the diversion at the head of the Lieb Ditch. The Nicoll and Landers diversions supply the majority of water to the Onyx Ranch. The Lieb Ditch is used occasionally if the water level in the South Fork is high enough to supply the ditch. Since the headworks to the Scodie Ditch washed out in 2010, the Nicoll Ditch is used to supply water to the Scodie Ditch (also referred to as the Mack Ditch). Currently, the Lieb Ditch and Scodie Ditch are not in use.

The diversion from the South Fork of the Kern River for the Smith Ranch portion of the project site is the Smith Ditch. The Smith Ditch is located downstream of the Bloomfield Ditch and upstream from all of the Onyx Ranch diversions.

There are other ditch systems that serve the areas surrounding the project site. The Bloomfield Ditch is located upstream of the Smith Ranch and serves a portion of the CDFW Bloomfield Ranch property located east of the project site. There are currently four diversions and ditch systems downstream of the Onyx Ranch diversion points: the Cottonwood Ditch, the Hillside Ditch, the Prince Ditch, and the Miller Ditch. These ditches serve approximately 1,500 acres of irrigated agricultural lands west of the project site in the South Fork Valley.

All of the diversions from the South Fork of the Kern River are “run of the river” with no storage upstream.

2.6 Project Site Water Rights and Proposed Diversion

Project Site Water Rights

The RRBWSD water rights involved in the proposed project are all pre-1914 appropriative rights to divert water from the South Fork of the Kern River. The majority of the water rights for the proposed project were quantified in a 1902 Arbitration Decree (1902 Decree) that resolved water rights disputes between various diverters on the South Fork. The balance of the pre-1914 rights involved in the proposed project are evidenced in other historic documents and chains of title for the RRBWSD property in the South Fork Valley.

The 1902 Decree provides for a specified quantity of diversion that can occur based on: the order of priority; the named priority rights in the decree; and if there is additional flow available above and beyond the demands of the named priority rights (in an equal division among the parties named in the decree).

While the 1902 Decree water rights relate to the majority of the Onyx Ranch property acquired by the RRBWSD, there are two portions of the Onyx Ranch property that were not covered by the 1902 Decree: (1) the Wirth/Lieb fields (in NW ¼ of Section 13 and in the NE ¼ of SW ¼ of Section 13 and NW ¼ of SE ¼ of Section 14, all in Township 26 S., Range 34 E); and (2) the Boone Field (in the SE ¼ of Section 7, Township 26 S., Range 35 E.). The pre-1914 appropriative rights for the Wirth/Lieb field are documented in the deeds for the Onyx Ranch property and historic reports describing when the ditches serving the property were constructed in relation to the other ditches along the South Fork of the Kern River. These documents discuss an 1870 ditch, which places the priority of the water right between the 11th and 12th in the 1902 Decree.

The Boone Field has riparian rights with an 1882 priority date. The riparian rights for the Boone Field cannot be transferred. However, the RRBWSD could reduce water diversions under the Boone riparian right to make more water available for appropriative rights junior to 1882, such as the 33rd water right under the 1902 Decree.

The RRBWSD also acquired a one-third interest in the Smith Ranch, including its water rights. The Smith Ditch, which serves the Smith Ranch, provides one of the oldest water rights on the South Fork of the Kern River with a priority date of 1861/1862.

Historic documents describe the priority dates for the water rights for the Wirth/Lieb fields, Boone Field, and Smith Ranch properties, but do not specifically quantify these water rights. For consistency, the same methodology used in the 1902 Decree was used to quantify the water rights for the Wirth/Lieb fields, Boone Field, and Smith Ranch fields, which utilizes a 150 miner's inch diversion right, under a 4-inch pressure, for each 160 acres. This is roughly equivalent to 3 cfs per 160 acres. **Table 2-2** provides the priorities, priority dates, and the decreed water right quantities associated with the project site based on the pre-1914 appropriative rights on the South Fork of the Kern River.

TABLE 2-2
SUMMARY OF RRBWSD WATER RIGHT PRIORITIES AND PRE-1914 APPROPRIATIVE WATER RIGHTS

RRBWSD Water Rights Priority Date	Quantity of RRBWSD Pre-1914 Appropriate Water Rights
Decree 1st 1861	150 MI or 3 cfs
Smith Ranch one-third 1861/1862	165.65 MI or 3.313 cfs
Decree 3rd 1864	156 MI or 3.12 cfs
Decree 6th 1866	150 MI or 3 cfs
Decree 7th 1868	150 MI or 3 cfs
Wirth/Lieb 1870	193 MI or 3.86 cfs
Decree 12th 1871	300 MI or 6 cfs
Decree 30th 1882	150 MI or 3 cfs
Decree 33rd 1883	150 MI or 3 cfs
	31.293 cfs[1]

MI = Miners Inch. 1902 Decree states "water measured under a 4-inch pressure,"

1 Miners inch = (0.623x8.02/144)(4/12)^0.5 = 0.02 cfs.

0.02 cfs x 150 miner's inches = 3.0 cfs. California. Water Code section 24 states that 1 MI equals 1.5 cubic feet per minute, however, this measurement is based on a 6.25-inch pressure. The MI for the 1902 Decree is based on a 4-inch pressure, making the 50 MI = 3.0 cfs a more appropriate and conservative measure for the locality. (http://sizes.com/library/technology/miners_inch_lib1.htm)

cfs = cubic feet per second

[1] Subject to increase pursuant to the terms of the 1902 Decree in times of additional flow.

SOURCE: 1902 Arbitration Decree; Deed from Pyle to Wirth, June 14, 1882; Deed from Wirth to Rankin, October 1, 1907; Deed from Rankin to Cross, February 12, 1908; Deed from Cross to Lieb, September 1, 1915; Deed from Rankin to Alexander dated October 30, 1913; State California Department of Public Works, South Fork Kern River Investigation Report, March 1930; Morgan, Wallace M., History of Kern County, California, Historic Record Company, Los Angeles, California (1914), pp. 620, 623; U.S. General Land Office Survey Plats dated 1875 and 1882 for Township 35 S., Range 35 East.

Quantity of Surface Water Involved in the Proposed Project

The amount of water to be moved as a part of the proposed project would vary from year to year and month to month based on the following factors:

(1) Flow in the South Fork of the Kern River and the resulting amount of water available under the RRBWSD South Fork water rights.

(2) The typical irrigation demand, by month, on the project lands without the project.

(3) A no injury factor to account for the following losses between the Onyx Ranch and Isabella Reservoir anticipated to occur as a result of the project: (a) increased evapotranspiration; (b) increased streambed infiltration; and (c) increased subsurface outflow.

Each of these factors would serve as a limiting factor on the amount of surface water available for the proposed project.

For purposes of the proposed project, the amount of water that would flow downstream for use in the RRBWSD service area would be determined using the following three-step process:

First, the RRBWSD would determine the amount of water available under each water right listed in Table 2-2 based on flows in the South Fork of the Kern River. The flow in the South Fork of

the Kern River is measured at the USGS Onyx Gage located upstream of the Onyx Ranch. There is one diversion, the Smith Ranch diversion, between the gage and the Onyx Ranch. The amount of water available under the water rights described above is generally determined by the flow measured at the USGS gage, minus two-thirds of the Smith Ranch diversion, plus accretions (additional water) that occur below the gage, for example due to runoff or groundwater upwelling.

Second, the RRBWSD would compare the amount of water available under its water rights to the typical irrigation water demand of the project site (the existing condition without the proposed project), by month, relative to water year type. Table 2-3 displays the amount of water diverted under the Onyx Ranch water rights from 2009 to 2017 based on recorded diversions for the years 2013 through 2017 and based on annual water right reports to the State Water Resources Control Board for years 2009 to 2012.

TABLE 2-3
ONYX RANCH DIVERSIONS FROM SOUTH FORK OF THE KERN RIVER – YEARS 2009-2017

Water Year	South Fork at USGS Gage (acre-feet)	Year Type[a]	Total Onyx Ranch Diversions (Average Acre-Feet per Year)
2009	41,239	Below Normal	9,110
2010	111,381	Above Normal	27,435
2011	204,039	Wet	41,119
2012	27,224	Dry	19,380
2013	12,774	Critical	8,194
2014	9,603	Critical	5,914
2015	6,385	Critical	3,408
2016	16,554	Critical	7,331
2017	309,727	Wet	16,099
(Annual Average for 9-Year Period)			**15,332**

[a] San Joaquin Valley Water Year Hydrologic Classifications, as defined in the California Water Plan Update 2009, are defined below. The Water Year Index is used to determine the San Joaquin Valley water year type as implemented in SWRCB D-1641. Year types are set by first of month forecasts beginning in February. Final determination for San Joaquin River flow objectives is based on the May 1 75% exceedance forecast.

Year Type	Water Year Index
Wet	Equal to or greater than 3.8 million acre-feet
Above Normal	Greater than 3.1 and less than 3.8 million acre-feet
Below Normal	Greater than 2.5 and equal to or less than 3.1 million acre-feet
Dry	Greater than 2.1 and equal to or less than 2.5 million acre-feet
Critical	Equal to or less than 2.1 million acre-feet

SOURCE: Thomas Harder & Co, 2019; California Department of Water Resources, San Joaquin Valley Water Year Index, Statements of Diversion and Use Reports for Statement numbers KV_S021076, KV_S021077, KV_S021078, KV_S021079, located on www.swrcb.ca.gov. Reports for years 2009 through 2012 submitted by prior owner; reports for years 2013 through 2017 submitted by RRBWSD. RRBWSD uses a combination of industry standard continuous flow measurement devices manufactured by Mace and SonTek (AgriFlow, FlowTracker, IQ).

The RRBWSD has further analyzed diversions, available flows, and crop water use during the 2009 to 2017 time period and identified the “typical monthly water demand” for the project site, as indicated in Table 2-4, below.

TABLE 2-4
ONYX RANCH AND ONE-THIRD INTEREST IN SMITH RANCH TYPICAL IRRIGATION DEMAND BY MONTH (2009–2017) [a]

Month	Typical Monthly Demand (cfs)
January	21
February	26
March	44
April	49
May	49
June	49
July	46
August	20
September	26
October	46
November	29
December	25

[a] The year 2011 is excluded because it was an unusually high flow and diversion year.

SOURCE: Rosedale-Rio Bravo Water Storage District, April 2019a.

Third, the RRBWSD would reduce the amount of water that it would claim at the Isabella Reservoir by a no-injury factor of 17 percent. The no-injury factor is explained further in Section 2.7 below. Using this method, the RRBWSD would estimate the total amount of water that would be moved from the project site to the RRBWSD service area on the San Joaquin Valley floor. The total amount of surface water would range from about 2,000 acre-feet per year to 12,000 acre-feet per year, depending on year type.

The flow rate of the additional project–related water moving downstream to the Isabella Reservoir could vary from about 6 cfs to 60 cfs depending on the amount of water available under the water rights in a given time period. These flows are within the normal range of flows that typically occur in the South Fork of the Kern River and the Lower Kern River. The South Fork flows at the USGS Onyx Gage have typically ranged from 0 cfs to 14,000 cfs and the Kern River regulated flows below the Isabella Dam have typically ranged from 150 cfs to 4,500 cfs (for non-flashflood events) (Thomas Harder & Company, 2015).

2.7 Description of the Proposed Project

To accomplish the project objectives, the proposed project involves changing the points of diversion and place of use for the RRBWSD's pre-1914 appropriative surface water rights in the South Fork of the Kern River from the project site to the RRBWSD diversion point on the San Joaquin Valley floor. The proposed changes would allow water to flow past the project site (Onyx and Smith Ranches), resulting in a net increase in surface flows within the South Fork of the Kern River and the Isabella Reservoir. The increased amount of water accumulated in the Isabella Reservoir would be released through the Isabella Dam and flow downstream in the Lower Kern

River. The RRBWSD would divert the water from the Lower Kern River and deliver it to the groundwater recharge basins and channels in and near the RRBWSD's service area west of the City of Bakersfield in the San Joaquin Valley.

As described above in Section 2.6, the amount of water involved in the proposed project annually would be the lesser of the amount available to the RRBWSD under its Onyx Ranch and Smith Ranch pre-1914 appropriative water rights from the South Fork during actual flow conditions and the typical pre-project irrigation demands on the project site, less a no-injury factor as discussed further below.

The proposed project would not include pumping groundwater to meet irrigation demand on the project site. In order to reduce irrigation demand on the Onyx Ranch, previously irrigated agricultural fields would be converted to non-irrigated pasture or native vegetation, as discussed further below.

Project Elements

The proposed project would implement the following elements.

Project Element 1 – Surface Flow Diversion Records and Notification Process

Project Element 1 consists of the collection of surface flow diversion data for the South Fork of the Kern River and the preparation of data records for use by downstream water right holders. Coordination of surface flow diversions among the water right holders is a necessity to ensure good water management and preclude water rights disputes based on erroneous or no information. For the existing conditions, on a monthly basis, the RRBWSD currently posts flow and diversion records for their users and the other participating downstream South Fork water users. Through a federal WaterSMART grant, the RRBWSD has installed doppler/acoustic flow metering devices at the various diversion points. The implementation of the proposed project would include the continuation of the practice of monthly postings of daily flow and diversion records. In addition, more frequent coordination with the Kern River Watermaster and City of Bakersfield Water Department would occur.

The RRBWSD would prepare a spreadsheet incorporating the surface flow records and the computed amount of water to move downstream, based on the amount available under the water rights, the typical irrigation demand for the month, and the applicable no-injury factor. On a weekly or daily basis, as deemed necessary, the RRBWSD would notify downstream South Fork water users and the Kern River Watermaster of the RRBWSD diversions that would be directed to and through Isabella Reservoir, so that surface flow would not be mistakenly diverted by other downstream water rights holders.

Project Element 2 – Groundwater Management and Pumping Records

Project Element 2 consists of the collection of groundwater pumping data and the preparation of data records for use by the water right holders. Coordination of groundwater data among the water right holders is a necessity to ensure good groundwater management and to preclude water

rights disputes based on erroneous or lack of information. The RRBWSD has installed flow metering devices on all of its irrigation wells. With the implementation of the proposed project, the RRBWSD would post daily pumping records on a monthly basis.

The RRBWSD would not pump groundwater to meet the typical irrigation demand on the Onyx and Smith Ranches (see Table 2-4). Groundwater pumping would continue for non-irrigation purposes such as supply for on-site houses, livestock, fire management, landscape, and dust control. The groundwater pumping records would allow the community to see the groundwater pumping trends for the existing conditions and with the proposed project.

Project Element 3 – Groundwater Level and Water Quality Records

Project Element 3 consists of the collection of groundwater level and water quality data. Coordination of data about groundwater level and water quality among the water right holders is a necessity to ensure good groundwater management and to preclude water rights disputes based on erroneous or lack of information. Currently, the RRBWSD monitors 12 wells for water level depth on a monthly basis and water quality on an annual basis. Other landowners and leaseholders in the South Fork Valley also collect groundwater data for their own purposes. With the implementation of the proposed project, the RRBWSD would collect data from the wells on the project site as well as seek additional data from other South Fork Valley water purveyors and post the records on a monthly basis.

Project Element 4 – Groundwater/Surface-Water Model to Estimate No-Injury Factor

Project Element 4 consists of the use of a comprehensive calibrated groundwater/surface-water model to estimate the net difference between the amount of South Fork of the Kern River water reaching Isabella Reservoir in the existing condition and with the proposed project. This would define the estimated no-injury factor. The proposed project would not move downstream the same amount of surface water that is diverted on the project site for irrigation under the existing condition. Rather, as part of the proposed project, the RRBWSD would reduce the amount of water to be diverted by a “no-injury” factor that would account for: (a) evapotranspiration between the Onyx Ranch and the Isabella Reservoir; and (b) the portion of the prior diverted and applied surface water that was previously reaching Isabella Reservoir as return flow.

Estimating the no-injury factor is complicated by the fact that direct measurement of the South Fork of the Kern River flows into Isabella Reservoir are not possible during high flow conditions, and due to the delta-type alluvial nature of the South Fork of the Kern River, Isabella Reservoir elevation fluctuations, and the dense habitat in the South Fork as it flows to the Isabella Reservoir. During low-flow conditions that typically occur after the peak snow melt, flows can be manually measured with a handheld gauge at the primary channel at the South Fork of the Kern River (located at Patterson Lane, 2.4 miles west of Sierra Way) (see Figure 2-2).

The computation is also impacted by seasonally fluctuating groundwater levels. Groundwater levels in the South Fork Valley have been relatively stable since 1929. Groundwater levels located near the South Fork typically fluctuate between above land surface to 15 feet below land

surface (Thomas Harder & Company, 2019).The South Fork of the Kern River operates as a neutral or gaining stream[3] as it flows through the watershed and both surface and shallow groundwater end up in Isabella Reservoir if not consumptively used in the South Fork Valley prior to entering the Isabella Reservoir. The gaining stream conditions are best observed during the lower flow conditions from early summer through the fall. This is typically when total diversions downstream of the Onyx Gage exceed the flow measured at the gage itself as depicted on flow diversion records (typically 200 to 500 acre-feet/month or 3 to 10 cfs).[4]

To address the limited ability to directly measure flows into the Isabella Reservoir and the surface and groundwater interaction, the RRBWSD developed a comprehensive calibrated groundwater/surface model to estimate the net difference between the amount of the South Fork of the Kern River water reaching Isabella Reservoir in the existing condition and with the proposed project (Thomas Harder & Company, July 2019; Appendix E).

The model water budget includes inflow and outflow factors such as precipitation, stream inflow, groundwater, evapotranspiration, evaporation, infiltration, return flow, subsurface flows, and crop consumptive use. The calibrated model for the period is January 2005 to December 2017. For this 13-year period, the model shows that reducing 94,452 acre-feet per year of previous net diversions to the project site results in 78,183 acre-feet per year more water in the Isabella Reservoir, without impacting other reservoir storage amounts. Said differently, over the 13-year period, a modeled comparison of the existing condition and the proposed project shows that 83 percent of re-directed flows (from pre-project surface water diversions) goes into and can be released out of Isabella Reservoir as new water below the Isabella Reservoir without injury to other legal users. On an average annual basis, the model shows that an average of 7,265 net acre-feet per year of redirected flows from the Onyx Ranch and the Smith Ranch results in an average of 6,014 net acre-feet per year of new water in the Isabella Reservoir. The model and its conclusions are the basis for the 17 percent no-injury factor to be applied to the proposed project.

Project Element 5 – Coordinated Release of Water from Isabella Reservoir

Project Element 5 consists of coordination with the USACE, Kern River Watermaster, and the Kern River Interests to release the RRBWSD water through the Isabella Reservoir and ensure it is not diverted by others between the Isabella Reservoir and the existing diversion points in the RRBWSD service area. The RRBWSD would coordinate with the Lower Kern River Interests to address scheduling releases and computing any losses between the Isabella Reservoir and the existing RRBWSD diversion points within its service area.

The increased flow in the South Fork of the Kern River watershed would move downstream through Isabella Reservoir and the Isabella Dam and then into the Lower Kern River. The RRBWSD would coordinate with the Kern River Watermaster, Kern River Interests, and USACE to facilitate the movement of the water through the Isabella Dam, or alternatively, secure

[3] A gaining stream has a channel bottom that is lower than the level of the surrounding groundwater table, such that groundwater moves into the channel and increases surface flow.

[4] Rosedale-Rio Bravo Water Storage District has maintained flow diversion records since 2013 to present.

temporary storage of the water in the Isabella Reservoir for later release to the downstream RRBWSD service area.

Project Element 6 – Land Management

Project Element 6 consists of land management practices for the agricultural fields on the project site.

Onyx Ranch

With the proposed project, the fields and pastures currently irrigated with surface water on the Onyx Ranch would be converted to non-irrigated pasture or native vegetation, with one exception. The Boone Field, which has non-transferrable riparian rights, would continue to be irrigated similar to existing conditions, or fallowed to make more surface water available for the pre-1914 appropriative rights. The transition to non-irrigated pasture would be achieved by planting vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle.

With the proposed project, a Grazing Management Plan would be developed to identify grazing practices, performance standards, and associated monitoring to achieve soil conservation, weed management, and agricultural productivity objectives. Inter-annual variability of pasture productivity could occur due to the total reliance on natural precipitation for pasture production. The Grazing Management Plan would also include drought management strategies for grazing activities, utilizing replacement feed, use of off-site pastures, early calf weaning, and herd culling in dry years.

Smith Ranch

No substantial changes to agricultural practices at the Smith Ranch are anticipated with implementation of the proposed project other than a 33 percent reduction in irrigated acres. More effective use of existing available forage can be made with modifications to grazing management activities and the implementation of a Grazing Management Plan, including seasonal livestock rotation, residual dry matter targets,[5] fence maintenance (including potential replacement of existing fences), and establishment of additional livestock watering locations.

2.8 Project Implementation

Modified Use of Ditches on the Project Site

The proposed project would result in reduced diversions of water to the Onyx Ranch and the Smith Ranch, which would in turn, result in modified use of the diversion ditches. As noted in **Table 2-5** below, for most ditches, flow and run-time would be modified, but the ditch would still be used to convey water. Many of the ditches would continue to be used by the RRBWSD or the

[5] Residual dry matter is a standard used by land management agencies for assessing the level of grazing use on an annual basis. Residual dry matter refers to the old herbaceous plant material left standing or on the ground at the beginning of the growing season. The amount of residual dry matter remaining after grazing, subject to site conditions and weather variations, will typically influence future species composition and forage production. (University of California, Division of Agriculture and Natural Resources, *Guidelines for Residual Dry Matter on Coastal and Foothill Rangelands in California*, Publication 8091, found at: https://ucanr.edu/blogs/mySFRECblog/blogfiles/24163.pdf.

surrounding landowners. For one ditch, Pruitt Ditch, use diversions would cease. Ditches would continue to be maintained for water conveyance purposes and would not be modified (i.e., filled in) as a result of the proposed project.

TABLE 2-5
BASELINE DITCH CONDITION AND PROPOSED DIVERSION CHANGES

Ditch	Baseline Condition	Frequency of Use	Change in Status with Project Implementation
Smith Ditch	Used Routinely	Typically runs continuously November to June, except during maintenance outages.	Run time[a] would be the same. Flow rate would be adjusted down by 33 percent. Irrigation would continue by non-RRBWSD co-owners of the Smith Ranch property.
Scodie Ditch	Not In Use	Not in use	No change
Mack Ditch	Used Intermittently	Typically runs intermittently March to June with river water and July to October with well water.	Ditch would continue to be used to transport well water annually from July to October to the Boone Field.
Landers Ditch	Used Routinely	Typically runs continuously, except during maintenance outages.	Run time would be reduced annually. Flow rate would be reduced by approximately 75 percent. Ditch would continue to be used by the Audubon California Kern River Preserve to move water to the Cottonwood Ditch.
Nicoll Ditch	Used Routinely	Typically runs intermittently February to June.	Run time would not be reduced. Flow rate would be reduced by approximately 50 percent. Ditch would continue to be used by the Audubon California Kern River Preserve and the Nicoll Ranch.
Cottonwood Ditch	Used Routinely	Typically runs intermittently February to June as served from the Landers Ditch.	No change. RRBWSD would continue to move water for the Audubon California Kern River Preserve from the Landers Ditch to the Cottonwood Ditch.
Pruitt Ditch	Used Intermittently	Typically runs intermittently March to June with river water and July to October with well water.	Flow would cease.
Lieb Ditch	Not in Use	Not in Use	No change
Boone Ditch	Used Intermittently	Typically runs intermittently March to June with river water and July to October with well water.	No change
Miller Ditch	Used Routinely	Typically runs continuously February to June, except during maintenance outages.	No change
Prince Ditch	Used Routinely	Typically runs continuously February to June, except during maintenance outages.	No change
Hillside Ditch	Used Intermittently	Typically runs intermittently March to May.	Run time would not be reduced. Flow rate would be reduced by about 50 percent.

[a] Run time refers to the range of months when water typically flows through ditches.
SOURCE: Rosedale-Rio Bravo Water Storage District, April 2019b.

Groundwater Use on the Project Site

There are five groundwater irrigation wells currently in use on the Onyx Ranch. The existing groundwater pumping operation on the Onyx Ranch consists of about 3,000 to 8,000 acre-feet per year. With the proposed project, groundwater pumping for irrigation of the Boone Field would continue, similar to existing conditions. Groundwater would not be used for irrigation purposes at any other fields on the Onyx Ranch. The current operations of the Smith Ranch use one domestic water well, which supplies water for one water trough used by livestock. Surface water sources supply the remainder of the water required for livestock. In addition to the domestic well, there are no groundwater production wells currently in use at Smith Ranch to provide water for irrigation. The groundwater pumping regiment of existing wells on Smith Ranch would remain the same with implementation of the proposed project.

In addition, the proposed project would include the development, on an as needed basis, up to 12 shallow, low-volume wells powered by solar facilities to provide livestock water and improved livestock distribution for more effective use of the available forage on Onyx Ranch and Smith Ranch. The solar wells would be 6 inches in diameter and approximately 20 to 50 feet deep. Each well location would have a 2,000 to 4,000 gallon aboveground tank for water storage for use during weather conditions when the solar power for well pumping does not operate. The water tank would be on the ground and connect by an aboveground pipe to a livestock trough. The footprint of the aboveground well components would be approximately 20 feet by 40 feet. Construction of each solar well would take up to 3 days and would require a hollow-stem auger rig to drill the well. Each well is anticipated to have a 2 to 5 gpm capacity, but actual use would depend on herd size, which may fluctuate annually based on drought conditions. Well locations and numbers would be determined during project implementation, on an as-needed basis, based on field and pasture transitions and livestock capacity. The solar wells would be sited at least 1,000 feet from the South Fork of the Kern River and outside of sensitive natural communities, riparian, and marsh habitats which include the following: Joshua tree woodland, Fremont cottonwood forest, creeping ryegrass turfs, red willow thickets, cattail marsh, mulefat thickets, sandbar willow thickets, and salt grass flats. Ground-disturbing or non-native vegetation removal activities associated with installation of the solar wells would be scheduled outside the nesting season (September 1 to February 14 for songbirds and September 1 to January 14 for raptors) to avoid potential impacts to nesting birds.

Field and Pasture Transitions

The conversion of irrigated fields and pastures to non-irrigated fields and pastures for grazing would require modification of the existing agricultural practices on the project site. The conversion from irrigated row crops as identified in Table 2-1 to non-irrigated row crops and pasture would involve working the fields with tractors. Each field would be prepared sequentially over 1 to 3 months, and approximately one to three tractors would be onsite at any given time. The fields may then be prepared for planting using chisel plows and disk plows and planted using approximately one to three tractors. This would be similar or less intensive than the existing agricultural practices for the planting of crops on the project site.

Site preparation to convert existing irrigated pasture to non-irrigated pasture and grazing lands may include broadcast seeding followed by pasture harrow or direct drill seeding. Application of some irrigation water (one acre-foot per acre) as well as follow up seeding in subsequent years may be needed based on weather patterns and success of the initial seeding. Maintenance of vegetative cover on these pastures prior to seeding would help to reduce wind erosion to levels similar to the current conditions.

Operation and Maintenance

Operation of the proposed project would involve increased flows in the South Fork of the Kern River downstream of the project site, into Isabella Reservoir, and through Isabella Dam into the Lower Kern River. The increased surface water flows would be diverted by the RRBWSD at existing facilities on the Lower Kern River.

Operation of the proposed project would involve management of the non-irrigated pastures used for grazing lands and native vegetation. Management activities would be less intensive for the drought-tolerant vegetation than for the existing row crops because the proposed project would not require annual replanting. The management of livestock would be similar to existing operations on the project site and would include transporting cattle to new areas on-site for grazing when the forage material has been consumed.

The changes in agricultural practices with the proposed project would not result in an increase in the use of hazardous materials such as gasoline, diesel fuel, solvents, or herbicides. Consistent with existing conditions, infrastructure repairs and upgrades would continue to occur on the project site, particularly on the Smith Ranch.

The proposed project has the potential to create fugitive dust emissions from land preparation, maintenance activities, and livestock transport and grazing. During the implementation and ongoing operation activities for the proposed project, potential fugitive dust emissions would be suppressed per the Eastern Kern Air Pollution Control District Rule 402: Fugitive Dust, which requires control of fugitive dust from certain unpaved roadways, bulk storage piles, construction and demolition projects, and land leveling and clearing projects. Additionally, the proposed project would be compatible with the Kern River Valley Specific Plan (KRVSP) Conservation Element Air Quality Policies 5.5.1 through 5.5-3, which require enforcement of measures to suppress fugitive dust. The proposed project would also occur in compliance with KRVSP Conservation Element Air Quality Implementation Measure 5.5-1, which requires fugitive dust control during active agriculture activities, water ditch maintenance, harvesting activities, and maintenance of fallow land. If water would be required to manage dust and achieve dust suppression on the project site, the RRBWSD would use either groundwater or a portion of the diverted flow consistent with the proposed project.

2.9 Project Schedule

The proposed project would have an implementation timeframe of up to approximately 3 years depending on hydrology and lease terms.

2.10 Discretionary Actions, Approvals, and Permits

The RRBWSD, as the lead agency, would be considering approval of the following discretionary permits and approvals:

- Approval of the Onyx Ranch South Fork Valley Water Project.
- Certification of the Final Environmental Impact Report as complete and final.
- Adoption of the Mitigation Monitoring and Reporting Program (to include mitigation measures and applicable Kern River Valley Specific Plan implementation measures).

The following additional responsible or trustee agencies may have discretionary or other permit authority over all or portions of the proposed project:

- California Department of Conservation
- California Department of Fish and Wildlife
- California Department of Transportation
- Central Valley Regional Water Quality Control Board
- Eastern Kern Air Pollution Control District
- Kern County Fire Department
- San Joaquin Valley Unified Air Pollution Control District
- U.S. Army Corp of Engineers
- U.S. Department of Fish and Wildlife

2.11 References

City of Bakersfield, 2011. Kern River Hydrographic Report.

Kennedy/Jenks Consultants, 2008. Phase I Environmental Site Assessment and Limited Phase II Soil Investigation Kelso Valley Wind, Kern County, California, September 29, 2008.

Rosedale-Rio Bravo Water Storage District, 2018. Onyx Ranch South Fork Valley Water Project Initial Study, February 22, 2018.

Thomas Harder & Co., 2015. Hydrogeological Setting of the Onyx Ranch Project. Prepared for Rosedale-Rio Bravo Water Storage District, February 11, 2015.

Thomas Harder & Co., 2019. Hydrogeological Evaluation of the Onyx Ranch Project. Prepared for Rosedale-Rio Bravo Water Storage District, July 2019.

CHAPTER 3

Environmental Setting, Impact Analysis, and Mitigation Measures

3.1 Format of the Environmental Impact Analysis

In compliance with Section 15126 of the California Environmental Quality Act (CEQA) Guidelines, this Chapter 3 provides an analysis of the environmental effects of the Onyx Ranch South Fork Valley Water Project (proposed project). The environmental topics considered in this Draft EIR and their corresponding section numbers are as follows:

- 3.3 Aesthetics
- 3.4 Agriculture
- 3.5 Air Quality
- 3.6 Biological Resources
- 3.7 Cultural Resources
- 3.8 Geology and Soils
- 3.9 Greenhouse Gas Emissions
- 3.10 Hazards and Hazardous Materials
- 3.11 Hydrology and Water Quality
- 3.12 Land Use and Planning
- 3.13 Population and Employment
- 3.14 Tribal Cultural Resources
- 3.15 Utilities, Service Systems, and Energy

Based on the NOP and Initial Study and the associated scoping process for this Draft EIR as described in Chapter 1 Introduction and Project Background, it was determined that several environmental topics would not be affected by implementation of the proposed project (see Appendix A, Public Participation Process, to this Draft EIR). Therefore, further evaluation of the following environmental topics are not required within this Draft EIR: Forestry Resources; Mineral Resources; Noise; Housing; Public Services; Recreation; and Transportation and Traffic. Please refer to Appendix A for the complete analysis of these topics for which the impact conclusion is “Less than Significant Impact” or “No Impact.”

For the 13 environmental topics included in this Chapter 3, each section includes a description of the environmental setting, regulatory framework, and impact analysis and mitigation measures, which includes the significance criteria, the methodology, and an impact summary, as further described below.

3.1.1 Environmental Setting

In accordance with CEQA Guidelines Section 15125(a), the environmental setting contains a description of the regional and local physical environmental conditions on the project site and in

the project vicinity at the time of the publication of the NOP. This environmental setting constitutes the existing or baseline physical conditions against which the implementation of the proposed project is assessed in order to determine whether an environmental impact would occur (CEQA Guidelines Section 15126.2(a)).

3.1.2 Regulatory Framework

Where the project site and/or surrounding area falls within the jurisdiction of federal, State, and local regulatory agencies, the proposed project would be subject to the laws, rules, regulations, and policies of those agencies. These regulations are intended to guide development, reduce adverse effects on sensitive resources, and/or offer general guidance on the protection of such resources. The regulatory framework section summarizes the applicable laws, rules, regulations, and policies for the proposed project. These laws, rules, regulations, and policies may also set the standards by which the potential impacts of the proposed project are evaluated.

3.1.3 Impact Analysis and Mitigation Measures

Significance Criteria

This section presents the significance criteria against which potential impacts are evaluated. As defined by CEQA Guidelines Section 15064.7(a), thresholds of significance are an identifiable quantitative, qualitative, or performance standard for the assessment of a particular environmental impact. Significance criteria are included for each environmental topic.

The Initial Study for the proposed project included the significance criteria for each environmental topic based on the CEQA Guidelines Appendix G Environmental Checklist (see Appendix A, Public Participation Process). The Initial Study identified the significance criteria that would be carried forward into this Draft EIR. These significance criteria have been further refined and specifically tailored to the proposed project and project site location based on federal, State, regional, and local Kern County plans and ordinances, as well as information gathered during the NOP scoping process. In addition, since the publication of the NOP and Initial Study, the CEQA Guidelines Appendix G Environmental Checklist was revised by the State Office of Planning and Research on December 28, 2018. This Draft EIR includes any revisions to the Appendix G Environmental Checklist that are related to the definition of significance criteria for the environmental topics analyzed.

Impact Analysis

This section provides an analysis of the potential environmental impacts that could result from implementation of the proposed project. This Draft EIR addresses the direct, indirect, and cumulative impacts associated with implementation of the proposed project, including short-term and long-term impacts.

The level of significance for each environmental impact examined in this Draft EIR has been determined by considering the predicted magnitude of the impact in relation to baseline environmental setting and the applicable regulatory requirements, measured against the

significance criteria. Based on the significance criteria, the significance of each potential environmental impact is determined according to the following categories:

No impact: A no impact determination would occur if the proposed project would not result in a substantive change to the environmental topic that is being evaluated.

Less than significant impact: CEQA Section 21068 defines a significant impact as "a substantial, or potentially substantial, adverse change in the environment." The Environmental Checklist included as Appendix G of the CEQA Guidelines provides additional guidance for determining which impacts would be regarded as significant. This Draft EIR applies the thresholds contained within Appendix G of the CEQA Guidelines and uses the CEQA definition of "significant impact." Therefore, a less than significant impact determination occurs if the proposed project would not result in a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the proposed project, including land, air, water, flora, fauna, and objects of historic or aesthetic significance (see CEQA Guidelines Section 15382). In addition, an economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant. Impacts determined to be less than significant do not require mitigation measures.

Potentially significant impact: A potentially significant impact determination occurs if the proposed project could result in a substantial or potentially substantial, adverse change in the physical conditions of the environmental topic being evaluated. If such a determination is made, mitigation measures or alternatives must be considered if they would avoid or substantially reduce the significant impact. Feasible mitigation measures are then adopted to avoid or substantially reduce the significant impact. The level of significance with the mitigation measure is evaluated and can result in a determination that is **less than significant with mitigation** or **significant and unavoidable**.

A significant and unavoidable impact is a substantial adverse effect on the environment that cannot be mitigated to a less than significant level, either because with mitigation it is still a significant impact or there is no feasible mitigation. A project with significant and unavoidable impacts could still proceed, but the lead agency would be required to prepare a statement of overriding considerations, pursuant to CEQA Guidelines Section 15093, explaining why the lead agency would proceed with the project in spite of the potential for a significant environmental impact.

Mitigation Measures

Mitigation measures are recommended for any identified potential significant impacts as a result of the proposed project. The significance determination provides the level of significance after the implementation of recommended mitigation measures, if applicable.

3.1.4 References

References used for the analysis of each environmental topic addressed in this Draft EIR are included at the end of each section.

3.2 Cumulative Impacts Methodology

As indicated above, in addition to direct and indirect impacts associated with implementation of the proposed project as described in Chapter 2 Project Description, this Draft EIR also includes an assessment of cumulative impacts for each environmental topic further below in this Chapter 3. The cumulative effects of implementing the proposed project in combination with other past, present, and reasonably foreseeable future projects within and around the project site as well as in the region are considered. The analysis of cumulative impacts considers whether other projects could cause related environmental impacts similar to the environmental impacts anticipated to occur due to the proposed project.

CEQA Guidelines Section 15130 requires that an EIR shall discuss cumulative impacts of a project when the project's incremental effect is "cumulatively considerable." "Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" [CEQA Guidelines, Section 15355; see also Public Resources Code, Section 21083(b)]. Stated another way, "a cumulative impact consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts" [CEQA Guidelines, Section 15130(a)(1)]. The definition of cumulatively considerable is provided in Section 15065(a)(3):

> *Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.*

According to Section 15130(b) of the CEQA Guidelines:

> *[t]he discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.*

For the purposes of this Draft EIR, the proposed project would contribute to a cumulatively considerable and, therefore, significant cumulative impact if:

- The cumulative effects of other past, current, and probable future projects without the proposed project are not significant and the proposed project's incremental impact is substantial enough, when added to the cumulative effects, to result in a significant impact.
- The cumulative effects of other past, current, and probable future projects without the proposed project are already significant and the proposed project would result in a cumulatively considerable contribution to the already significant effect. The standards used to determine whether the contribution is cumulatively considerable include the existing baseline environmental conditions and whether the proposed project would cause a substantial increase in impacts or otherwise exceed an established threshold of significance.

3.2.1 Geographic Scope of Cumulative Impacts

The geographic area affected by the proposed project and the proposed project's potential to contribute to cumulative impacts varies based on the environmental topic being analyzed. Generally, the geographic area associated with the environmental effects of the proposed project, as described further below in this Chapter 3, define the boundaries of the area used for compiling the list of past, present, and reasonably foreseeable future related projects considered in the cumulative impact analysis. Table 3-1 presents the geographic areas analyzed to determine if the proposed project's contribution to a particular impact would be cumulatively considerable and, therefore, significant.

3.2.2 Temporal Scope of Cumulative Impacts

Within the geographic scope identified in Table 3-1, cumulative projects considered in this analysis include those that have recently been completed, are currently under construction, or are reasonably foreseeable. A project's schedule is relevant to the consideration of cumulative short-term construction-related impacts and long-term operational impacts. For future cumulative projects, implementation schedules are often broadly estimated and can be subject to change. However, for purposes of evaluating both short-term and long-term cumulative impacts of the proposed project, this analysis assumes future cumulative projects would be implemented concurrently with the proposed project, over a period of up to 3 years, or approximately 2020 through 2023.

TABLE 3-1
GEOGRAPHIC SCOPE OF CUMULATIVE IMPACTS ANALYSIS

Environmental Topic	Geographic Scope
Aesthetics	Views of surrounding hillsides within the Kern River Valley, views of the adjacent South Fork of the Kern River and associated biological resources, and foreground views of the on-site project features.
Agriculture	Kern River Valley and San Joaquin Valley
Air Quality	Mojave Desert Air Basin
Biological Resources	Kern River Valley, and for specific species, the San Joaquin Valley
Cultural Resources	Kern River Valley
Geology and Soils	Kern River Valley
Greenhouse Gas Emissions	Globally
Hazards and Hazardous Materials	Kern River Valley
Hydrology and Water Quality	South Fork Kern Watershed area within the Hydrological Study Area, Isabella Reservoir, and the Kern River from the Isabella Dam downstream to the RRBWSD recharge ponds in the service area.
Land Use and Planning	Kern River Valley
Population and Employment	Kern River Valley
Tribal Cultural Resources	Kern River Valley and surrounding areas as manifested through tribal resources
Utilities, Service Systems, and Energy	Kern River Valley for utilities and services systems; the State of California for energy

3.2.3 Method of Analysis

CEQA Guidelines Section 15130 provides that the following approaches can be used to adequately address cumulative impacts:

- Regional Growth Projections Method — A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area wide conditions contributing to the cumulative impact. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency.
- List Method — A list of past, present, and reasonably foreseeable future projects similar in nature and/or producing related or cumulative impacts, including, if necessary, those projects outside the control of the lead agency.

For this Draft EIR, the list method was used primarily. Consistent with CEQA, a two-step approach was used to analyze cumulative impacts. The first step was to determine whether the combined effects from the proposed project and related projects would be cumulatively significant. This was done by adding the proposed project's incremental impact to the anticipated impacts of other reasonably foreseeable projects. Where the combined effect of the projects was determined to result in a significant cumulative effect, the second step was to evaluate whether the proposed project's incremental contribution to the combined significant cumulative impact would be cumulatively considerable, as required by CEQA Guidelines Section 15130(a).

CEQA Guidelines Section 15064(h)(4) states that:

> *"[t]he mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable."*

Therefore, it is not necessarily true that, even where cumulative impacts are significant, any level of incremental contribution must be deemed cumulatively considerable by the lead agency. If the proposed project's individual impact is less than significant, however, its contribution to a significant cumulative impact could also be deemed cumulatively considerable, depending on the nature of the impact and the existing environmental setting. If, for example, a project is located in an air basin determined to be in extreme or severe nonattainment for a particular criteria pollutant, a project's relatively small contribution of the same pollutant could be found to be cumulatively considerable. Thus, depending on the circumstances, an impact that is less than significant when considered individually may still be cumulatively considerable in light of the impact caused by all projects considered in the analysis.

3.2.4 List of Related Projects

Cumulative effects could result when considering the effects of the proposed project in combination with the effects of other related projects in the area. For this Draft EIR analysis, other past, present, and reasonably foreseeable future related projects have been identified. Table 3-2 lists projects in the proposed project that are included in the analysis of cumulative impacts. Figure 3-1 graphically displays the location of the cumulative projects.

TABLE 3-2
RELATED PROJECTS FOR CUMULATIVE ANALYSIS

Project No.	Lead Agency	Name	Location	Project Type	Project Description	Status
Kern River Valley Projects						
A	U.S. Army Corps of Engineers (USACE)	Isabella Lake Dam Safety Modification Project	Isabella Reservoir	Dam Support	Bolster existing dam structure and facilities to ensure dam stability.	Under construction with completion expected in 2022[A]
B	California Department of Fish and Wildlife (CDFW)	Tricolored Blackbird Voluntary Local Program	San Joaquin Valley, specifically on ranching and farming operations where Tricolored Blackbirds may nest on specific types of grain fields.	Voluntary Local Program (VLP)	The VLP conveys authorization for taking of tricolored blackbirds, a species listed under CESA incidental to famers' and ranchers' voluntary participation in the VLP.	Notice of Exemption (NOE) filed April 10, 2019[B]
C	Kern River Ranger District, Sequoia National Forest, U.S. Department of Agriculture (USDA)	Taylor/Long Grazing Project; Upper Taylor Meadow Gully Repair Project	Kern Plateau near Domeland Wilderness, Sequoia National Forest; Taylor Meadow along Taylor Creek (tributary to South Fork of the Kern River).	Watershed Improvements and Land Resource Management	The Taylor/Long Grazing Project would reauthorize grazing on Taylor Meadow and Long Meadow. The Upper Taylor Meadow Gully Repair Project would improve hydrologic function, improve conditions so overbank flows can access the entire meadow, and enhance meadow vegetative and aquatic species while maintaining existing land uses.	Decision to implement Upper Taylor Meadow Gully Repair Project made July 2018. Final Decisions and Finding of No Significant Impact (FONSI) for Taylor/Long Grazing Project filed November 2019[C]
D	Kern County Local Agency Formation Commission (LAFCO)	Weldon Regional Water District	Unincorporated Kern County; Weldon, CA	Water District Formation	The Weldon Regional Water District would consolidate the following five existing community water systems into one regional water district: Long Canyon Water Company, Tradewinds Water Association, Bella Vista Mutual Water Company, Lake Isabella KOA, and Rainbird Valley Mutual Water Company.	Mitigated Negative Declaration published March 2020[D] LAFCO Protest Hearing scheduled for May 26, 2020

TABLE 3-2 (CONTINUED)
RELATED PROJECTS FOR CUMULATIVE ANALYSIS

Project No.	Lead Agency	Name	Location	Project Type	Project Description	Status
Water Projects						
E	Kern Water Bank Authority (KWBA)	Conservation and Storage Project	The KWB is located at the downstream reach of the Kern River. The project is bounded by Stockdale Highway to the north, State Route 119 to the south, and is bisected by Interstate Highway 5.	Groundwater Banking of Kern River Water	The project would directly divert up to 500,000 AF of water per year from the Kern River for recharge and storage within the KWB through existing diversion works and recharge facilities located on the KWB lands, and/or to deliver water directly to KWBA's participating members' service areas via the KWB Canal or Cross Valley Canal (CVC).	Final EIR completed November 2018 [E] Water Rights Application 31676 is pending before SWRCB.
F	City of Bakersfield	Kern River Flow and Municipal Water Project	Multiple locations in and around Bakersfield	Increase Kern River Flow Project	The project would allow substantial amounts of water to flow in the Kern River channel to protect, increase, and enhance the City's water supply. The source of water would be water accruing to the City's pre-1914 appropriative water rights, and additional unappropriated surplus Kern River water.	The EIR was certified and a Notice of Determination (NOD) was issued in in November 2016;[F] Water Rights Application 31674 is pending before SWRCB.
G	City of Bakersfield	James Groundwater Storage and Recovery Project	Bakersfield, CA	Groundwater Banking and Recovery	Construction and operation of shallow recharge ponds totaling ~1,400 acres, water conveyance facilities, and up to 14 groundwater wells and well pumping plants to store water and pump it in times of surplus.	Notice of Preparation (NOP) was released on May 4, 2012[G]
H	Kern Delta Water District	Water Allocation Plan	Unincorporated Kern County; Bakersfield, CA	Groundwater Banking of Kern River Water	Variation of historic Kern River water diversion and release practices by diverting an average 33,000 acre-feet per year from the Kern River that historically have been released to junior water rights holders, including the North Kern Water Storage District and the City of Bakersfield.	Final Supplemental EIR was certified and a NOD was issued in December 2017[H]
I	Kern Fan Authority	Kern Fan Authority Integration Project	Unincorporated Kern County; Bakersfield, CA	Groundwater Banking and Recovery	Reciprocal use of existing groundwater banking and recovery facilities and infrastructure among four districts: RRBWSD; Kern Delta Water District, Henry Miller Water District, and Buena Vista Water Storage District.	Negative Declaration adopted and NOD issued in January 2020[I]
J	Rosedale-Rio Bravo Water Storage District	Kern Fan Groundwater Storage Project	Unincorporated Kern County	Groundwater Banking of State Water Project water	Construction and operation of water conveyance facilities, including a new turnout along the California Aqueduct, as well as groundwater recharge and recovery facilities.	NOP released on April 9,2020[J]

TABLE 3-2 (CONTINUED)
RELATED PROJECTS FOR CUMULATIVE ANALYSIS

[A] https://www.spk.usace.army.mil/Missions/Civil-Works/Isabella-Dam/

[B] https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=165423&inline

[C] https://www.fs.usda.gov/project/?project=54308; https://www.fs.usda.gov/project/?project=40893

[D] https://ceqanet.opr.ca.gov/2020030561/2

[E] http://www.kwb.org/store/files/129.pdf

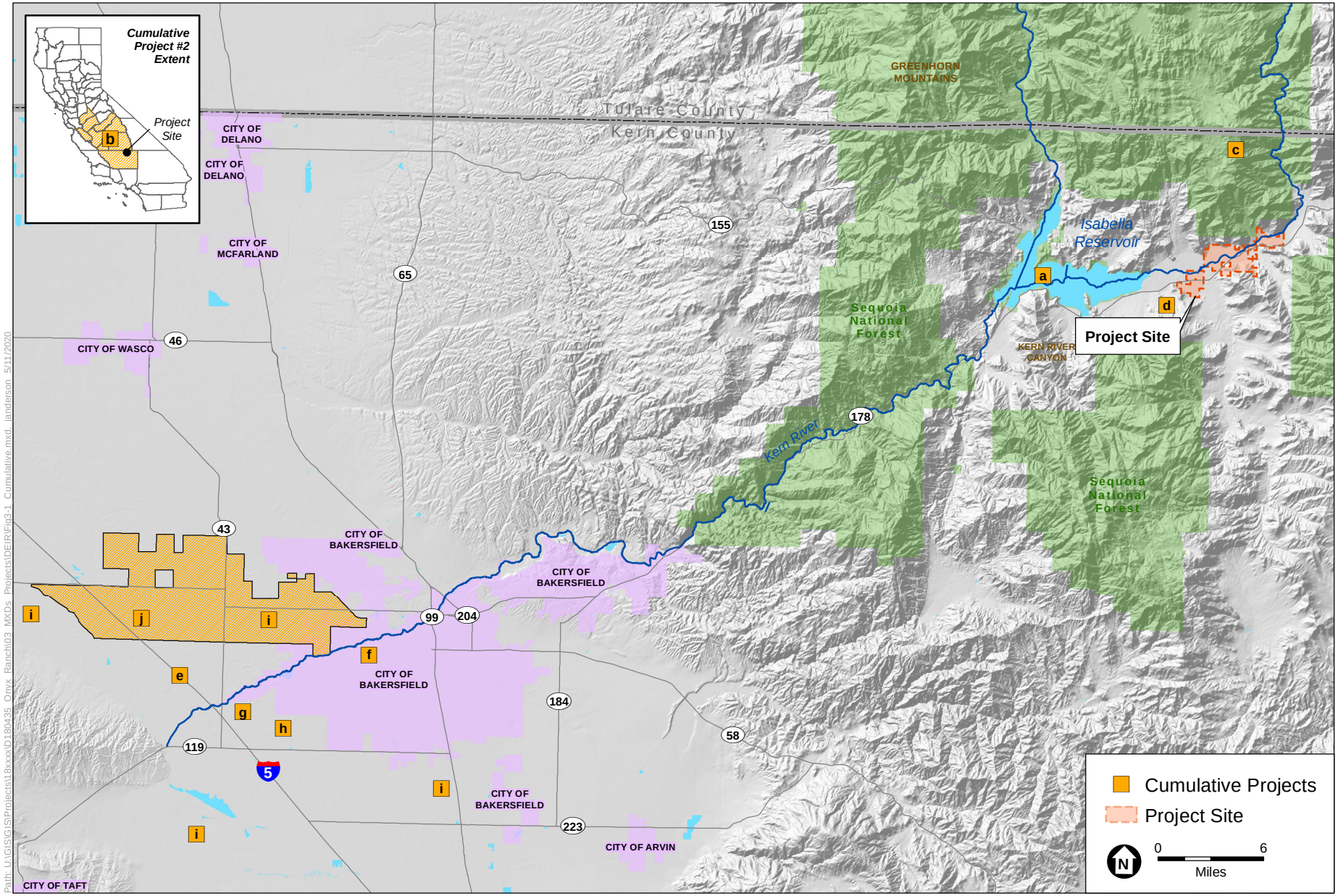
[F] https://ceqanet.opr.ca.gov/2011021042/6

[G] https://ceqanet.opr.ca.gov/2012051023

[H] https://ceqanet.opr.ca.gov/2011041082/6

[I] https://ceqanet.opr.ca.gov/2019109085/2; https://ceqanet.opr.ca.gov/2019109085/3

[J] https://ceqanet.opr.ca.gov/2020049019/2



SOURCE: ESRI; National Hydrography Dataset

Onyx Ranch South Fork Valley Water Project

Figure 3-1
Cumulative Projects

ESA

3.2.5 Cumulative Related Project Descriptions

USACE Isabella Lake Dam Safety Modification Project

The U.S. Army Corps of Engineers (USACE) is conducting seismic, hydrologic, and seepage-related modifications to the Isabella Lake Dam (Isabella Reservoir and Dam) located in Kern County near the community of Lake Isabella. A Record of Decision (ROD) was signed in 2012, after which the USACE conducted four years of engineering and design work. As part of the project, a United States Forest Service (USFS) warehouse/administrative building in Kernville and a USFS fire station in Lake Isabella were constructed in 2017. The remainder of the dam and spillway modifications are currently under construction, which USACE anticipates being completed in 2022 (USACE, 2019).

CDFW Tricolored Blackbird Voluntary Local Program

The California Department of Fish and Wildlife (CDFW) prepared a Voluntary Local Program (VLP) for the Tricolored Blackbird. Recognizing the unique and important role private landowners play in wildlife and habitat enhancement, the purpose of the Tricolored Blackbird VLP "is to encourage farmers and ranchers engaged in agricultural activities to establish locally designed programs to voluntarily enhance and maintain habitat for endangered and threatened species" (Cal. Code Regs., 14 Section 786.0, subd. (a).). The Tricolored Blackbird VLP will provide take authorization to the farmers and ranchers who enroll and implement management practices to delay harvest and allow tricolored blackbird colonies to complete their nesting and fledging cycle. The VLP will cover 8 counties located in California's San Joaquin Valley containing approximately 10,451,894 acres of agricultural grain crops. A Notice of Exemption (NOE) was filed by CDFW for the Tricolored Blackbird VLP on April 10, 2019 (CDFW, 2019).

USDA Forest Service Upper Taylor Meadow Gully Repair Project

The Taylor/Long Grazing Project is located on approximately 600 acres within the Kern River Ranger District of the Sequoia National Forest, Tulare County, California, in the southern portion of the Kern Plateau, near the Domeland Wilderness. The Taylor/Long Allotment consists of three fenced meadow pastures located primarily on 320 acres of private land acquired by the Forest Service between 1988 and 1991. Taylor/Long Allotment includes grazing areas along Taylor Creek, which is a tributary to the South Fork of the Kern River upstream of the proposed project. The proposed action for the Taylor/Long Grazing Project is to authorize continued livestock grazing within the Taylor/Long Allotment, while applying management prescriptions to ensure that objectives, standards, and guidelines of the Sequoia National Forest Land and Resources Management Plan (USDA, 1988), as amended by the Mediated Settlement Agreement (SQF-MSA) and the Sierra Nevada Forest Plan Amendment ROD (USDA, 2004), are met. A Decision Notice and Finding of No Significant Impact (FONSI) for the Taylor/Long Grazing Project was filed by the USDA Forest Service on November 4, 2019 (USDA, 2019).

In July 2018, the District Manager of the Kern River Ranger District of Sequoia National Forest decided to implement the Upper Taylor Meadow Gully Repair Project (Upper Taylor Meadow Project) on one of the three meadow pastures located within the Taylor/Long Allotment. The

Forest Service is implementing the Upper Taylor Meadow Project for watershed improvement in the Upper Taylor Meadow. The Upper Taylor Meadow Project would improve hydrologic function, improve conditions so overbank flows can access the entire meadow, and enhance meadow vegetative and aquatic species while maintaining existing land uses. Restoration treatment focuses on reconnecting the stream channel to its naturally evolved floodplain (USDA, 2018).

The Upper Taylor Meadow Project would provide the following ecosystem benefits: (1) increase the wetted areal extent of the meadow; (2) reduce peak flows and increase/extend summer base flows; (3) enhance aquatic and terrestrial habitat; (4) improve water quality; and (5) raise the local groundwater level within the meadow. A gully approximately 120 feet long, 4 feet wide, and 3 feet deep is causing a drop in groundwater elevation in the Upper Taylor Meadow. Moreover, flood flows that would normally flow over the surface as dispersed sheet flow, are being "pirated" by the gully and do not have access to the floodplain in this part of the meadow. Since montane meadows like the Upper Taylor Meadow serve a vital role as water storage and release systems, it is essential that the hydrologic function of Upper Taylor Meadow be restored so water storage is maximized, improving water quality and increasing annual water availability to riparian-aquatic systems. The Upper Taylor Meadow Project includes using bioengineering techniques to fill and eliminate the gully using weed-free biodegradable materials, plant various native riparian species throughout the restoration site, and enclose the gully repair site using electric fence to prevent damage from livestock (USDA, 2018). A Decision Memo for the Upper Taylor Meadow Project was filed in July 2018 and gully repair was implemented in 2019.

Weldon Regional Water District

Five small community water purveyors in the unincorporated community of Weldon in Kern County are proposing to form the Weldon Regional Water District (Water District) as a California Water District (California Water Code Section 34000 et seq.). The water purveyors that are consolidating to form this new Water District include Long Canyon Water Company, Tradewinds Water Association, Bella Vista Mutual Water Company, Lake Isabella KOA, and Rainbird Valley Mutual Water Company. These water purveyors supply water to about 929 customers, with about 436 service connections (Tom Dodson & Associates, 2020). Currently, each of the residential neighborhoods within the community of Weldon have their own independent water system and each of them use groundwater supply wells extracting water from the Kern River Valley Groundwater Basin as their sole source of water supply. The Weldon Regional Water District, when formed, would assume all water system services provided by existing water purveys that have agreed to consolidate the water supply under the proposed Water District.

In July 2019, a petition was submitted to the Kern County Local Agency Formation Commission (Kern LAFCO) for the formation of the proposed Water District. In March 2020, the Kern LAFCO published a Mitigated Negative Declaration analyzing the proposed Water District formation, sphere of influence boundaries, as well as implementation of new physical facilities including groundwater wells, pipelines, booster pump stations, storage tanks and reservoirs, and a new office.

The proposed Water District's initial service area boundaries comprised approximately 1,325.9 acres consisting of 611 agricultural, commercial, and residential parcels. The proposed service area is approximately 53 miles northeast of the City of Bakersfield, in and around the community of Weldon, within the Kern River Valley. The proposed Water District is generally located along SR 178, south of the South Fork of the Kern River, southeast of the Isabella Reservoir

Two parcels within the Onyx Ranch portion of the project site owned by the RRBWSD were proposed for inclusion in the proposed Water District's service area boundaries. The RRBWSD requested that LAFCO exclude those two parcels, totaling 45.96 acres, from the service area boundaries of the proposed Water District. At the formation hearing on April 29, 2020, the LAFCO Board approved RRBWSD's request and deleted the two parcels totaling 45.96 acres from the proposed Water District's acreage and service area boundaries.

The formation of the new District is still subject to a Protest Hearing scheduled for May 26, 2020.

Kern Water Bank Conservation and Storage Project

In September 2007, the Kern Water Bank Authority (KWBA), on behalf of five of its six member entities (Dudley Ridge Water District, Semitropic Water Storage District, Tejon–Castaic Water District, Westside Mutual Water Company, and Wheeler Ridge–Maricopa Water Storage District [the KWBA participating members]), filed a water right application (Application 31676) with the State Water Board to appropriate up to 500,000 acre-feet per year (AFY) of water from the Kern River to the Kern Water Bank (KWB) for irrigation, municipal and industrial (M&I) use, underground storage, and fish and wildlife habitat enhancement. In February 2010, the State Water Board issued an order removing the fully appropriated status for the Kern River, finding that Kern River floodwater that enters the California Aqueduct is available for appropriation (KWBA, 2018).

If the KWBA is granted water rights from its Application 31676, then the KWBA would implement the Conservation and Storage Project, diverting up to 500,000 AFY of Kern River floodwater in certain high water years when excess flood waters are available for recharge and storage using existing facilities within the Kern Water Bank. The water diverted would serve to provide greater certainty and reliability in multi-dry years for ongoing irrigation, municipal, and industrial uses that rely on the Kern Water Bank. The Final EIR for the Conservation and Storage Project was completed in November 2018 (SCH #2012021041) (KWBA, 2018). In June 2019, the State Water Resources Control Board, Division of Water Rights Permitting Program published an Application Status Tracker that indicated the KWBA Application 31676 is in the Initial Review stage (SWRCB, 2019).

City of Bakersfield Kern River Flow and Municipal Water Program

The City of Bakersfield's Kern River Flow and Municipal Water Program represents a continuation of the City's policies and prior efforts to protect and preserve the Kern River, consistent with past planning and implementation efforts. Previous Kern River-related planning processes focused mostly on land use practices and policies along the river. The Program instead focuses on providing more streamflow in the river channel through the acquisition of new water

supplies to support and enhance the municipal water supply. The Program would provide flows that maintain and enhance the river as an important resource for the community and the water supply for the City and region (City of Bakersfield, 2016).

In most years, there is little or no flow of water in the Kern River channel below the Calloway Weir. In order to implement the Program, the City would combine potentially unappropriated surplus water obtained by the City through its application to the SWRCB (Application 31674) with some portion of its current water supplies to provide a regular and more consistent flow of water in the Kern River channel. The Program aims to increase, protect, and preserve the City's municipal water supply to meet present and future demands for water. The Program is intended to support the City's stated goal to conserve, protect, and enhance the natural resources of the Kern River, while also providing important flood management and water supply needs. The EIR was certified and an NOD was issued in November 2016 (SCH# 2011021042) (City of Bakersfield, 2016). In June 2019, the State Water Resources Control Board, Division of Water Rights Permitting Program published an Application Status Tracker that indicated the City's Application 31674 is in the Initial Review stage (SWRCB, 2019).

James Groundwater Storage and Recovery Project

The James Groundwater Storage and Recovery Project is a proposed 2,070-acre project in southwest Bakersfield designed to recharge, store, and recover water to provide a cost-effective and reliable water supply for landowners within the RRBWSD and BVWSD. The project would help provide an affordable and reliable water supply to approximately 25,000 acres of irrigated agriculture and over 10,000 residents within the RRBWSD service area, and to the lands and landowners within the BVWSD (BVWSD and RRBWSD, 2012).

The project property, known as McAllister Ranch, was formerly a planned residential development that was in the early stages of construction. Due to the downturn in the real estate market and project financing issues, development was discontinued and the property sat idle for several years until it was sold in a bankruptcy proceeding. Rosedale and BVSD jointly purchase the property in 2011. The CEQA process is anticipated to begin in 2019 or later (BVWSD and RRBWSD, 2012).

Kern Delta Water District Water Allocation Plan

Kern Delta Water District (KDWD) developed the Kern River Water Allocation Plan (WAP) which identifies the equitable criteria that provide for economical and efficient distribution and use of water within the KDWD, according to the California Water Code. The Plan details KDWD's intentions to vary its historic Kern River water diversion and release practices. In addition to maintaining KDWD's water rights, the WAP is designed to meet existing and underserved demand in KDWD's service area, maintain sustainable groundwater resources, reduce the decline of groundwater levels, equitably distribute water among its historic service areas, and serve the growing water demands of its customers. No new facilities were proposed as a result of the WAP. The Final Supplemental EIR was certified and a NOD was issued in 2017

(SCH #2011041082) (Kern Delta Water District, 2017). Implementation of the WAP began in January 2018.

Kern Fan Authority Integration Project

The Kern Fan Authority (KFA) is comprised of Rosedale-Rio Bravo Water Storage District, Kern Delta Water District, Henry Miller Water District, and Buena Vista Water Storage District. The KFA member districts seek to integrate their various water management activities to achieve more efficient operations and flexible response capabilities. Over the last decade, the KFA member districts have developed various water management and groundwater banking programs, and each has its own water conveyance, recharge, extraction, and storage infrastructure. By integrating their respective water management activities, the KFA member districts will be able to maximize their ability to exchange, transfer, recharge, recover, and operate individual water management activities. This integration would create opportunities for the reciprocal use of facilities and infrastructure among the four districts and would not involve construction of any new facilities. In addition, this integration would be limited by the existing capacity and operational constraints of the individual programs of each agency.

RRBWSD Kern Fan Groundwater Storage Project

The RRBWSD, together with Irvine Ranch Water District (IRWD), is proposing to implement the Kern Fan Groundwater Storage Project to more effectively utilize available groundwater storage in the local Kern County Sub-basin of the San Joaquin Valley Groundwater Basin. The Project would develop a regional groundwater bank with associated water conveyance facilities in and around the RRBWSD service area in western Kern County. The Project would benefit water levels in the Kern County Sub-basin and help support groundwater sustainability. The Project would capture, convey, recharge, and store unallocated State Water Project Article 21 water and other water sources available during wet year conditions and extract water when needed to provide ecosystem, emergency supply, agricultural, municipal, and industrial water supply benefits. The Project would result in the construction and operation of water conveyance facilities, including a new turnout along the California Aqueduct, as well as groundwater recharge and recovery facilities. The Project would be integrated into and provide for the coordinated operation of facilities with the RRBWSD's existing Groundwater Recharge Project, as described in Section 1.2 Project Background of this Draft EIR. A portion of the water stored in the Project's groundwater bank would be for the State Department of Water Resources for use during dry years to provide ecosystem benefits in the Sacramento/San Joaquin Delta.

3.2.6 References

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3.3 Aesthetics

This section addresses the potential impacts related to aesthetic and visual resources associated with implementation of the proposed project. This section includes: a description of existing visual resources and aesthetic conditions on the project site; a summary of applicable regulations related to aesthetics; and an evaluation of the potential for the proposed project to result in environmental impacts related to aesthetic and visual resources on the project site and in the surrounding area. In addition, an evaluation of the potential cumulative impacts is provided.

The NOP and Initial Study prepared for the proposed project indicated that the Draft EIR would analyze the potential for significant impacts related to aesthetics if the proposed project would:

- Substantially degrade the existing visual character or quality of the project site and its surroundings.

The analysis of this potential impact is provided below in Section 3.3.3 Impact Analysis and Mitigation Measures.

The NOP and Initial Study determined that the proposed project would have no impact related to aesthetics for the following issues:

- Substantially damaging scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.
- Creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Therefore, these issues are not discussed further in this Draft EIR (see Section 3.1 Format of the Environmental Impact Analysis and Appendix A, Public Participation Process, for more information).

The NOP and Initial Study determined that the proposed project would have a less than significant impact related to aesthetics for the following issue and, therefore, would not be discussed in this Draft EIR:

- Have a substantial adverse effect on a scenic vista.

However, public comments related to this issue were received during the NOP public review period. As a result, this issue has been added to the scope of this Draft EIR. The analysis of this potential impact is provided below in Section 3.3.3 Impact Analysis and Mitigation Measures.

The CEQA Guidelines were revised on December 28, 2018, which resulted in minor revisions to questions in Appendix G Environmental Checklist about potential impacts related to the Aesthetics environmental topic. These changes are reflected in the thresholds of significance and the analyses of these potential impacts are provided below in Section 3.3.3 Impact Analysis and Mitigation Measures.

3.3.1 Environmental Setting

Location and Setting on the Project Site

The 4,109-acre project site is located in northeastern Kern County, in the Kern River Valley, within the South Fork Valley (see Figures 2-1 and 2-2 in Chapter 2 Project Description of this Draft EIR). The project site is located approximately 5 miles from the eastern boundary of the Isabella Reservoir and situated adjacent to and on either side of the South Fork of the Kern River.

The topography on the project site ranges from 2,640 to 3,320 feet above sea level. An aerial photograph in Figure 2-3 in Chapter 2 Project Description of this Draft EIR shows the existing conditions on the project site, including land uses, on and adjacent to the project site. The project site has a combination of: vacant areas with steep slopes and rocky terrain generally located along the outer portions of the project site; relatively level areas with agricultural fields, ditches, and limited development; and the riverbed and banks of the South Fork that traverses through the site. In addition, the project site has cottonwood/willow riparian habitat.

Figure 2-4 in Chapter 2 Project Description of this Draft EIR indicates the locations of the existing tracts, agricultural fields, and ditches on the project site and where the ditches originate or end off-site. Of the approximately 3,418 acres of land on the Onyx Ranch portion of the project site, approximately 2,269 acres are currently used for an agricultural purpose. The remainder of the Onyx Ranch, consisting of approximately 1,149 acres, is either developed or mountainous and, therefore, not suitable for agriculture. For the Smith Ranch portion of the project site, of the approximately 691 acres, approximately 308 acres are riparian pasture, 171 acres are mountainous areas, and approximately 242 acres are used for irrigated pasture purposes.

As indicated in Figure 2-3, in addition to SR 178 which traverses through the two parts of the project site, there are three developed areas on the project site: (1) the Onyx Ranch Headquarters located along the northern boundary of the project site; (2) the Onyx Store, adjacent single family residence, and sheds located along the southern side of SR 178, in the central-eastern portion of the project site; and (3) buildings associated with the Smith Ranch located in the eastern portion of the project site. A review of aerial photographs of the project site indicated that the structures on the Onyx Ranch were constructed prior to 1952 and little change to development has occurred on the project site since then (Kennedy/Jenks Consultants, 2008, pages 3-2 and 3-3).

The structures and supporting facilities that comprise the Onyx Ranch Headquarters include ranch-style residential structures, rows of cabins, barns, silos, storage sheds, water wells, corals, and a storage area for old equipment and debris. There are internal paved and dirt roads that are lined with trees in some places. Access is provided from SR 178 via Doyle Ranch Road that has a bridge over the South Fork of the Kern River. The Onyx Store, which was founded in 1861, continues to operate today. Adjacent to the Onyx Store is a single-family residence as well as storage sheds and a parking lot. Access to these structures is provided from SR 178. The proposed project does not involve any changes to the Onyx Ranch Headquarters or the Onyx Store.

The structures and facilities associated with the Smith Ranch include a residence, two barns, two corrals, a saddle house, storage sheds, associated outbuildings, and water wells. The proposed project does not involve any changes to these structures or facilities.

There are many scenic resources that contribute to the unique aesthetic conditions in the Kern River Valley including rolling hillsides, prominent ridgelines, canyons, rivers, Isabella Reservoir, diverse plant communities, historic landmarks, and the local community of Kernville (Kern County, 2011a; 2011b).

Aesthetic and Visual Resources

The project site is not formally designated as a scenic vista by the Kern County General Plan (Kern County, 2009; Kern County, 2011a; 2011b); however, local scenic viewsheds and resources occur within the project site and in the surrounding area that provide scenic quality. These scenic resources are identified in the Kern River Valley Specific Plan (KRVSP) and include the following: the eastern portion of the Kern River Valley; open pasture in the South Fork Valley, South Fork Valley ranch land, and the Cottage Grove Cemetery; SR 178 west of the community of Onyx; Fay Ranch Road at the bridge on the South Fork of the Kern River; Fay Ranch Road near the Southern Sierra Research Station; the A. Brown Mill; the entrance to the Audubon's Kern River Preserve Headquarters; and Kelso Valley Road to the south of the project site. The locations of these local scenic viewsheds and resources are shown in Figure 3.3-1, relative to the project site. The Kern River Valley Specific Plan includes photographs of the environmental conditions for each scenic viewshed/resource, taken in 2009 and 2010. The photographs are still representative of current conditions and are included in Figure 3.3-2, Figure 3.3-3, and Figure 3.3-4. A description of each local scenic viewshed/resource and corresponding photograph is included below (Kern County, 2011a).

Local Scenic Viewshed 1: Eastern Portion of KRVSP Area – This viewshed is experienced by travelers on SR 178 as they enter the project site from the east. This viewshed shows the dense cottonwood/willow and riparian forest habitat which occurs along the South Fork of the Kern River as it enters the South Fork Valley from the Sierra Nevada Mountains. Although not typically found elsewhere, this view shows that Joshua trees and cactus (which are part of the desert vegetation) occur in close proximity to the dense cottonwood/willow and riparian forest habitat (see Figure 3.3-2).

Local Scenic Viewshed 2: Open Pasture Land in South Fork Valley – This viewshed is experienced by travelers on SR 178 as they travel further west into the southern boundary of the project site. This viewshed, which shows the open pasture with grazing cattle in the mid-ground, depicts the ranching heritage of the project site and surrounding area (see Figure 3.3-2).

Local Scenic Viewshed 3: South Fork Valley Ranch Land – This view provides an example of open grazing land with old stands of trees that occurs near the South Fork of the Kern River on the project site. The Fay Canyon area is visible in the mid-ground of the view and the southern end of the Sierra Nevada Mountains serve as the backdrop (see Figure 3.3-2).

Local Scenic Viewshed 4: Cottage Grove Cemetery – This view shows the old Cottage Grove Cemetery located along SR 178, south of the project site. This cemetery is where many members of the founding families in the Kern River Valley are buried. The cemetery reflects the ranching heritage and rural characteristics of the area (see Figure 3.3-2).

Local Scenic Viewshed 5: SR 178 West of Onyx – This view is experienced by travelers on SR 178 west of the community of Onyx. With the old-growth trees, pasture, rocky hills, and old wooden fence posts, travelers along this portion of SR 178 can get the sense of the ranching history and rural character which is prevalent in the Kern River Valley (see Figure 3.3-3).

Local Scenic Viewshed 6: Fay Ranch Road at the Bridge on the South Fork of the Kern River – This view shows the bridge on Fay Ranch Road which provides access from SR 178 to the Fay Canyon area. During the spring when runoff occurs from the melting snowpack, water often over-tops this bridge and the roadway north and south of the bridge. As a result, there is often silt, dead vegetation, and debris visible on and adjacent to the roadway (see Figure 3.3-3).

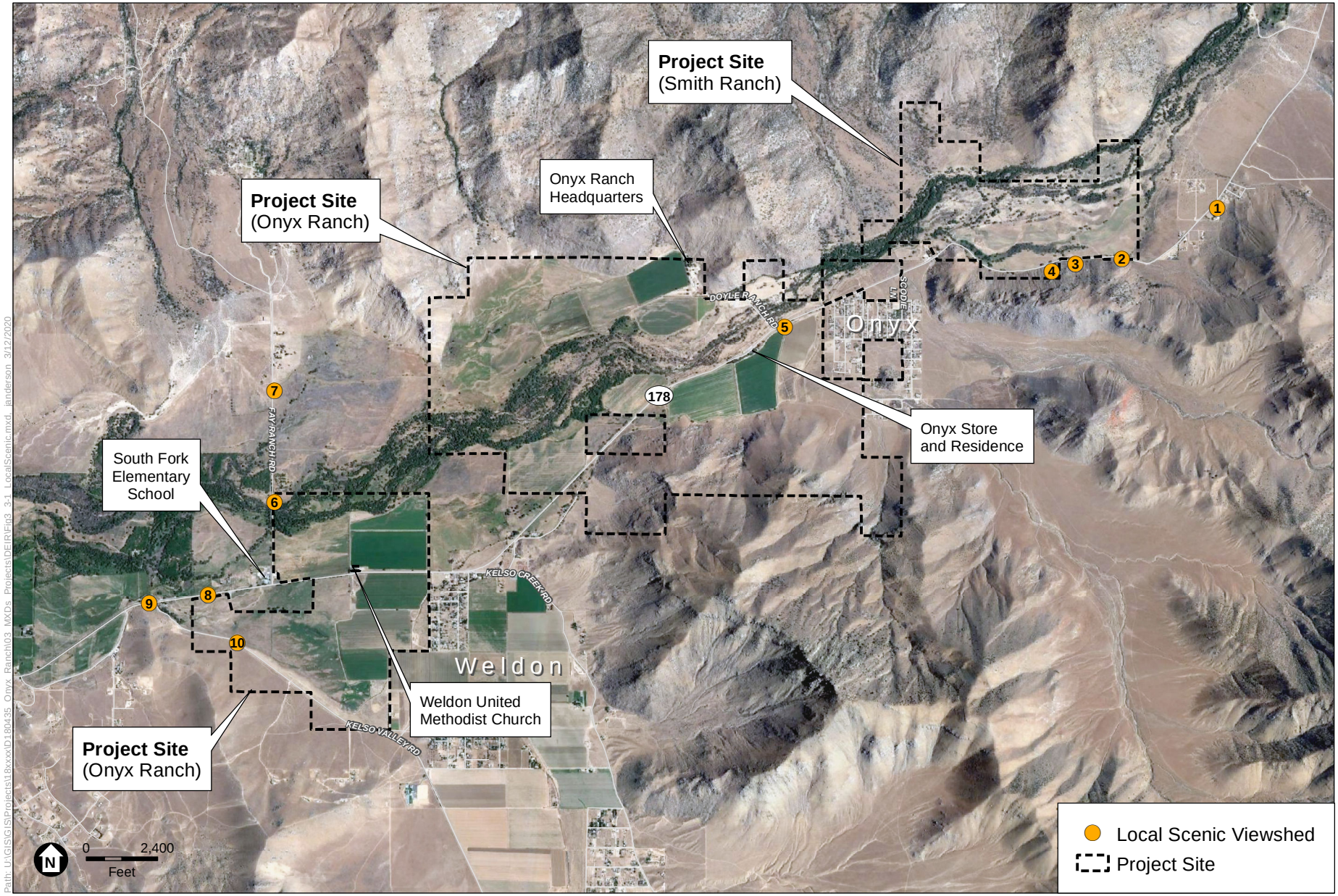
Local Scenic Viewshed 7: Fay Ranch Road near the Southern Sierra Research Station – This viewshed shows Fay Ranch Road near the Southern Sierra Research Station (which is a non-profit biological resource research center) located to the north of the project site. At this location, Fay Ranch Road is a two-lane paved County-owned local roadway along which aboveground utilities are located. In this view, which is looking south, primarily agricultural activities occur to the east of Fay Ranch Road, while the majority of the land to the west is part of the Kern River Preserve. The background of the view shows the dense cottonwood and riparian forest habitat along the South Fork of the Kern River with the Piute Mountains serving as the backdrop (see Figure 3.3-3).

Local Scenic Viewshed 8: A. Brown Mill – This viewshed shows the old historic A. Brown Mill located on the Audubon's Kern River Preserve located to the west of the project site. It is one of the most photographed and recognized historic structures in the Kern River Valley. This historic building reflects the rural character along with the biological resources within the Kern River Preserve (see Figure 3.3-3).

Local Scenic Viewshed 9: Entrance to the Audubon's Kern River Preserve Headquarters – This view shows the visitor's entrance to the Audubon's Kern River Preserve Headquarters located to the west of the project site. The view contains dense vegetation, pipe and wire fencing, and a cattle guard at the visitor's entrance. The cattle guard at the entry keeps the cattle grazing on the adjacent pasture from entering the Preserve property (see Figure 3.3-4).

Local Scenic Viewshed 10: Kelso Valley Road – This view shows Kelso Valley Road heading to the south in the southeastern portion of the project site south of where it intersects with SR 178. At this location, Kelso Valley Road is a two-lane paved County-owned local roadway and is the primary access route to South Fork Middle School located to the south of the project site. Many students who attend the South Fork Middle School and live near the school as well as recreationalists ride bicycles along this portion of Kelso Valley Road. However, the road has no shoulders suitable for use by bicycle riders. The open land on the right side of the view, which is used as grazing and ranch land, has a high groundwater area which supports wetland vegetation. The high groundwater in the area creates ongoing road maintenance problems for the County Roads Department, which affects the safety and the visual quality of the road (see Figure 3.3-4).

To show the visual quality and resources on the project site, representative photos of existing conditions of the project site were taken by ESA in July and August 2018 and May 2019. These photos are provided in Figure 3.3-5 and Figure 3.3-6.



Path: U:\GIS\GIS\Projects\18xxxx\D180435_Onyx_Ranch\03_MXDs_Projects\DEIR\Fig3_3-1_LocalScenic.mxd, landerson, 3/12/2020

SOURCE: Google Earth, 2018; Rosedale-Rio Bravo Water Storage District; County of Kern, 2011

Onyx Ranch South Fork Valley Water Project

Figure 3.3-1
Local Scenic Viewsheds and Resources in the Project Area

ESA

1: Eastern portion of Specific Plan Area

2: Open pasture land in South Fork Valley

3: South Fork Valley ranch land

4: Cottage Grove Cemetery

D180435.00

SOURCE: Kern River Valley Specific Plan, Environmental Impact Report, January 2011

Onyx Ranch South Fork Valley Water Project

Figure 3.3-2
Local Scenic Viewsheds 1, 2, 3, and 4

ESA

5: SR-178 west of Onyx

6: Fay Ranch Road at the bridge on the South Fork Kern River

7: Fay Ranch Road near the Southern Sierra Research Station

8: A. Brown Mill

D180435.00

SOURCE: Kern River Valley Specific Plan, Environmental Impact Report, January 2011

Onyx Ranch South Fork Valley Water Project

Figure 3.3-3
Local Scenic Viewsheds 5, 6, 7, and 8

ESA

9: Entrance to the Audubon's Kern River Preserve headquarters

10: Kelso Valley Road

D180435.00

SOURCE: Kern River Valley Specific Plan,
Environmental Impact Report, January 2011

Onyx Ranch South Fork Valley Water Project

Figure 3.3-4
Local Scenic Viewsheds 9 and 10

ESA

PHOTOGRAPH 1: Views of the Kern River from Sierra Way.

PHOTOGRAPH 2: A residential structure located at Onyx Ranch.

PHOTOGRAPH 3: A view of Landers Ditch and surrounding hillsides.

D180435.00

SOURCE: ESA, 2019

Onyx Ranch South Fork Valley Water Project

Figure 3.3-5
Existing Conditions Photographs 1, 2, and 3

ESA

PHOTOGRAPH 4: Another view of Landers Ditch looking North.

PHOTOGRAPH 5: An existing diversion structure (Nicoll Ditch) located on the Kern River.

PHOTOGRAPH 6: Mack Ditch downstream of Nicoll Ditch connection.

D180435.00

SOURCE: ESA, 2019

Onyx Ranch South Fork Valley Water Project

Figure 3.3-6
Existing Conditions Photographs 4, 5, and 6

ESA

Cumulative Setting

As discussed in Section 3.2 Cumulative Impacts Methodology, the geographic area addressed in the analysis of cumulative impacts varies depending on the environmental topic being analyzed. The geographic area for the analysis of the potential cumulative impacts of the proposed project and cumulative projects related to aesthetics includes views of surrounding hillsides within the Kern River Valley, views of the adjacent South Fork of the Kern River and associated biological resources, and foreground views immediately surrounding the project site. In rural areas, such as the vicinity of the proposed project, the texture of landscape features such as rock outcroppings, agricultural fields, the South and North Forks of the Kern River, as well as built elements may be noticeable and appear prominent depending on the vantage point. The project site is located within the South Fork Valley, which includes the communities of Onyx and Weldon, as well as the surrounding communities along the South Fork of the Kern River, agricultural and grazing lands, undeveloped areas, hillsides, and mountains.

3.3.2 Regulatory Framework

Local

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the KRVSP area, which was addressed in the KRVSP adopted by Kern County in 2011. The KRVSP consists of elements that include goals, policies, and implementation measures related to the aesthetic and visual resources within the Kern River Valley. The applicable elements and their goals, polices, and implementation measures are as follows:

Land Use Element

The Land Use Element discusses established and future development patterns within the Kern River Valley; sets forth goals, policies, and implementation measures to guide decision-making; and provides a land use plan to direct growth to desired areas where infrastructure and services can be provided while minimizing potential impact on natural resources. Regarding aesthetic and visual resources the Land Use Element identifies goals, policies, and implementation measures to maintain visual and aesthetic resources in the Kern River Valley. The applicable goal and policy are as follows:

General Land Use

Goal 2.1.3: Retain and enhance the scenic, quaint, and small town rural character of the individual communities within the Kern River Valley.

Policy 2.1.1: Preserve the characters of the Kern River Valley communities by encouraging land uses and development densities that are consistent with small-town rural character.

Open Space and Recreation Element

The Open Space and Recreation Element focuses on the enhancement of Open Space and Recreational facilities. Large open spaces support many uses that define the Kern River Valley's character, including cattle grazing, historic buildings, undeveloped hillsides, narrow roads, and starlit skies at nighttime. Protecting open space areas would conserve natural features necessary for access to a variety of outdoor recreation opportunities, preserve a diversity of plant and animal communities, protect endangered and other special status plant and animal species, and separate urban areas into distinct communities. This Element also addresses watershed management and natural ecosystems. The Open Space and Recreation Element identifies goals, policies, and implementation measures to maintain visual and aesthetic resources in the Kern River Valley Area. The applicable goal is as follows:

Open Space/ Watershed Management

Goal 4.1.3: Preserve open space areas as a visual and environmental resource, and to maintain the rural atmosphere of the Kern River Valley.

Conservation Element

The Conservation Element focuses on practices that can ensure the long-term survival of resources that Kern River Valley residents enjoy and cherish. The Conservation Element identifies goals, policies, and implementation measures to maintain resources in the Kern River Valley Area. The applicable goal and policies are as follows:

Scenic Resources

Goal 5.1.1: Preserve and protect scenic resources.

Policy 5.1.1: Preserve areas with scenic qualities and natural beauty.

Policy 5.1.3: Work with federal, State, regional, and other appropriate public agencies, non-profit organizations, and landowners to conserve, protect, and enhance natural resources in the Specific Plan Area.

Economic Development Element

The Economic Development focuses on practices that will ensure a healthy economy in the Kern River Valley that consists of diverse businesses, year-round tourism, an adequate employment pool, an increase in above minimum wage employment opportunities, and successful marketing of the image and identity of the area. The Economic Development Element identifies goals, policies, and implementation measures to maintain visual and aesthetic resources in the Kern River Valley Area. The applicable policy is as follows:

Community Image and Identity

Policy 8.2.5: Recognize the importance of the rural character, historic heritage, forests, recreation opportunities, and scenic wilderness areas to the economic viability of the Kern River Valley.

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009). The Land Use, Open Space, and Conservation Element of the General Plan provides for the conservation of Kern County's agricultural and natural resources (Kern County, 2009). There are no explicit goals, policies, or implementation measures in this Element that pertain to aesthetic resources that are applicable to the proposed project.

3.3.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to pages 3.3-1 and 3.3-2 above for a summary of the environmental issues included in this Draft EIR for the analysis of aesthetics. This Draft EIR assumes that the implementation of the proposed project would have a significant impact related to aesthetics if it would:

- Have a substantial adverse effect on a scenic vista.
- 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 points).

Methodology

This environmental analysis of the potential impacts related to aesthetics is based on the following information: the definition of the proposed project provided in Chapter 2 Project Description; a review of applicable documents (reports, photographs, maps, etc.); project site visits conducted by ESA staff in July and August of 2018 and May 2019; and agency regulatory requirements summarized above in Section 3.3.2. Additionally, the following factors were considered in the preparation of this analysis: the extent of project visibility from public viewing areas; the extent of change in the landscape's composition and character due to the proposed project; and the number and sensitivity of viewers. The environmental analysis of the potential effects of the proposed project related to aesthetic resources is discussed in the Impact Analysis provided below.

Impact Analysis

Scenic Vistas

Potential Impact AES-1: Would the proposed project have a substantial adverse effect on a scenic vista?

As described above in Section 3.3.1 Environmental Setting, the project site and surrounding area contain scenic resources important to the residents and visitors to the Kern River Valley, including local scenic viewsheds of the South Fork of the Kern River, the agricultural fields and ranching lands, and the surrounding local mountains and foothills (refer to Figure 3.3-1 through

Figure 3.3-4). Specific scenic resources on the project site, such as the agricultural fields and the pastures, ranching areas, and riparian vegetation along the South Fork of the Kern River contribute to the aesthetic quality of the South Fork Valley as well as the Kern River Valley (refer to Figure 3.3-5 and Figure 3.3-6).

The proposed project would reduce irrigation on the project site, resulting in the conversion of irrigated fields and pastures to non-irrigated fields and pastures or native vegetation. The proposed project would result in drier agricultural fields and pastures covered with vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle. When viewed from publicly-accessible locations such as the local scenic viewshed points shown in Figure 3.3-1, the changes to the project site would not cause local scenic viewsheds to appear visually different from the existing conditions. The proposed project would allow surface water flows diverted to the project site in existing conditions to remain in the South Fork of the Kern River below the diversion points associated with the Onyx Ranch and the Smith Ranch, where it would continue to support existing vegetation. There would be no noticeable change to the existing conditions along the South Fork of the Kern River when viewed from publically-accessible locations such as SR 178, Fay Ranch Road, Kelso Valley Road, and Doyle Ranch Road. The implementation of the proposed project would not have a substantial adverse effect on a scenic vista or cause the local scenic publically-accessible viewsheds of the South Fork Valley, the South Fork of the Kern River, or the Kern River Valley to appear visually different than the existing conditions. Therefore, a less than significant impact would occur.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- Implementation of the proposed project would not have a substantial adverse effect on a scenic vista or cause the local scenic publically-accessible viewsheds of the South Fork Valley, the South Fork of the Kern River, or Kern River Valley to appear visually different than the existing conditions. Therefore, a less than significant impact would occur.

Visual Character

Potential Impact AES-2: Would the proposed project (located in a non-urbanized area) 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 points.)

As described above in Potential Impact AES-1, the project site and surrounding area contain scenic resources including local scenic viewsheds (refer to Figure 3.3-1 through Figure 3.3-4). Specific scenic resources on the project site, such as the agricultural fields and the pastures,

ranching areas, and riparian vegetation along the South Fork of the Kern River contribute to the visual quality of the South Fork Valley as well as the Kern River Valley (refer to Figure 3.3-5 and Figure 3.3-6). Agricultural and pastoral fields are considered important visual/scenic resources in the South Fork Valley. According to Kern County and the KRVSP, undeveloped rural land, open areas, and native vegetation are all considered scenic or aesthetically pleasing.

Due to irrigation in the existing condition, the project site is typically covered with vegetation that typically appears green from February to October. The proposed project would reduce irrigation on the project site, resulting in the conversion of irrigated fields and pastures to non-irrigated fields and pastures or native vegetation. The proposed project would result in drier agricultural fields and pastures covered with vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle. With implementation of the proposed project, the non-irrigated fields would appear green during fewer months of the year as crops would be replaced with pasture or native vegetation.

Although the visual character of the project site may be altered with implementation of the proposed project, the non-irrigated agricultural fields and pastures would remain vegetated as pastures and grazing land. The changes to the existing visual character of the project site would be consistent with typical changes that occur to agricultural lands as a result of fallowing, crop rotation, and cattle grazing. Implementation of the proposed project would not substantially degrade the existing visual character or quality of the public views of the project site and its surrounding areas. Therefore, a less than significant impact would occur.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- With implementation of the proposed project, the project site would transition from irrigated fields and pastures to non-irrigated fields and pastures or native vegetation and would result in drier agricultural fields and pastures covered with vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle. However, the proposed project would not substantially degrade the existing visual character or quality of public views of the project site and its surroundings. Therefore, a less than significant impact would occur.

Potential Cumulative Impacts

As described above, implementation of the proposed project would not adversely impact a scenic vista and would not substantially degrade the visual character of the project site and surrounding areas. Therefore, the proposed project's impacts would be less than significant.

The timeframes during which the proposed project could contribute to cumulative impacts related to aesthetics include the implementation and operational phases. For the proposed project, the operational phase would be permanent. The impacts related to aesthetics could be cumulative if adverse visual changes as a result of the proposed project and the cumulative projects occurred at the same time and overlapped geographically. The cumulative projects to be considered in the analysis of cumulative impacts are listed in Table 3-1 and shown in Figure 3-1. Only Cumulative Project D, Weldon Regional Water District, would overlap geographically with the proposed project and would potentially occur at the same time. The formation of the new Water District would result in the implementation of new physical facilities such as groundwater wells, booster pump stations, storage tanks, and a new office in and around the community of Weldon, primarily west of the Onyx Ranch project site. The Weldon Regional Water System Improvement Project MND concludes that there would be less than significant impacts to scenic vistas, scenic resources, and visual character due to the formation of the proposed Water District and implementation of new facilities (Tom Dodson & Associates, 2020). Therefore, when considered together with Cumulative Project D, the proposed project would not result in cumulatively considerable impacts to aesthetics. Furthermore, Cumulative Project C, Upper Taylor Meadow Gully Repair Project, would positively affect the surrounding ecosystem by increasing wetted areas and enhancing aquatic and terrestrial habitats, which would aid in preserving the rural nature of the Kern River Valley and conserving natural features that are considered scenic resources. Therefore, the proposed project, when considered together with cumulative projects, would not result in significant cumulative impacts to aesthetic resources.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- With implementation of the proposed project, the resultant non-irrigated agricultural fields, pastures, grazing areas, and native vegetation on the project site would not alter local scenic viewsheds from publically-accessible viewing locations or substantially degrade the existing visual character of the project site. Therefore, the proposed project, when considered together with cumulative projects, would not result in significant cumulative impacts to aesthetic resources.

3.3.4 References

Kennedy/Jenks Consultants, 2008. Phase I Environmental Site Assessment and Limited Phase II Soil Investigation Kelso Valley Wind, Kern County, California, September 29, 2008.

Kern County, 2009. Kern County General Plan, Chapter 1, Land Use, Open Space, and Conservation Element. Available online at: https://psbweb.co.kern.ca.us/planning/pdfs/kcgp/KCGPChp1LandUse.pdf, accessed August 2019.

Kern County, 2011a. Draft Environmental Impact Report for Kern River Valley Specific Plan, Volume I. January 2011.

Kern County, 2011b. Kern River Valley Specific Plan, Chapter 5 Conservation Element. January 2011.

3.4 Agriculture

This section addresses the potential impacts related to agricultural resources with implementation of the proposed project. This section includes: a description of existing agriculture conditions on the project site; a summary of applicable regulations related to agricultural resources; and an evaluation of the potential for the proposed project to result in environmental impacts related to agricultural resources on the project site and in the surrounding project area. In addition, an evaluation of the potential cumulative impacts is provided.

The NOP and Initial Study prepared for the proposed project indicated that the Draft EIR would analyze the potential for significant impacts related to agricultural resources if the proposed project would:

- 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 a non-agricultural use.
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.

The analysis of these potential impacts is provided below in Section 3.4.3 Impact Analysis and Mitigation Measures.

The NOP and Initial Study determined that the proposed project would have no impact related to agriculture and forestry resources for the following issues:

- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined in Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g)).
- Result in the loss of forest land or conversion of forest land to non-forest use.
- 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.

Therefore, these issues are not discussed further in this Draft EIR (see Section 3.1 Format of the Environmental Impact Analysis and Appendix A, Public Participation Process, for more information).

In addition, to be consistent with the CEQA environmental issues analyzed by Kern County, the significance criteria and scope of this Draft EIR has been modified to evaluate the potential impacts of the proposed project related to County agricultural preserves as follows:

- Result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 (Williamson Act) for any parcel of 100 acres or more (Section 15206(b)(3) Public Resources Code) or Farmland Security Zone Contract within an agricultural preserve approved by Kern County.

Public comments that were received during the NOP public review period resulted in no addition to the scope of the Draft EIR related to the analysis of agricultural resources.

3.4.1 Environmental Setting

Location and Setting on the Project Site

The 4,109-acre project site is located in northeastern Kern County, in the Kern River Valley, within the South Fork Valley (see Figures 2-1 and 2-2 in Chapter 2 Project Description of this Draft EIR). The project site is located approximately 5 miles east of the eastern boundary of the Isabella Reservoir and situated adjacent to and on either side of the South Fork of the Kern River.

The topography on the project site ranges from 2,640 to 3,320 feet above mean sea level (amsl). An aerial photograph in Figure 2-3 in Chapter 2 Project Description of this Draft EIR shows the existing conditions on the project site, including land uses on and adjacent to the project site. The project site has a combination of: vacant areas with steep slopes and rocky terrain generally located along the outer portions of the project site; relatively level areas with agricultural fields, ditches, and limited development; and the riverbed and banks of the South Fork of the Kern River that traverses through the site.

Since its settlement in the 1860s, the primary land use in the South Fork Valley has been irrigated agriculture and ranching (Crooker, 1930). Historical water supply for the irrigation of crops on the project site has been accomplished through a system of unlined ditches that divert surface water from the South Fork of the Kern River to the ditches. Existing crop irrigation is also supplemented with groundwater pumped from production wells[1] on the project site. Figure 2-4 in Chapter 2 Project Description of this Draft EIR indicates the locations of the existing tracts, agricultural fields, and ditches on the project site and where the ditches originate or end off-site. Of the approximately 3,418 acres of land on the Onyx Ranch portion of the project site, approximately 2,269 acres are currently used for an agricultural purpose, with the remainder of the Onyx Ranch, consisting of approximately 1,149 acres, either developed or mountainous and, therefore, not suitable for agriculture. Table 2-1 in Chapter 2 Project Description of this Draft EIR provides a summary of the crops that have been historically grown on the Onyx Ranch portion of the project site between 2009 and 2017. The crops include alfalfa, potatoes, oats, sudan grass, and irrigated pasture. These crops have been irrigated during their respective seasons by water from two sources: (1) surface water diverted from the South Fork of the Kern River and conveyed to the fields via earthen ditches; and (2) pumped groundwater when surface water is not available. For the Smith Ranch portion of the project site, of the approximately 691 acres, approximately 278 acres are riparian pasture, 171 acres are mountainous areas, and approximately 242 acres are used for irrigated pasture purposes. The riparian and irrigated pastures have been irrigated for at least the last twenty years. The Smith Ranch acreage is irrigated exclusively with surface water diverted from the South Fork of the Kern River and conveyed to the fields with earthen ditches.

As indicated in Figure 2-3, in addition to SR 178 which traverses through the two parts of the project site, there are three developed areas on the project site: (1) the Onyx Ranch Headquarters located along the northern boundary of the project site; (2) the Onyx Store, adjacent single family residence, and sheds located along the southern side of SR 178, in the central-eastern portion of

[1] A production well is a well from which water is recovered via extraction as opposed to monitoring wells that are used to determine the hydrologic characteristics of recharge and an aquifer.

the project site; and (3) buildings associated with the Smith Ranch located in the eastern portion of the project site. A review of aerial photographs of the project site indicated that the structures on the Onyx Ranch were constructed prior to 1952 (Kennedy/Jenks Consultants, 2008, page 3-2 and 3-3). Based on a site visit in 2019, it was concluded that little change to development has occurred on the project site since then.

The structures and supporting facilities that comprise the Onyx Ranch Headquarters include ranch-style residential structures, rows of cabins, barns, silos, storage sheds, water wells, corrals, and a storage area for old equipment and debris. There are internal paved and dirt roads that are lined with trees in some places. Access is provided from SR 178 via Doyle Ranch Road that has a bridge over the South Fork of the Kern River. The Onyx Store, which was founded in 1861, continues to operate today. Adjacent to the Onyx Store is a single-family residence as well as storage sheds and a parking lot. Access to these structures is provided from SR 178. The proposed project does not involve any changes to the Onyx Ranch Headquarters or the Onyx Store.

The structures and facilities associated with the Smith Ranch include a residence, two barns, two corrals, a saddle house, storage sheds, associated outbuildings, and water wells. The proposed project does not involve any changes to these structures or facilities.

Regional Agricultural Setting

Kern County has a long history of agricultural production and is a major contributor to the nation's food supply. Agriculture is a vital component of the character and rural lifestyle of much of the County. Due to the climate and quality of soils, Kern County is recognized as the top of the State's 57 agricultural counties in total value, followed by Tulare and Fresno County respectively (CDFA, 2018). The overall mix of agricultural crops within the County has evolved over the years, but according to the 2018 Kern County Agricultural Crop Report published in September 2019, the top three crops in 2018, based on commodity values as well as acreage, were grapes, almonds, and pistachios (Kern County, 2019a). This contrasts with the years 2000 through 2008, when the crops grown on the greatest number of acreage were alfalfa, oat, carrots, potato, and barley (Kern County, 2011a, Table 4.2-1). In 2018, permanent crops in Kern County occupied a total of 578,196 acres, an increase from 572,284 in 2017 (Kern County, 2019a). In addition to the top three crops, a wide variety of agricultural commodities were grown in Kern County in 2018, including but not limited to citrus, carrots, alfalfa, potatoes, cattle, milk, eggs, and various fruits and nuts (Kern County, 2019a). The Kern County Department of Agriculture and Measurement Standards collects data on annual permitted crop boundaries. Based on this data, in the Kern River Valley the crops grown in 2019 include alfalfa, barley, corn, oats, and industrial hemp (Kern County, 2019b).

Cattle ranching became the main economic activity in the Kern River Valley during the latter half of the 1870s (Kern County, 2011a). As of 2017, approximately 5 percent of the employed civilian population in the Kern River Valley work in the agriculture industry (see Table 3.13-7 in Chapter 3.13 Population and Employment of this Draft EIR). Agricultural uses and ranching still contribute both to the economy and to the area's history and heritage (Kern County, 2011a). Agricultural land adds to the quality of an "open" landscape within the Kern River Valley, helps to reinforce the

area's rural character, and highlights local historical and cultural values (Kern County, 2011a). According to the California Department of Conservation, there were 37,001 acres within the Kern River Valley area that were used for grazing in 2006 (Kern County, 2011a, Table 4.2-2).

On the Onyx Ranch, there are approximately 1,658 acres of irrigated fields and pastures. In addition to surface water, many of the fields receive supplemental water from agricultural wells, extending the irrigation season beyond what is available from surface water. As discussed above, the irrigated fields on the Onyx Ranch have been used for irrigated pasture, alfalfa, grain, potatoes and occasionally other crops (see Table 2-1 in Chapter 2 Project Description). Additionally, there are irrigated pastures that produce alfalfa for livestock feed. Upland and riparian pastures on the Onyx Ranch, while not irrigated, have also been used for cattle grazing.

On the Smith Ranch, there are approximately 242 acres of irrigated pastures with irrigation provided by surface water. There is no supplemental irrigation from agricultural wells. Historically and currently, the irrigated fields have been used as irrigated pasture for cattle production with no crops planted in the recent past. In the past decades, some fields may have been used for different crops in different years. Upland and riparian pastures on the Smith Ranch, while not irrigated, have been used for cattle grazing. Currently, water for livestock comes from surface water sources or a single trough with water from a domestic well at the corrals on the project site.

Farmland and Soils Classification

Soils Classification – California Revised Storie Index

The Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP) identifies lands that have agricultural value and maintains a statewide map of agricultural lands in its Important Farmlands Inventory (IFI) System (DOC, 2004). The IFI classifies land based upon its productive capabilities, which is based on many characteristics, including fertility, slope, texture, drainage, depth, salt content, and availability of water for irrigation. The State employs a variety of classification systems to determine the suitability of soils for agricultural use. The two most widely used systems are the Capability Classification System and the California Revised Storie Index. The Capability Classification System classifies soils from Class I to Class VIII based on their ability to support agriculture with Class I being the highest quality soil. The California Revised Storie Index is used mainly for irrigated agriculture and is based on crop productivity data. For the California Revised Storie Index, Grade 1 soils are considered "excellent," and Grade 2 soils are considered "good" (O'Geen et al., 2008).

Soils Classification on the Project Site

Figure 3.4-1 shows the soil types on the project site, including Grade 1 and Grade 2 soils. Table 3.4-1 lists the percentage of land within each irrigated field and pasture on the project site that is designated as Storie Index Grade 1 and Grade 2 soils. On the Onyx Ranch, approximately 303 acres are considered Grade 1 soils based on the California Revised Storie Index; these soils are productive agricultural soils characterized by fine sandy loam to loamy sand, indicating very well-drained soils with low water holding capacity. On the Smith Ranch, approximately 70 acres are considered Grade 1 soils; these soils are productive agricultural soils characterized by fine sandy loam, indicating very well-drained soils with low water holding capacity.

TABLE 3.4-1
SUMMARY OF AGRICULTURAL DESIGNATIONS FOR IRRIGATED FIELDS AND PASTURES ON ONYX RANCH AND SMITH RANCH

Tract	Irrigated Field	Acres(*)	FMMP Prime & Unique Farmland (percent of field)	Storie Index Grade 1 Soils (percent of field)	Storie Index Grade 2 Soils (percent of field)
Onyx Ranch, Landers I					
	Givney Pasture	312	<1%	0%	25%
	Landers 1	55	93%	87%	13%
	Landers 2	53	98%	<1%	99%
	Landers 3	54	97%	0%	99%
	Landers 4	33	0%	0%	99%
	Landers 5	19	0%	0%	57%
	Landers Sand 1 and 2	60	93%	76%	0%
	Total Landers I	586	36%	16%	40%
Onyx Ranch, Landers II					
	Mack Front	60	69%	2%	86%
	Mack Middle 1 and 2	65	99%	0%	97%
	Mack South	35	97%	0%	100%
	Mack Pasture	267	<1%	0%	60%
	Total Landers II	427	36%	<1%	74%
Onyx Ranch, Nicoll					
	Lieb	107	90%	0%	95%
	Nicoll North	45	91%	2%	98%
	Nicoll South	82	96%	0%	100%
	Boone	96	94%	0%	97%
	Hochman 1 and 2	46	2%	0%	100%
	Total Nicoll	376	81%	<1%	98%
Onyx Ranch, Scodie					
	Pruitt	44	88%	0%	99%
	Onyx West	83	95%	81%	19%
	Onyx East	71	86%	100%	0%
	China Garden	56	18%	100%	0%
	Triangle	15	0%	100%	0%
	Total Scodie	269	70%	78%	22%
	Total Onyx Ranch Fields	**1,658**	**53%**	**18%**	**59%**
Smith Ranch					
	Unnamed Smith Field 1	29	0%	<1%	100%
	Unnamed Smith Field 2	44	0%	0%	100%
	Unnamed Smith Field 3	22	0%	0%	100%
	Unnamed Smith Field 4	46	0%	7%	61%

TABLE 3.4-1 (CONTINUED)
SUMMARY OF AGRICULTURAL DESIGNATIONS FOR IRRIGATED FIELDS AND PASTURES ON ONYX RANCH AND SMITH RANCH

Tract	Irrigated Field	Acres(*)	FMMP Prime & Unique Farmland (percent of field)	Storie Index Grade 1 Soils (percent of field)	Storie Index Grade 2 Soils (percent of field)
	Unnamed Smith Field 5	22	0%	74%	26%
	Unnamed Smith Field 6	18	0%	36%	64%
	Unnamed Smith Field 7	8	0%	57%	34%
	Unnamed Smith Field 8	20	0%	100%	0%
	Unnamed Smith Field 9	34	0%	30%	0%
	Total Smith Ranch Fields	**242**	**0%**	**30%**	**59%**
Total Project Site		**1,900**	**45%**	**19%**	**60%**

Information on estimated productivity of the soils and potential natural vegetation can provide benchmarks for production after decreasing or eliminating irrigation and also can inform potential seed selection during implementation of transitions to non-irrigated pastures. Soils on the project site are predominately in five following soil map units (from NRCS, 2018):

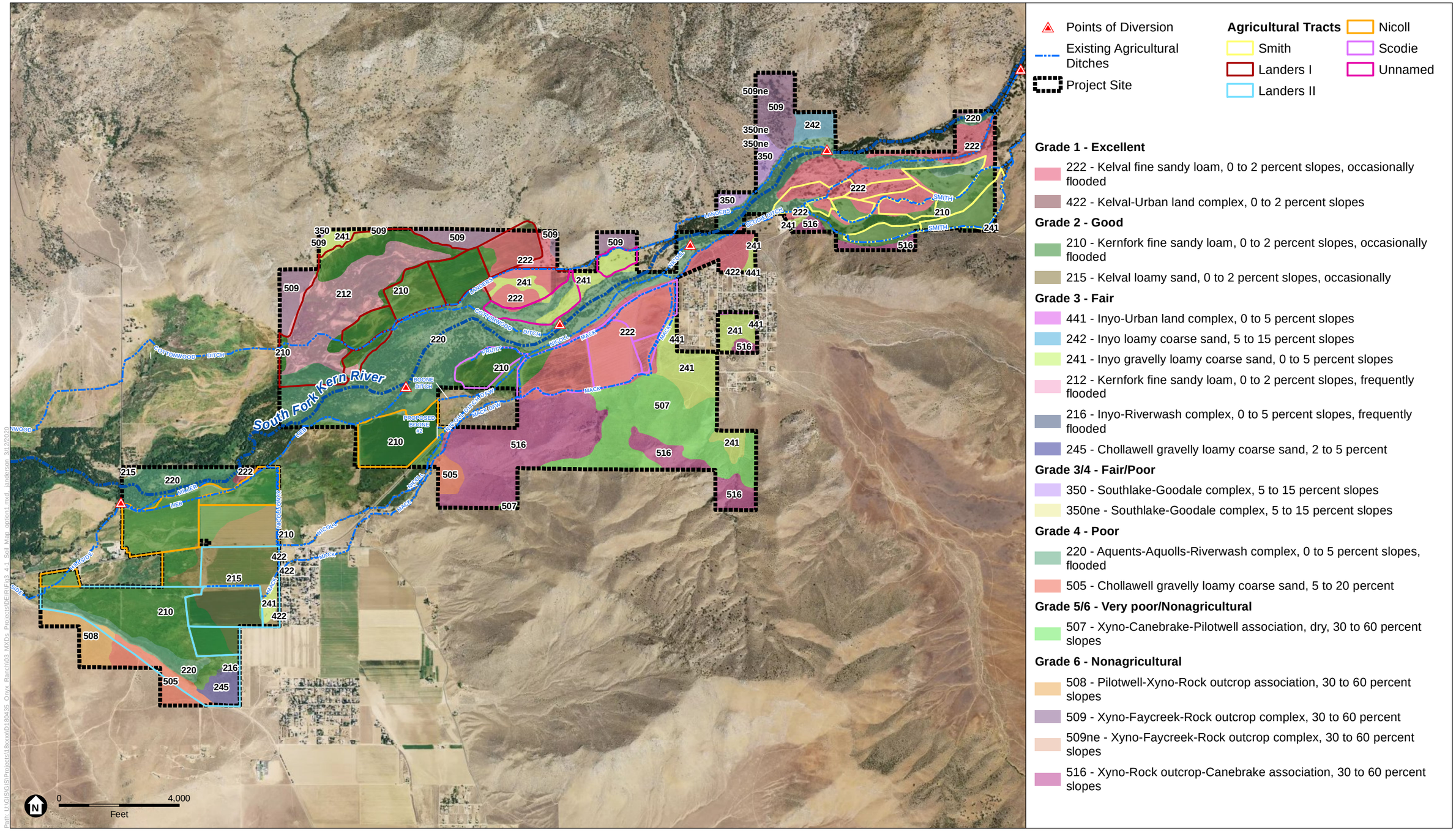
210: Kernfork fine sandy loam. This soil map unit occurs in Landers 2, 3, and 4, as well as portions of Nicoll and Lieb. Characteristic natural vegetation can include saltgrass, saltbush, rabbitbrush, and Indian ricegrass with total dry weight production of 1,600 pounds (lbs) per acre in a normal year (ranging from 1,000 to 2,000 lbs per acre in unfavorable to favorable years, respectively) without irrigation. California Revised Storie Index is Grade 2 – good.

212: Kernfork fine sandy loam. This soil map unit occurs in Givney. Characteristic natural vegetation can include arroyo willow, saltgrass, cottonwood, and rabbitbrush with total dry weight production of 1,600 lbs per acre in a normal year (ranging from 1,000 to 2,000) without irrigation. California Revised Storie Index is Grade 3 – fair.

215: Kelval loamy sand. This soil map unit occurs in portions of Mack and Nicoll. Characteristic natural vegetation can include redstem stork's bill, Mediterranean barley, rabbitbrush, saltgrass, ripgut brome, and red brome with total dry weight production of 900 lbs per acre in a normal year (ranging from 500 to 1,400) without irrigation. California Revised Storie Index is Grade 2 – good.

222: Kelval fine sandy loam. This soil map unit occurs in portions of the Sand and Landers 1. Characteristic natural vegetation can include rabbitbrush, redstem stork's bill, red brome, leporinum barley, saltgrass, and cheatgrass with total dry weight production of 550 lbs per acre in a normal year (ranging from 400 to 700) without irrigation. California Revised Storie Index is Grade 1 – excellent.

241: Inyo gravelly loamy coarse sand. This soil map unit occurs only in portions of the Sand. Characteristic natural vegetation can include rabbitbrush, burrobrush, Nevada jointfir (Ephedra), California buckwheat, squirreltail, and Joshua tree with total dry weight production of 700 lbs per acre in a normal year (ranging from 500 to 1,000) without irrigation. California Revised Storie Index is Grade 3 – fair.



SOURCE: ESRI; National Agriculture Imagery Program, 2019; United States Department of Agriculture, 2019.

Onyx Ranch South Fork Valley Water Project

Figure 3.4-1
Soil Types within the Project Site

ESA

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Farmland Classification – Farmland Mapping and Monitoring Program

The DOC maintains the FMMP and monitors the conversion of farmland to and from agricultural use through its Important Farmland Inventory System. Farmlands are divided into the categories described below based on their suitability for agriculture (DOC, 2004). The FMMP farmland in the Kern River Valley area is shown in Figure 3.4-2:

Prime Farmland. Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

Farmland of Statewide Importance. Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

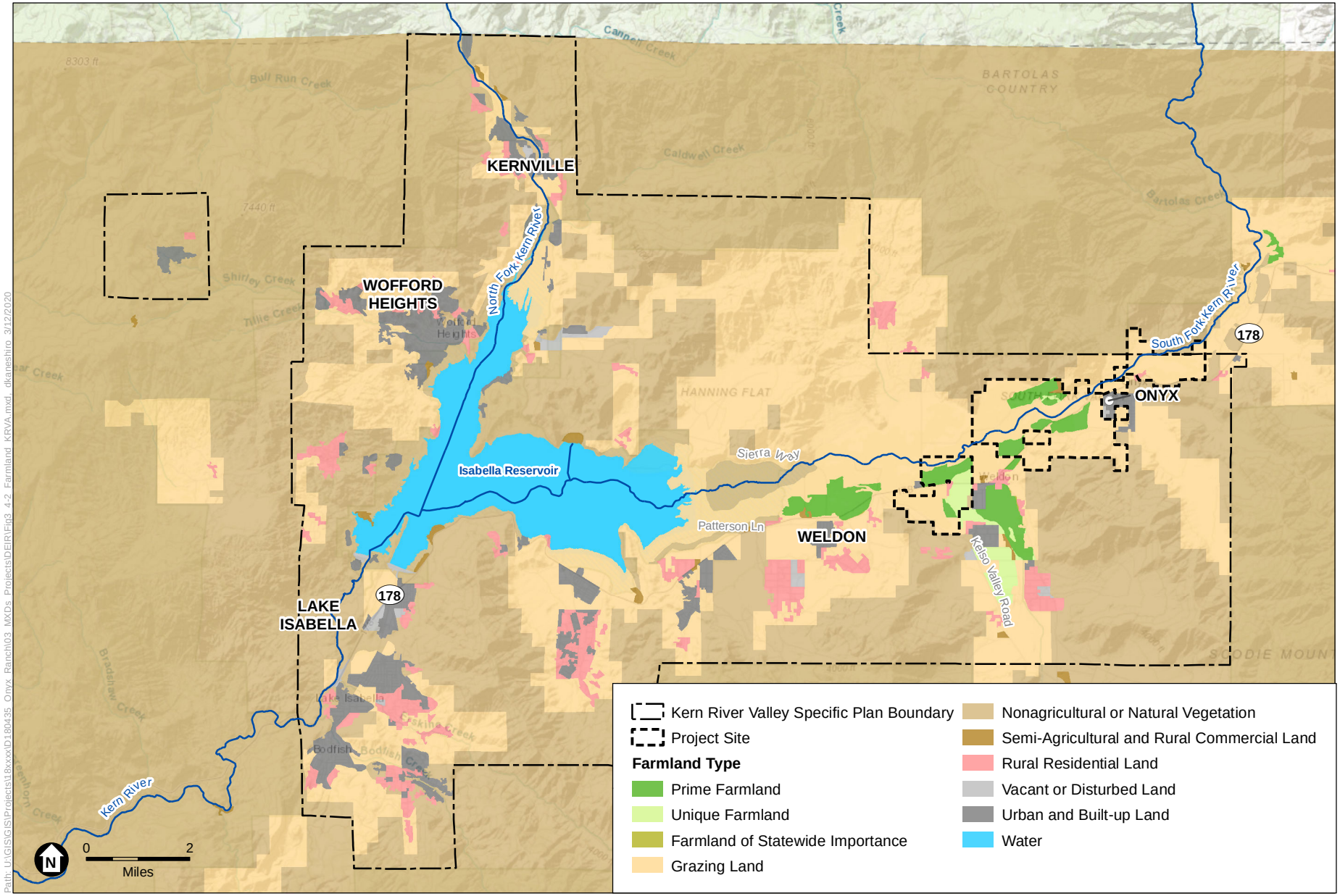
Unique Farmland. Farmland of lesser-quality soils used for the production of the state's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been used for crops at some time during the 4 years prior to the mapping date.

Farmland of Local Importance. Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. This designation includes soils that are listed as Prime Farmland or Farmland of Statewide Importance that are not irrigated and soils growing dryland crops such as beans, grains, dryland walnuts, or dryland apricots.

Grazing Land. Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

Urban and Built-up Land. Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

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



SOURCE: ESRI; Kern County; Farmland Mapping and Monitoring Program, 2019

Onyx Ranch South Fork Valley Water Project

Figure 3.4-2

Farmland Mapping and Monitoring Program
Farmland in the Kern River Valley Area

ESA

Agricultural resources on the project site, as defined by the DOC FMMP (2015), are shown in Figure 3.4-3. The majority of the project site is composed of Prime Farmland, Unique Farmland, and Grazing Land. Table 3.4-1 above lists the percentage of land within each irrigated field and pasture on the project site that is designated as Prime Farmland and Unique Farmland. On the Onyx Ranch, approximately 680 acres are designated under the FMMP as Prime Farmland and approximately 202 acres are designated as Unique Farmland. The Smith Ranch does not have any Prime or Unique Farmland designations under the FMMP.

Williamson Act and Kern County Agricultural Preserves

The Williamson Act contracts for the parcels on the project site and the surrounding area are shown in Figure 3.4-4. No part of the Onyx Ranch is currently under a Williamson Act contract. The majority of parcels within the Smith Ranch are under a Williamson Act contract.

Kern County uses an Agricultural Preserve Program to designate all land in the agricultural spectrum within the County. The Agricultural Preserve Program intends to preserve agriculture land necessary to the State's economic vitality and is enforced through provisions in the Williamson Act (described further below in Section 3.4.2 Regulatory Framework). The project site is located in Agricultural Preserve 15 (Kern County, 2019).

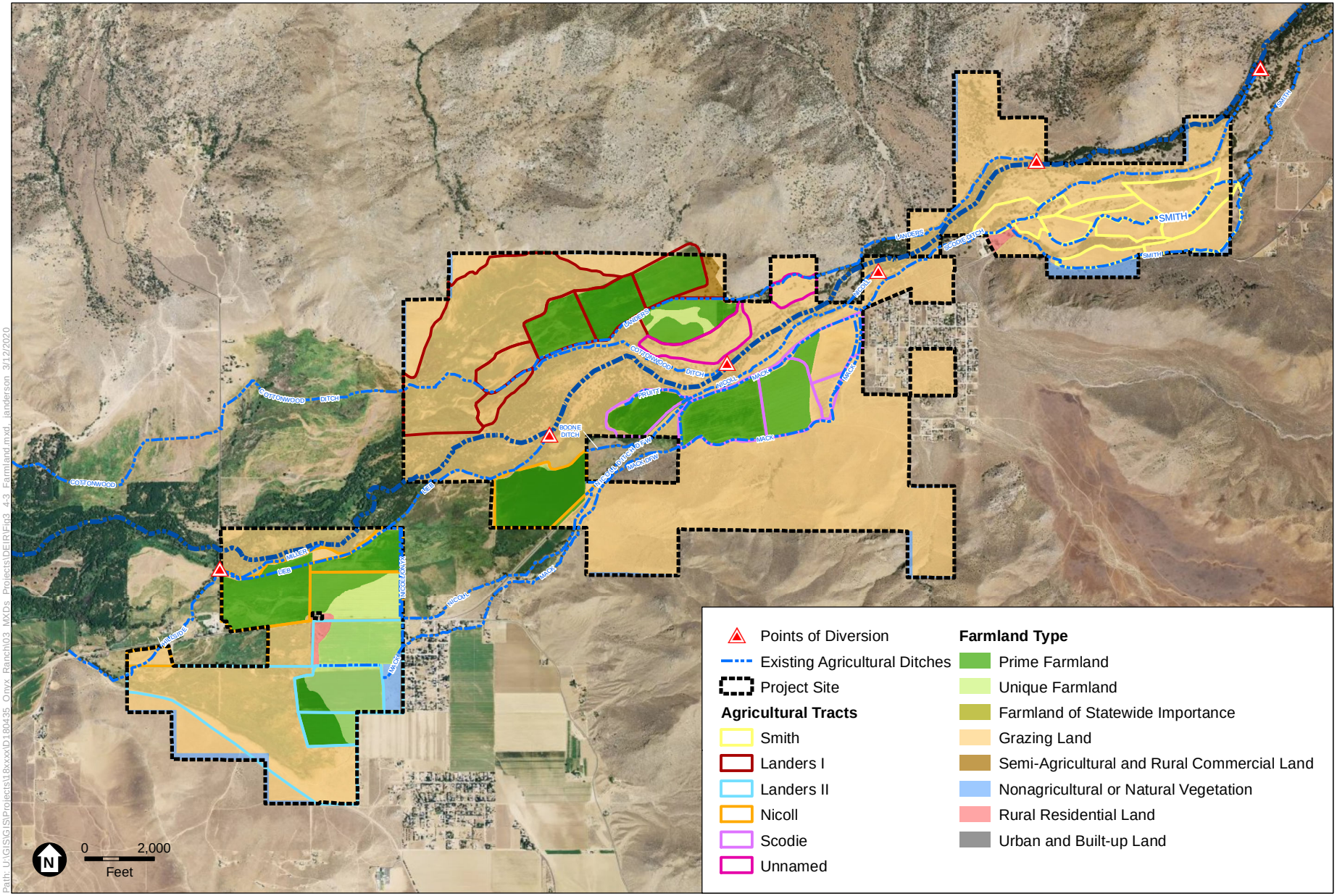
Agricultural Productivity

An assessment of current agricultural productivity on the project site was conducted by ESA based on the following: a site visit in August 2018 to document existing conditions and operations at the Onyx Ranch and the Smith Ranch; existing water use for irrigation and livestock; existing soil survey data from the NRCS (NRCS, 2018); and residual dry matter guidelines. Residual dry matter (RDM) is the remaining herbaceous vegetation left standing or on the ground before the start of the next growing season. The amount of RDM has effects on soil compaction and erosion as well as species germination as seasonal rains begin (Bartolome et al 2006). The assessment of agricultural productivity estimates the range of pasture[2] productivity available for livestock consumption. Pasture productivity is based on production estimates for each soil type as provided in NRCS Soil Survey for each irrigated field and pasture on the project site weighted by area.

An Animal Unit Month (AUM) is defined as the forage[3] consumed by a lactating cow-calf pair in one month. For the assessment of agricultural productivity, an AUM is assumed to be 1,000 pounds (lbs) of dry forage per month and it is assumed that bulls consume the equivalent of 1.25 AUMs. AUMs are calculated to allow for the harvest of 50 percent of the estimated forage production above 500 lbs per acre for the soil type from the NRCS soil map unit descriptions. This allows for RDM standards of 500 to 1,000 lbs per acre depending on production to allow for soil conservation and prevention of air quality issues from wind-blown soil erosion.

2 "Pasture" as used here refers to herbaceous and woody plants harvested directly by grazing livestock (Vallentine. 2001, p. 6).

3 "Forage" as used here is refers to as herbaceous feeds as well as browse from woody plants available for grazing by livestock or wildlife (Vallentine. 1989, p. 31).



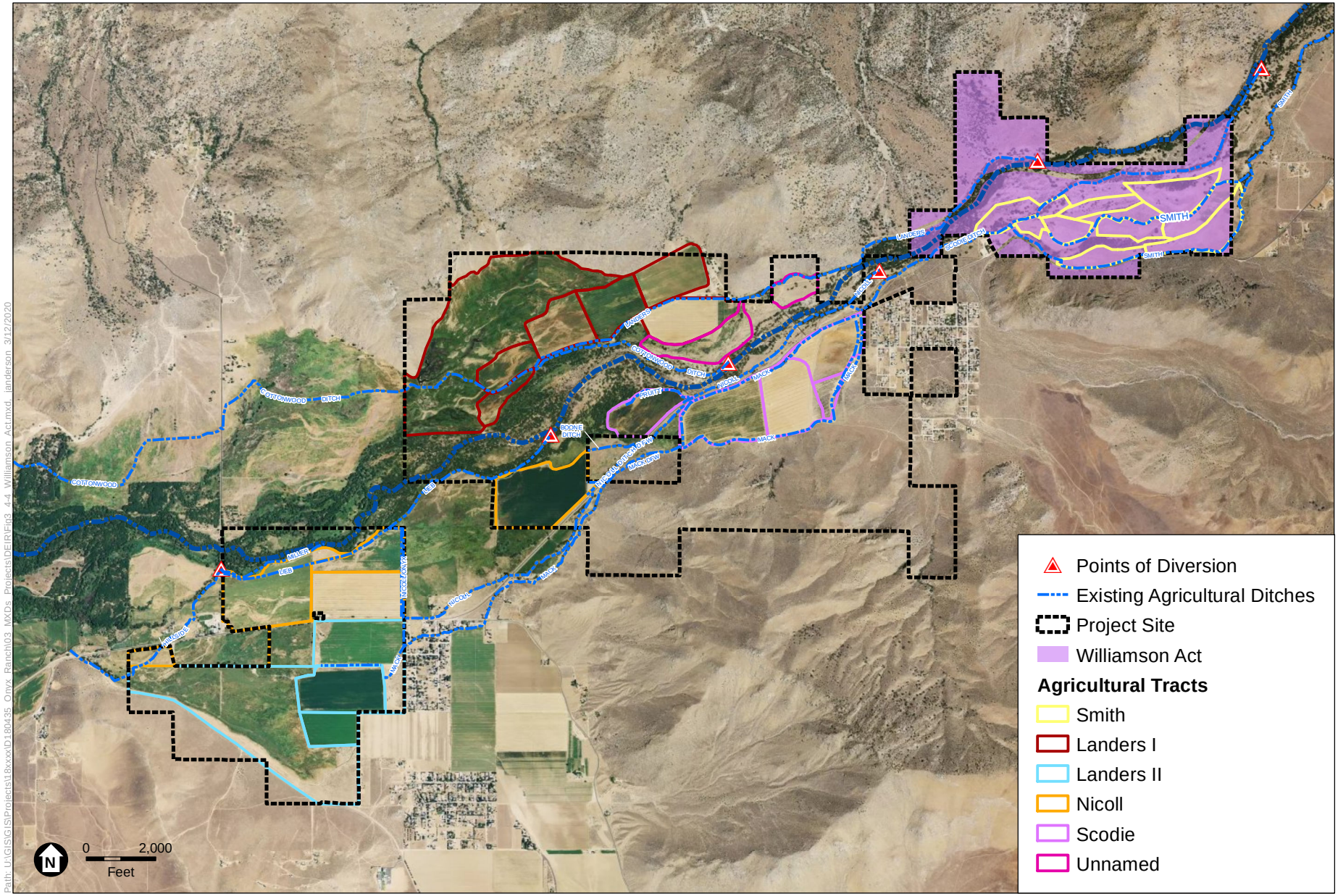
SOURCE: ESRI; National Agriculture Imagery Program, 2019; Kern County, 2019; Farmland Mapping and Monitoring Program, 2019

Onyx Ranch South Fork Valley Water Project

Figure 3.4-3

Farmland Mapping and Monitoring Program Farmland Designations for the Project Site

ESA



SOURCE: ESRI; National Agriculture Imagery Program, 2019; Kern County, 2019; Farmland Mapping and Monitoring Program, 2019

Onyx Ranch South Fork Valley Water Project

Figure 3.4-4
Williamson Act Lands within the Project Site

ESA

The estimates of irrigation by field in the assessment were derived based on allocating irrigation water use to each field by area and crop or vegetation cover. The estimated water diversions for the Onyx Ranch ranged from 3,408 to 27,435 acre-feet per year (AFY) from 2009 to 2017[4] with a median value of 8,652 AFY and an average of 12,109 AFY. On the Onyx Ranch, water diversions were applied to the approximately 1,658 acres of irrigated pasture and cropland. On the Onyx Ranch in 2017, approximately 10,741 AFY of water was used for irrigation, and there were approximately 5,465 AUMs. In addition, approximately 4,739 tons of alfalfa and approximately 1,000 tons of hay and grains were used.

The estimated water diversions for the Smith Ranch ranged from 3,432 to 6,039 AFY from 2016 to 2018 with a median value of 3,540 AFY and an average of 4,337 AFY. On the Smith Ranch, water diversions were applied to the approximately 242 acres of irrigated pasture, and there were approximately 2,250 AUMs on the property from 2016 to 2018 as reported by ranch managers.

Farmland Conversion

According to the DOC's 2015 California Farmland Conversion Report, in 2012, Southern California had approximately 2,973,000 acres of Important Farmlands, but has continued to see a decline in farmlands over the years. In 2012, Kern County had 2,743,937 acres of total agricultural land, of which 900,332 acres were classified within an Important Farmland category, such as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance. Additionally, in 2012, 1,843,605 acres were classified as Grazing Land (DOC, 2015, Table A-10). From 2010 to 2012, 2,391 acres in Kern County were urbanized with 690 acres switching from Important Farmland to Urban Land. The DOC noted that trends in acreage of Grazing Land and dryland farming frequently mirror that of irrigated lands due to multi-year hydrologic factors (e.g., drought) and economic factors, which influence the amount of land growers put into production (DOC, 2015).

According to the DOC FMMP's 2016-2018 Kern County Land Use Conversion Table, in 2018, Kern County had 2,728,667 acres of total agricultural land, of which 874,026 acres were classified with an Important Farmland category and 1,854,641 acres were classified as Grazing Land (DOC, 2018, Table A-11). From 2016 to 2018, Kern County experienced a net loss of approximately 6,076 acres of Important Farmland and a net gain of approximately 5,378 acres of Grazing Land, resulting in a net loss of 702 acres of agricultural lands (DOC, 2018). When considering the conversion of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland during the period of 2016 to 2018, approximately 87 percent of such lands were converted to Grazing Lands, and approximately 6 percent were converted to Urban Lands. From 2016 to 2018, approximately 6,780 acres were urbanized in Kern County, with 795 acres switching from Important Farmland to Urban Land and 1,278 acres switching from Grazing Land to Urban Land (DOC, 2018).

[4] This calculation excludes 2011, with a total diversion of 41,119 AFY, which was an anomalous year and not representative of normal management.

Cumulative Setting

As discussed in Section 3.2, Cumulative Impacts Methodology, the geographic area addressed in the discussion of cumulative impacts varies depending on the environmental resource topic being analyzed. The geographic area for the analysis of the potential cumulative impacts of the proposed project and cumulative projects related to agricultural resources is the Kern River Valley and San Joaquin Valley. As such, the environmental setting for cumulative impacts is the same as that described above for the proposed project.

3.4.2 Regulatory Framework

Federal

Farmland Protection Policy Act (7 U.S.C. Section 4201)

The purpose of the Farmland Protection Policy Act (FPPA) is to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. It additionally directs federal programs to be compatible with state and local policies for the protection of farmlands. Congress passed the Agriculture and Food Act of 1981 (Public Law 97-98) containing the FPPA—Subtitle I of Title XV, Sections 1539–1549. The final rules and regulations were published in the Federal Register on June 17, 1994.

Federal agencies are required to develop and review their policies and procedures to implement the FPPA every 2 years. The FPPA does not authorize the federal government to regulate the use of private or nonfederal land or, in any way, affect the property rights of land owners.

For the purpose of the FPPA, farmland includes Prime Farmland, Unique Farmland, and Land of Statewide or Local Importance. Farmland subject to FPPA requirements does not have to be currently used for cropland, it can be Forest Land, Pastureland, Cropland, or other land, but not Urban and Built-up Land.

Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a federal agency or with assistance from a federal agency (NRCS, 2019).

State of California

Williamson Act

The California Land Conservation Act of 1965, also known as the Williamson Act, is designed to preserve agricultural and open space lands by discouraging their premature and unnecessary conversion to urban uses. Williamson Act contracts, also known as agricultural preserves, create an arrangement whereby private landowners contract with counties and cities to voluntarily restrict their land to agricultural and compatible open-space uses. The vehicle for these agreements is a rolling term 10-year contract (DOC, 2019). In return, restricted parcels are assessed for tax purposes at a rate consistent with their actual use, rather than potential market value. To cancel a Williamson Act contract, either the local government or the landowner can

initiate the nonrenewal process. A "notice of nonrenewal" starts a 9-year nonrenewal period. During the nonrenewal process, the annual tax assessment gradually increases. At the end of the 9-year nonrenewal period, the contract is terminated. Contracts renew automatically every year unless the nonrenewal process is initiated. Williamson Act contracts can be divided into the following categories: Prime Agricultural Land, Non-Prime Agricultural Land, Open Space Easement, Built Up Land, and Agricultural Land in Non-Renewal.

The Williamson Act states that a board or council by resolution shall adopt rules governing the administration of agricultural preserves. The rules of each agricultural preserve specify the uses allowed. Generally, any commercial agricultural use will be permitted within any agricultural preserve. In addition, local governments may identify compatible uses permitted with a use permit. As described below, the Kern County Planning and Natural Resources Department has adopted its own rules governing agricultural preserves and compatible uses.

Farmland Security Zone Act

The Farmland Security Zone Act is similar to the Williamson Act and was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy. Farmland Security Zone Act contracts are sometimes referred to as "Super Williamson Act Contracts." Under the provisions of this act, a landowner already under a Williamson Act contract can apply for Farmland Security Zone status by entering into a contract with the county. Farmland Security Zone classification automatically renews each year for an additional 20 years. In return for a further 35 percent reduction in the taxable value of land and growing improvements (in addition to Williamson Act tax benefits), the owner of the property promises not to develop the property into nonagricultural uses. Kern County has an 80-gross acre size requirement for parcels to be included in the Farmland Security Zone Program.

Public Resources Code Section 21060.1

Public Resources Code (PRC) Section 21060.1 defines agricultural land for the purposes of assessing environmental impacts using the FMMP. As discussed above, the FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides guidance for the analysis of agricultural and land use changes throughout California.

Land Evaluation and Site Assessment Model (LESA)

The Land Evaluation and Site Assessment (LESA) is a point-based approach for rating the relative importance of agricultural land resources based upon specific measurable features for project proposals that would result in a conversion of agricultural land to non-agricultural uses. The California LESA Model was developed to provide lead agencies with an optional methodology to ensure that potential significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process (Public Resources Code Section 21095), including in CEQA reviews.

The California Agricultural LESA Model evaluates measures of soil resource quality, a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, the factors are rated, weighted, and combined, resulting in a single numeric score. The project score becomes the basis for making a determination of a project's potential significance. The LESA Model is not used in the analysis of, or impact determination for, the proposed project because there would be no conversion of agricultural land to non-agricultural use, as explained below in Section 3.4.3 Impact Analysis and Mitigation Measures.

Local

Kern County Agricultural Preserve Standard Uniform Rules

The Kern County Planning Department adopted the Agricultural Preserve Standard Uniform Rules, which identify land uses that are compatible within agricultural preserves established under the Williamson Act (Kern County, 2013). The rules are designed to restrict land uses to those compatible with agriculture, including crop cultivation, livestock breeding, grazing operations, and dairies. In addition, some non-agricultural land uses are considered compatible, including public utilities facilities (e.g., gas, electric, communication, water) and groundwater recharge facilities. Specifically, the Standard Uniform Rules state that compatible uses include the following:

- Agricultural and horticultural uses, including, but not limited to, greenhouse, orchard, the raising of field, tree, vine, berry, and bush crops, vegetables, flowers, and other plants, and the growing and harvesting of timber.
- Farms devoted to the grazing of cattle, horses, sheep, hogs, or other farm stock, including the supplementary feeding thereof, but not including slaughterhouses. Commercial cattle feed yards (included by Board of Supervisors Resolution 73-219).

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the Kern River Valley Specific Plan (KRVSP) area, which was addressed in the KRVSP adopted by Kern County in 2011. The KRVSP consists of elements that include goals, policies, and implementation measures related to the agriculture within the Kern River Valley. The applicable elements and their goals, polices, and implementation measures are as follows:

Land Use Element

The Land Use Element discusses established and future development patterns within the Kern River Valley; sets forth goals, policies, and implementation to guide decision-making; and provides a land use plan to direct growth to desired areas where infrastructure and services can be provided while minimizing potential impact on natural resources. There are no explicit goals,

policies, or implementation measures in this Element that pertain to agricultural resources that are applicable to the proposed project.

Figure 3.12-1 and Table 3.12-1 in Section 3.12 Land Use of this Draft EIR, provide the General Plan Land Use Categories designated in the KRVSP for the project site. The majority of the project site is designated as 8.1 (Intensive Agriculture) or 8.3/2.5 (Extensive Agriculture/Flood Hazard) in the KRVSP. The project site also includes lands designated as 8.5 (Resource Management) and 8.5/2.4 (Resource Management/Steep Slope). A small portion of the northern part of the Smith Ranch is located outside of the KRVSP. The land use designation for this portion of the Smith Ranch is 8.3/2.5 (Extensive Agriculture/Flood Hazard, which is the same as the area on the Smith Ranch within the KRVSP (see Figure 3.12-1). The County uses the same land use designations in the KRVSP and the General Plan to maintain consistency.

Conservation Element

The Conservation Element focuses on practices that can ensure the long-term survival of resources that Kern River Valley residents enjoy and cherish. Preserving and renewing important local resources would assure their highest economic and social benefit over the longest period of time. Regarding agricultural resources, the Conservation Element identifies goals, policies, and implementation measures to maintain agricultural land use and resources in the Kern River Valley area. The applicable goal, policy, and implementation measure are as follows:

Agricultural and Ranching Resources

Goal 5.2.1: Maintain the rural character of the Kern River Valley by protecting grazing and farmland.

Policy 5.2.3: Develop community awareness and support of local agriculture and grazing operations.

Implementation 5.2.2: Collaborate with State, federal, and local governmental agencies, and private entities as well as landowners to preserve agricultural land.

Sustainability Element

The Sustainability Element focuses on reinforcing the goal to promote sustainable and strategic growth which utilizes energy and other resource-efficient practices. Regarding agricultural resources, the Sustainability Element of the KRVSP identifies goals, policies, and implementation measures to maintain agricultural land use resources in the Kern River Valley area. The applicable goal and policies are as follows:

General Sustainability

Goal 11.1.3: Encourage landscape design and maintenance and agricultural practices that reduce or eliminate the use of pesticides and herbicides, as well as conserving water.

Policy 11.1.4: Encourage the use of agricultural management practices that result in the efficient use of water resources.

Policy 11.1.5: Promote organic agriculture in order to minimize use of chemical pesticides and herbicides and to encourage agri-tourism.

Policy 11.1.8: Encourage agricultural practices that require reduced water demand and utilize the most efficient irrigation practices.

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009). The Kern County General Plan states that agriculture is vital to the future of Kern County (Kern County, 2009).

Land Use, Open Space, and Conservation Element

The Land Use, Open Space, and Conservation Element identifies goals, policies, and implementation measures to protect important agricultural lands for future use and to prevent conversion of prime farmland to other uses. The applicable goal and policies are as follows:

Goal 5: Conserve prime agriculture lands from premature conversion.

Policy 7: Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.

Policy 10: To encourage effective groundwater resource management for the long-term economic benefit of the County the following shall be considered:

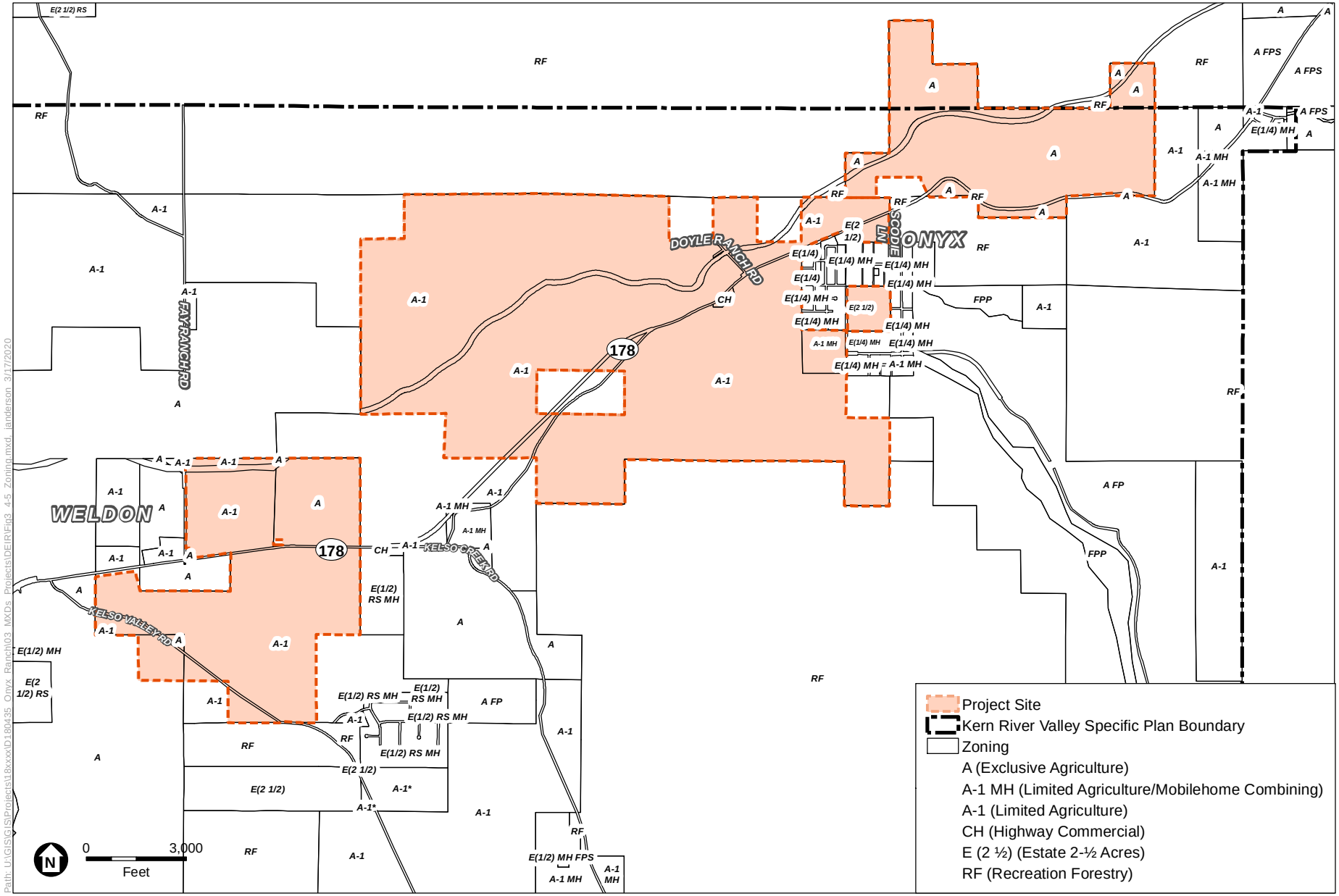
- Promote groundwater recharge activities in various zone districts.
- Support the development of future sources of additional surface water and groundwater, including conjunctive use, recycled water, conservation, additional storage of surface water and groundwater and desalination.

Kern County Zoning Ordinance

The Kern County Zoning Ordinance provides the zoning districts for the parcels within the unincorporated areas of the County. The zoning designations for the Onyx Ranch portion of the project site are: A (Exclusive Agriculture); A-1 (Limited Agriculture); A-1 MH (Limited Agriculture/Mobilehome Combining); E (2 ½) (Estate – 2 ½ Acres); and CH (Highway Commercial). The parcels on the Smith Ranch portion of the project site are: A (Exclusive Agriculture); and RF (Recreation Forestry). Figure 3.4-5 shows the zoning designations for the project site. An explanation of the purposes and application of each designation is included below:

A (Exclusive Agriculture)

The purpose of the A (Exclusive Agriculture) District is to designate areas suitable for agricultural uses and to prevent the encroachment of incompatible uses onto agricultural lands and the premature conversion of such lands to nonagricultural uses. Uses in the A District are limited primarily to agricultural uses and other activities compatible with agricultural uses.



SOURCE: Kern County Zoning Ordinance

Onyx Ranch South Fork Valley Water Project

Figure 3.4-5

Zoning Designations within the Project Site

ESA

RF (Recreation Forestry)

The purpose of the RF (Recreation-Forestry) District is to designate lands for the conservation and use of natural resources and for compatible recreational uses. Non resource-related uses are limited to uses that will not adversely affect the primary resource use or uses to which the land is devoted. Agricultural uses are permitted uses within the RF District.

A-1 (Limited Agriculture)

The purpose of the A-1 (Limited Agriculture) District is to designate areas suitable for a combination of estate-type residential development, agricultural uses, and other compatible uses. Final map residential subdivisions are not allowed in the A-1 District.

A-1 MH (Limited Agriculture/Mobilehome Combining)

The purpose of the A-1 MH (Mobilehome Combining) District is to provide for the combining of the A-1 District with the MH District. Refer above for the A-1 District's purpose. The MH District provides for the installation of mobilehomes with or without foundations in agricultural, resource-related, and residential zoned areas. Except as specifically provided for in the Zoning District, the uses allowed and regulations established by the MH District shall be in addition to the regulations of the base district, in this case A-1, with which the MH District is combined.

E (2 ½) (Estate 2-½ Acres)

The purpose of the E (2 ½) (Estate-2 ½ Acres) District is to designate areas suitable for larger lot residential living environments. Uses are limited to those typical of and compatible with quiet residential neighborhoods. The minimum lot size shall be one-quarter (1/4) acre (10,890 square feet) unless the E District is combined with the Lot Size Combining District where a larger minimum lot size is specified. Agricultural uses permitted in the E District including breeding and raising of animals.

CH (Highway Commercial)

The purpose of the CH (Highway Commercial) District is to designate areas for uses and services normally associated with the traveling public. The CH District shall be located adjacent to or in close proximity to major highways. The CH District is intended to promote a unified grouping of travel-oriented uses, such as gas stations, restaurants, and motels. It is also intended to permit limited urban type uses in rural areas adjacent to highways with a minimum of encroachment on surrounding agricultural activities.

3.4.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to pages 3.4-1 and 3.4-2 above for a summary of the environmental issues and significance criteria included in this Draft EIR for the analysis of agricultural resources. This Draft EIR assumes implementation of the proposed project would have significant impact related to agricultural resources if it would:

- 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 a non-agricultural use.
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- Result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 (Williamson Act) for any parcel of 100 acres or more (Section 15206(b)(3) Public Resources Code) or Farmland Security Zone Contract within an agricultural preserve approved by Kern County.

Methodology

This environmental analysis related to agriculture is based on the following information: the definition of the proposed project provided in Chapter 2 Project Description; a review of applicable documents (reports and maps); a project site visit by ESA staff with specialization in agriculture and range management in August 2018; and the regulatory requirements summarized above in Section 3.4.2. The analysis of the potential effects of the proposed project related to agriculture resources is discussed in the Impact Analysis provided below.

Impact Analysis

Farmland Conversion

Potential Impact AGR-1: Would the proposed project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to a non-agricultural use?

As described in Section 2.7 Description of the Proposed Project, the proposed project would change the points of diversion and place of use for the water rights associated with the project site so that the water can be delivered in the RRBWSD service area on the San Joaquin Valley floor. The RRBWSD proposes to reduce the diversion and use of surface water on the project site by converting irrigated fields to non-irrigated pasture or native vegetation. The proposed project would not replace reduced surface water diversions with groundwater pumped on the project site.

With the proposed project, surface water that is diverted under the existing condition would remain in the South Fork of the Kern River and flow downstream. The increased flows would be released through the Isabella Dam and flow downstream in the Lower Kern River until it reaches the RRBWSD diversion points. From there, the RRBWSD would deliver the water to its surface recharge basins and channels within and near its service area west of the City of Bakersfield.

As stated above, on the Onyx Ranch, there is approximately 680 acres of land designated as Prime Farmland and approximately 202 acres of land designated as Unique Farmland. There is no Farmland of Statewide Importance on the Onyx Ranch. The Smith Ranch does not have any lands designated by the FMMP as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Both the Onyx Ranch and the Smith Ranch have lands designated as Grazing Land (see Figure 3.4-3).

With implementation of the proposed project, land designated as Prime Farmland and Unique Farmland on the Onyx Ranch would no longer be irrigated, with the exception of Boone Field. Therefore, with implementation of the proposed project, approximately 590 acres of Prime Farmland and 201 acres of Unique Farmland would no longer be irrigated on the Onyx Ranch project site. No change would occur to land designated Grazing Land on the Onyx Ranch or the Smith Ranch.

Ceasing the irrigation for the designated Prime Farmland and Unique Farmland on the Onyx Ranch would cause those acres to no longer meet the FMMP definitions of Prime Farmland and Unique Farmlands four years after the proposed project is implemented. The definition of both Prime Farmland and Unique Farmland requires the land to be used for irrigated agricultural production at some time during the prior four years. However, the proposed project would continue to use the lands for agricultural purposes, which would include growing vegetation that could persist under a natural precipitation regime and livestock grazing. Grazing is considered an agricultural use by the FMMP and the Kern County Agricultural Preserve Standard Uniform Rules.

As stated above, other than the Boone Field, with implementation of the proposed project, currently irrigated pastures on the Onyx Ranch would be converted to drought tolerant vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle. As stated in Chapter 2 Project Description, a Grazing Management Plan would be developed to identify grazing practices, performance standards, and associated monitoring to achieve soil conservation and agricultural productivity objectives. Inter-annual variability of pasture productivity could occur due to the total reliance on natural precipitation for pasture production. The Grazing Management Plan would also include drought management strategies for grazing activities, utilizing replacement feed, use of off-site pastures, early calf weaning, and herd culling in dry years. These practices may require time to recover (particularly from culling) as the breeding herd is rebuilt in subsequent wet years.

To improve cattle distribution on the Onyx Ranch and the Smith Ranch with reduced irrigation and to avoid energy use incurred by operating the existing larger-capacity agricultural wells on-site, up to 12 shallow, low-volume wells would be established across the ranches. Based on the grazing capacity of Onyx Ranch and Smith Ranch, each well would have a 2 to 5 gpm capacity to maintain flexibility for managing the cattle herd. In dry years, the reduced vegetation productivity would result in reduced demand for water from these wells as herd sizes would be adjusted to respond to drought.

With implementation of the proposed project, agricultural productivity on the Onyx Ranch is anticipated to change from approximately 5,465 AUMs to a range of 284 to 644 AUMs. This is based on a reduction in irrigated acreage from 1,658 acres to 96 acres (Boone Field), reduction in alfalfa grown from 4,739 tons to 582 tons, and reduction in consumption of hay and grains from approximately 1,000 tons to 0 tons. The number of AUMs onsite on the Onyx Ranch could be greater than 644 AUMs if supplemental feed is used or if supplemental irrigation is provided in accordance with implementation of the Grazing Management Plan.

With implementation of the proposed project, no substantial changes to agricultural practices at the Smith Ranch are anticipated other than a 33 percent reduction in the irrigated acres. The proposed project includes implementation of a Grazing Management Plan that could result in more effective use of existing available forage with modifications to grazing management activities, including yearly rotations of irrigated acres, seasonal livestock rotation, RDM targets, fence maintenance (including potential replacement of existing fences), and establishment of additional livestock watering locations. With implementation of the proposed project, it is estimated that agricultural productivity on Smith Ranch would range from 1,020 AUMs during low productivity years to 1,095 AUMs during high productivity years. Similar to Onyx Ranch, the number of AUMs onsite at Smith Ranch could be greater than 1,095 AUMs if supplemental feed is used, or with implementation of efficiency measures and performance standards in accordance with the Grazing Management Plan. With more efficient management of irrigation water relative to current management, the vegetative productivity of irrigated pastures on Smith Ranch could be maintained similar to current management, resulting in no change to the carrying capacity of the ranch with implementation of the proposed project.

Although the proposed project would result in a change in the use of 882 acres of FMMP-defined Prime Farmland and Unique Farmland on the Onyx Ranch, these lands would continue to support agricultural uses. The implementation of the proposed project would not result in the conversion of Prime Farmland or Unique Farmland to a non-agricultural use. Therefore, the potential impacts would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- With implementation of the proposed project, lands designated by the State Farmland Mapping and Monitoring Program as Prime Farmland and Unique Farmland on the Onyx Ranch would no longer be irrigated. However, the non-irrigated lands would be gradually converted to Grazing Land which is considered an agricultural use. Therefore, the proposed project would not result in the conversion of Prime Farmland or Unique Farmland to a non-agricultural use. Impact would be less than significant.

Agricultural Zoning and Williamson Act

Potential Impact AGR-2: Would the proposed project conflict with existing zoning for agricultural use, or a Williamson Act contract?

As stated above, the project site includes zoning designations for agricultural use. A portion of the Onyx Ranch is zoned as A (Exclusive Agriculture), A-1 (Limited Agriculture), and A-1 MH (Limited Agriculture/Mobilehome Combining). A portion of the Smith Ranch is zoned as A

(Exclusive Agriculture). These agricultural zoning designations either directly support agricultural uses or identify agriculture as a compatible use. While the proposed project would reduce the amount of surface waters and transition the existing irrigated fields and pastures on the Onyx Ranch to non-irrigated fields and pastures, the existing lands would continue to be used for agricultural purposes by providing non-irrigated pastures and grazing. Similarly, on the Smith Ranch, although the proposed project would reduce the amount of surface water for irrigation, the existing lands would continue to be used for agricultural purposes by continuing the existing grazing activities. Therefore, the implementation of the proposed project would not conflict with the existing zoning for agricultural use on the project site. Therefore, no impact related to the existing zoning for agricultural use would occur.

As stated above, none of the parcels on the Onyx Ranch portion of the project site are currently under a Williamson Act contract. However, as shown in Figure 3.4-4, the majority of parcels within the Smith Ranch are under a Williamson Act contract. Currently, approximately 242 acres of the Smith Ranch are irrigated fields that support cattle grazing. Although the proposed project would reduce the amount of surface water available for irrigation on the Smith Ranch, the existing fields would continue to provide for agricultural uses and the grazing of cattle. Therefore, the implementation of the proposed project would not result in the termination of an existing Williamson Act contract. Therefore, no impact related to a Williamson Act contract would occur.

Mitigation Measures

None required.

Significance Determination

No Impact

Impact Summary

- The proposed project would not conflict with existing agricultural zoning designations for the Onyx Ranch and the Smith Ranch on the project site. Therefore, no impact would occur.
- The proposed project would not conflict with or result in a need to terminate or modify the existing Williamson Act contract for the Smith Ranch. Although the proposed project would reduce the amount of water available for irrigation on the Smith Ranch, the existing fields would continue to be used for agricultural uses and grazing of cattle. Therefore, no impact would occur.

Kern County Agricultural Preserves

Potential Impact AGR-3: Would the proposed project result in the cancellation of an open space contract made pursuant to the California Land Conservation Act of 1965 (Williamson Act) for any parcel of 100 acres or more (Section 15206(b)(3) Public Resources Code) or Farmland Security Zone Contract within an agricultural preserve approved by Kern County?

As evaluated for Potential Impact AGR-2, none of the parcels within the Onyx Ranch portion of the project site are currently under a Williamson Act contract. However, as shown in Figure 3.4-4, the majority of parcels within the Smith Ranch are under a Williamson Act contract. The Smith Ranch includes approximately 242 acres of irrigated fields that support cattle grazing.

The Farmland Security Zone Act is similar to the Williamson Act and was passed by the California State Legislature in 1999 to ensure that long-term farmland preservation is part of public policy. Farmland Security Zone Act contracts are sometimes referred to as "Super Williamson Act Contracts." The Smith Ranch currently is not under a Farmland Security Zone Act contract.

Kern County uses an Agricultural Preserve Program to designate all land in the agricultural spectrum within the County. The Agricultural Preserve Program intends to preserve agriculture land necessary to the State's economic vitality and is enforced through provisions in the Williamson Act. The project site is located in Kern County Agricultural Preserve 15 (Kern County, 2019).

As discussed in the evaluation for Potential Impact AGR-2, although the proposed project would reduce the amount of surface water available for irrigation on the Smith Ranch, the fields would continue to provide for agricultural uses and the grazing of cattle. In addition, the implementation of the proposed project would not result in the cancellation of an existing Williamson Act contract within an agricultural preserve approved by Kern County. Therefore, no impact would occur.

Mitigation Measures

None required.

Significance Determination

No Impact

Impact Summary

- The project site is located in Kern County Agricultural Preserve 15. However, the proposed project would not result in the cancellation of an existing Williamson Act contract within an agricultural preserve approved by Kern County. Therefore, no impact would occur.

Potential Cumulative Impacts

This section presents an analysis of the cumulative effects of the proposed project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively considerable impacts. Cumulative projects are listed in Table 3-1 in Section 3.2 Cumulative Impacts of this Draft EIR; the locations are shown in Figure 3-1. There are four cumulative projects in the Kern River Valley. Cumulative Project A, Isabella Lake Dam Safety Modification Project, is currently under construction at the western end of Isabella Reservoir and would not directly affect farmland or agricultural uses in the Kern River Valley. Cumulative Project B, Tricolored Blackbird Voluntary Local Program, encourages farmers and ranchers engaged in existing agricultural activities to establish locally designed programs to voluntarily enhance and maintain habitat for endangered and threatened species. Cumulative Project C, Upper Taylor Meadow Gully Repair Project, is a watershed improvement project on one of three fenced meadow pastures in the Taylor/Long Allotment, which is public land owned by U.S. government and managed by the Forest Service. The grazing area is along Taylor creek, which is a tributary to the South Fork of the Kern River upstream of the project site. The Forest Service is implementing the Upper Taylor Project for watershed improvement in upper Taylor Meadow. The Upper Taylor Project would improve hydrologic function, improve conditions so overbank flows can access the entire meadow, and enhance meadow vegetation and aquatic species while maintaining existing land uses (grazing). Cumulative Project D, Weldon Regional Water District, is the formation of a new California Water District in the unincorporated community of Weldon that would consolidate the following five local water purveyors: Long Canyon Water Company, Tradewinds Water Association, Bella Vista Mutual Water Company, Lake Isabella KOA, and Rainbird Valley Mutual Water Company. The new Water District's proposed service area boundary includes 611 agricultural, commercial, and residential parcels. However, the proposed project would not convert any FMMP classified farmland to non-agricultural use or conflict with any agricultural zoning or Williamson Act contracts (Tom Dodson & Associates, 2020).

None of the four cumulative projects in the Kern River Valley would have adverse impacts to agricultural resources. Neither the proposed project nor the cumulative projects have the potential to result in the conversion of farmland to non-agricultural use, conflict with agricultural zoning designations, or result in cancellation of a Williamson Act contract or Farmland Security Zone Act contract. When the proposed project is considered together with cumulative projects, there would be no cumulatively considerable impacts to agricultural resources.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- None of the four cumulative projects in the Kern River Valley would have adverse impacts to agricultural resources. Neither the proposed project nor the cumulative projects have the potential to result in the conversion of farmland to non-agricultural use, conflict with

agricultural zoning designations, or result in cancellation of a Williamson Act contract or Farmland Security Zone Act contract. When the proposed project is considered together with cumulative projects, there would be no cumulatively considerable impacts to agricultural resources.

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3.5 Air Quality

This section addresses the potential impacts related to air quality associated with implementation of the proposed project. This section includes: a description of the existing air quality conditions in the air basin within which the proposed project is located; a summary of applicable regulations related to air quality; and an evaluation of the potential for the proposed project to result in impacts to air quality. In addition, an evaluation of the potential cumulative impacts is provided.

The NOP and Initial Study prepared for the proposed project indicated that the Draft EIR would analyze the potential for significant impacts related to air quality if the proposed project would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard as adopted by the Eastern Kern Air Pollution Control District or established by the U.S. Environmental Protection Agency or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is designated non-attainment under an applicable federal or State ambient air quality standard, or for which the proposed project would exceed any of the adopted thresholds provided by the Eastern Kern Air Pollution Control District.
- Expose sensitive receptors to substantial pollutant concentrations.

The analysis of these impacts is provided below in Section 3.10.3 Impact Analysis and Mitigation Measures.

The NOP and Initial Study determined that the proposed project would have no impact or a less than significant impact related to air quality for the following issue:

- The creation of objectionable odors affecting a substantial number of people.

Therefore, this issue is not discussed further in this Draft EIR. (See Section 3.1 Format of the Environmental Impact Analysis and Appendix A, Public Participation Process, for additional information.)

Public comments that were received during the NOP public review process resulted in no addition to the scope of the Draft EIR related to air quality.

The RRBWSD contracted with Environmental Science Associates to conduct air quality modeling for the proposed project. The details regarding assumptions and calculations that support the modeling are provided in Appendix B, Air Quality, Greenhouse Gases and Energy, to this Draft EIR.

3.5.1 Environmental Setting

The California Air Resources Board (CARB) has divided California into regional air basins according to topographic drainage features. The project site is located in the Mojave Desert Air

Basin (MDAB). The MDAB includes the eastern half of Kern County, the northern part of Los Angeles County, most of San Bernardino County except for the southwest corner, and the eastern edge of Riverside County. The MDAB is separated from the South Coast Air Basin, to its south, by the San Gabriel and San Bernardino Mountains. In addition, it is separated from the San Joaquin Valley, to the northwest, by the Tehachapi Mountains and the south end of the Sierra Nevada.

The project site is located in the jurisdictional region of the Eastern Kern Air Pollution Control District (EKAPCD). The EKAPCD is located on the western edge of the Mojave Desert and is separated from populated valleys and coastal areas to the west and south by several mountain ranges. These surrounding ranges contain several passes that allow pollutant transport into and out of the EKAPCD. The Tehachapi Pass connects the western Mojave Desert to the Southern San Joaquin Valley. The Soledad Pass and the Cajon Pass connect the EKAPCD to the South Coast Air Basin (EKAPCD, 2017).

Location and Setting on the Project Site

The 4,109-acre project site is located in northeastern Kern County, in the Kern River Valley, within the South Fork Valley (see Figures 2-1 and 2-2 in Chapter 2, Project Description of this Draft EIR). The project site is located approximately 5 miles from the eastern boundary of the Isabella Reservoir along the South Fork of the Kern River. The majority of the project site, consisting of approximately 3,418 acres, is located within lands collectively known as the Onyx Ranch. The remaining approximately 691 acres are parcels within the Smith Ranch, of which the RRBWSD owns one-third interest.

Regional Climate and Meteorology

Air pollution, especially the dispersion of air pollutants, is directly related to a region's topographic features. Air quality is a function of both the rate and location of pollutant emissions and the meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, which affects ambient air quality.

The MDAB is characterized by hot summers, cold winters, large diurnal ranges in temperature, low relative humidity, and irregular rainfall. The MDAB is an assemblage of mountain ranges interspersed with long broad valleys that often contain dry lakes. Many of the lower mountains which dot the vast terrain rise from 1,000 to 4,000 feet. Prevailing winds in the MDAB are out of the west and southwest. These prevailing winds are due to the proximity of the MDAB to the Pacific Ocean and the blocking nature of the Sierra Nevada Mountains to the north. Air masses pushed onshore in southern California by differential heating are channeled through the MDAB. The MDAB is separated from the southern California coastal and central California valley regions by mountains (highest elevation approximately 10,000 feet), the passes of which form the main channels for these air masses.

During the summer, the MDAB is generally influenced by a Pacific Subtropical High cell that sits off the coast to the west, inhibiting cloud formation and encouraging daytime solar heating. The MDAB is rarely influenced by cold air masses moving south from Canada and Alaska, as these frontal systems are weak and diffuse by the time they reach the desert. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. The MDAB averages between 3 and 7 inches of precipitation per year (from 16 to 30 days with at least 0.01 inch of precipitation). The MDAB is classified as a dry-hot desert climate, with portions classified as dry-very hot desert, which indicates at least 3 months out of the year have maximum average temperatures over 100.4 degrees Fahrenheit (°F). Average temperatures recorded from 1985 to 2015 in the Kern River Valley area, range from a low of 38 degrees Fahrenheit (°F) in December to highs of 98° F in July. Rainfall in the MDAB is light, averaging about 2 inches a year (T&D, 2015).

Criteria Pollutants

Certain air pollutants have been recognized to cause notable health problems and consequential damage to the environment either directly or in reaction with other pollutants, due to their presence in elevated concentrations in the atmosphere. Such pollutants have been identified and regulated as part of the overall endeavor to prevent further deterioration and facilitate improvement in air quality. The following pollutants are regulated by the United States Environmental Protection Agency (USEPA) and are subject to emissions control requirements adopted by federal, State, and local regulatory agencies, including CARB and EKAPCD. These pollutants are referred to as "criteria air pollutants" as a result of the specific standards or criteria, which have been adopted for them. A description of the health effects of these criteria air pollutants are provided below. Lead is a federal and State criteria air pollutant and hydrogen sulfide and vinyl chloride are State criteria air pollutants. However, the proposed project would not generate emissions of lead, hydrogen sulfide, or vinyl chloride; therefore, no further discussion of these pollutants is required.

Ozone (O_3)

Ozone is a secondary pollutant formed by the chemical reaction of volatile organic compounds (VOCs) and nitrogen oxides (NO_X) in the presence of sunlight under certain meteorological conditions, such as high temperature and stagnation episodes. O_3 concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable.

According to the USEPA, O_3 can cause the muscles in the airways to constrict, potentially leading to wheezing and shortness of breath (USEPA, 2018a). O_3 can make it more difficult to breathe deeply and vigorously; cause shortness of breath and pain when taking a deep breath; cause coughing and sore or scratchy throat; inflame and damage the airways; aggravate lung diseases such as asthma, emphysema and chronic bronchitis; increase the frequency of asthma attacks; make the lungs more susceptible to infection; continue to damage the lungs even when the symptoms have disappeared; and cause chronic obstructive pulmonary disease (USEPA, 2018a).

Long-term exposure to O_3 is linked to aggravation of asthma and is likely to be one of many causes of asthma development. Long-term exposures to higher concentrations of O_3 may also be linked to permanent lung damage, such as abnormal lung development in children (USEPA, 2018a). Inhalation of O_3 causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms, and exposure to O_3 can reduce the volume of air that the lungs breathe in and cause shortness of breath (CARB, 2018).

The USEPA states that people most at risk from breathing air containing O_3 include people with asthma, children, older adults, and people who are active outdoors, especially outdoor workers (USEPA, 2018a). Children are at greatest risk from exposure to O_3 because their lungs are still developing and they are more likely to be active outdoors when O_3 levels are high, which increases their exposure (USEPA, 2018a). Studies show that children are no more or less likely to suffer harmful effects than adults; however, children and teens may be more susceptible to O_3 and other pollutants because they spend nearly twice as much time outdoors and engaged in vigorous activities compared to adults (CARB, 2018). Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults and are less likely than adults to notice their own symptoms and avoid harmful exposures (CARB, 2018). Further research may be able to better distinguish between health effects in children and adults (CARB, 2018).

Nitrogen Dioxide (NO_2) and Nitrogen Oxides

NO_X is a term that refers to a group of compounds containing nitrogen and oxygen. NOx combines with VOCs to form O_3, the health effects of which are discussed above. The primary compounds of air quality concern include NO_2 and nitric oxide (NO). Ambient air quality standards have been promulgated for NO_2, which is a reddish-brown, reactive gas (CARB, 2019a).

The principal form of NO_X produced by combustion is NO, but NO reacts quickly in the atmosphere to form NO_2, creating the mixture of NO and NO_2 referred to as NO_X. Major sources of NO_X include emissions from cars, trucks and buses, power plants, and off-road equipment. The terms NO_X and NO_2 are sometimes used interchangeably. However, the term NO_X is typically used when discussing emissions, usually from combustion-related activities, and the term NO_2 is typically used when discussing ambient air quality standards. Where NO_X emissions are discussed in the context of the thresholds of significance or impact analyses, the discussions are based on the conservative assumption that all NO_X emissions would oxidize in the atmosphere to form NO_2.

Short-term exposures to NO_2 can potentially aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), hospital admissions and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections (USEPA, 2016a). Controlled human exposure studies that show that NO_2 exposure can intensify responses to allergens in allergic asthmatics (USEPA, 2016a).

In addition, epidemiological studies have demonstrated associations between NO_2 exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory

symptoms, emergency room visits for asthma, and intensified allergic responses (USEPA, 2016a). Infants and children are particularly at risk from exposure to NO_2. They have disproportionately higher exposure to NO_2 than adults due to a higher breathing rate proportionate to their body weight. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (USEPA, 2016a).

Much of the information on distribution in air, human exposure and dose, and health effects is specifically for NO_2 and there is only limited information for NO and NO_X, as well as large uncertainty in relating health effects to NO or NO_X exposure (USEPA, 2016a).

Volatile Organic Compounds / Reactive Organic Gases

Volatile Organic Compounds (VOCs), also known as reactive organic gases (ROGs), are organic chemical compounds of carbon. They are not "criteria" air pollutants themselves, however, in combination with NO_X they form O_3, and therefore, are regulated to prevent the formation of this criteria pollutant (USEPA, 2017). Some VOCs are highly reactive and play a critical role in the formation of O_3. Potential health effects of O_3 exposure are discussed above. Other VOCs can result in adverse health effects from direct exposure, and are classified by the State of California as toxic air contaminants (TACs) or hazardous air pollutants (HAPs) by USEPA (CARB, 2016a). The health effects of VOCs, as TACs/HAPs, are discussed more thoroughly below.

VOCs are typically formed from combustion of fuels and/or released through evaporation of organic liquids. Fuel combustion can occur in internal combustion sources, such as motor vehicle usage, landscape and other portable equipment, and stationary generators, or external combustion, such as for water and space heating. Evaporation sources include fueling operations, consumer products (e.g., cleaning solutions), and architectural coatings (CARB, 2016a).

The USEPA defines and uses the term VOC and its current definition relies solely on a list of USEPA-exempted compounds having "negligible photochemical reactivity." CARB uses the term reactive organic gases (ROG) and is similarly based on a list of CARB-exempted compounds. CARB has periodically updated their list of exempted compounds to include low-reactive organic compounds which have been exempted by USEPA (CARB, 2009). Thus, within the context of this air quality analysis, construction and operation of the proposed project would generally result in the same amount of emissions of VOC and ROG.

Carbon Monoxide (CO)

CO is primarily emitted from combustion processes and motor vehicles due to the incomplete combustion of fuel, such as natural gas, gasoline, or wood, with the majority of outdoor CO emissions from mobile sources (CARB, 2019b).

Breathing air with a high concentration of CO reduces the amount of oxygen that can be transported in the blood stream to critical organs like the heart and brain and at very high levels, which are possible indoors or in other enclosed environments, CO can cause dizziness, confusion, unconsciousness and death (USEPA, 2016b). Very high levels of CO are not likely to occur outdoors; however, when CO levels are elevated outdoors, they can be of particular concern for

people with some types of heart disease since these people already have a reduced ability for getting oxygenated blood to their hearts and are especially vulnerable to the effects of CO when exercising or under increased stress (USEPA, 2016b). In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain also known as angina (USEPA, 2016b).

The most common effects of CO exposure are fatigue, headaches, confusion, and dizziness due to inadequate oxygen delivery to the brain (CARB, 2019b). For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress; inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance (CARB, 2019b). Unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO (CARB, 2019b).

Sulfur Dioxide (SO_2)

The largest source of SO_2 emissions in the atmosphere is the burning of fossil fuels by power plants and other industrial facilities while smaller sources of SO_2 emission include industrial processes such as extracting metal from ore; natural sources such as volcanoes; and locomotives, ships and other vehicles and heavy equipment that burn fuel with a high sulfur content (USEPA, 2018b). In 2006, California phased-in the ultra-low-sulfur diesel regulation limiting vehicle diesel fuel to a sulfur content not exceeding 15 parts per million, down from the previous requirement of 500 parts per million, substantially reducing emissions of sulfur from diesel combustion (CARB, 2004).

Short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult (USEPA, 2018b). Health effects at levels near the State's 1-hour standard are those of asthma exacerbation, including bronchoconstriction accompanied by symptoms of respiratory irritation such as wheezing, shortness of breath, and chest tightness, especially during exercise or physical activity. Exposure at elevated levels of SO_2 (above 1 parts per million (ppm)) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality (CARB, 2019c). Children, the elderly, and people with asthma, cardiovascular disease, or chronic lung disease (such as bronchitis or emphysema) are most likely to experience the adverse effects of SO_2 (CARB, 2019c; USEPA, 2018b).

Particulate Matter (PM10 and PM2.5)

Particulate matter air pollution is a mixture of solid particles and liquid droplets found in the air (USEPA, 2018c). Some particles, such as dust, dirt, soot, or smoke, are large or dark enough to be seen with the naked eye while other particles are so small they can only be detected using an electron microscope (USEPA, 2018c). Particles are defined by their diameter for air quality regulatory purposes: inhalable particles with diameters that are generally 10 micrometers and smaller (PM10); and inhalable particles with diameters that are 2.5 micrometers or less (PM2.5) (USEPA, 2018c). Thus, PM2.5 comprises a portion or a subset of PM10.

Sources of PM10 emissions include dust from construction sites, landfills and agriculture, wildfires and brush/waste burning, industrial sources, and wind-blown dust from open lands (CARB, 2017). Sources of PM2.5 emissions include combustion of gasoline, oil, diesel fuel, or wood (CARB, 2017). PM10 and PM2.5 may be either directly emitted from sources (primary particles) or formed in the atmosphere through chemical reactions of gases (secondary particles) such as SO_2, NO_X, and certain organic compounds (CARB, 2017).

Both PM10 and PM2.5 can be inhaled, with some depositing throughout the airways; PM10 is more likely to deposit on the surfaces of the larger airways of the upper region of the lung, while PM2.5 is more likely to travel into and deposit on the surface of the deeper parts of the lung, which can induce tissue damage, and lung inflammation (CARB, 2017). Short-term (up to 24 hours' duration) exposure to PM10 has been associated primarily with worsening of respiratory diseases, including asthma and chronic obstructive pulmonary disease, leading to hospitalization and emergency department visits (CARB, 2017). The effects of long-term (months or years) exposure to PM10 are less clear, although studies suggest a link between long-term PM10 exposure and respiratory mortality. The International Agency for Research on Cancer published a review in 2015 that concluded that particulate matter in outdoor air pollution causes lung cancer (CARB, 2017).

Short-term exposure to PM2.5 has been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. Long-term exposure to PM2.5 has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children (CARB, 2017). According to CARB, populations most likely to experience adverse health effects with exposure to PM10 and PM2.5 include older adults with chronic heart or lung disease, children, and asthmatics. Children and infants are more susceptible to harm from inhaling pollutants such as PM10 and PM2.5 compared to healthy adults since they inhale more air per pound of body weight than do adults, spend more time outdoors, and have developing immune systems (CARB, 2017).

Sulfates (SO_4^{2-})

Sulfates in the environment occur as a result of SO_2 (sulfur dioxide) being converted to SO_4^{2-} compounds in the atmosphere where sulfur is first oxidized to SO_2 during the combustion process of sulfur containing, petroleum-derived fuels (e.g., gasoline and diesel fuel) (CARB, 2019d). Exposure to SO_4^{2-}, which are part of PM2.5, results in health effects similar to those from exposure to PM2.5 including reduced lung function, aggravated asthmatic symptoms, and increased risk of emergency department visits, hospitalizations, and death in people who have chronic heart or lung diseases (CARB, 2019c). Population groups with higher risks of experiencing adverse health effects with exposure to SO_4^{2-} include children, asthmatics, and older adults who have chronic heart or lung diseases (CARB, 2019c).

Visibility-Reducing Particles

Visibility-reducing particles come from a variety of natural and manmade sources and can vary greatly in shape, size and chemical composition. Visibility reduction is caused by the absorption

and scattering of light by the particles in the atmosphere before it reaches the observer. Certain visibility-reducing particles are directly emitted to the air such as windblown dust and soot, while others are formed in the atmosphere through chemical transformations of gaseous pollutants (e.g., sulfates, nitrates, organic carbon particles) which are the major constituents of particulate matter. As the number of visibility reducing particles increases, more light is absorbed and scattered, resulting in less clarity, color, and visual range (CARB, 2011a). Exposure to some haze-causing pollutants have been linked to adverse health impacts similar to PM10 and PM2.5 as discussed above (CARB, 2011a).

Toxic Air Contaminants

A TAC is defined by California Health and Safety Code Section 39655:

> *"Toxic air contaminant" means 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 act (42 U.S.C. Sec. 7412(b)) is a toxic air contaminant.*

Diesel particulate matter, which is emitted in the exhaust from diesel engines, was listed by the State as a toxic air contaminant in 1998. Most major sources of diesel emissions, such as ships, trains, and trucks operate in and around ports, railyards, and heavily traveled roadways. These areas are often located near highly populated areas resulting in greater health consequences for urban areas than rural areas (CARB, 2017). Diesel particulate matter has historically been used as a surrogate measure of exposure for all diesel exhaust emissions. Diesel particulate matter consists of fine particles (fine particles have a diameter <2.5 µm), including a subgroup of ultrafine particles (ultrafine particles have a diameter <0.1 µm). Collectively, these particles have a large surface area which makes them an excellent medium for absorbing organics. The visible emissions in diesel exhaust include carbon particles or "soot." Diesel exhaust also contains a variety of harmful gases and cancer-causing substances.

Exposure to diesel particulate matter may be a health hazard, particularly to children whose lungs are still developing and the elderly who may have other serious health problems. Diesel particulate matter levels and resultant potential health effects may be higher in proximity to heavily traveled roadways with substantial truck traffic or near industrial facilities. According to CARB, diesel particulate matter exposure may lead to the following adverse health effects: (1) aggravated asthma; (2) chronic bronchitis; (3) increased respiratory and cardiovascular hospitalizations; (4) decreased lung function in children; (5) lung cancer; and (6) premature deaths for people with heart or lung disease (CARB, 2017; CARB, 2008).

Airborne Fungus (Valley Fever)

Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil, where winters are mild and there is sparse rainfall. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia

(spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The spores are often found in the soil around rodent burrows and archaeological (human-inhabited) sites. The cocci fungus lives as a saprophyte in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-moving activities and become airborne. Agricultural workers, construction workers, and other people who work outdoors and who are exposed to wind and dust are more likely to contract Valley Fever. Children and adults whose hobbies or sports activities expose them to wind and dust are also more likely to contract Valley Fever. After the fungal spores have settled in the lungs, they change into a multicelluar structure called a spherule. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules.

About 60 percent of Valley Fever cases are mild and display flu-like symptoms or no symptoms at all. Of those who are exposed and seek medical treatment, the most common symptoms include fatigue, cough, loss of appetite, rash, headache, and joint aches. In some cases, painful red bumps may develop on the skin. One important fact is that these symptoms are not unique to Valley Fever and may be caused by other illnesses as well. Identifying and confirming this disease require specific laboratory tests, including administering the Valley Fever Skin Test (called coccidioidin or spherulin), which indicates prior exposure to the fungus (Valley Fever Center for Excellence, 2010a). It should be noted that the incident rate for Valley Fever in Kern County within the MDAB is less than the incident rate in Kern County within the San Joaquin Valley Air Basin, where the highest incidence rate within California occurs (Valley Fever Center for Excellence, 2010a).

Asbestos

Asbestos is a term used for several types of naturally-occurring fibrous minerals found in many parts of California. The three most common types of asbestos are chrysotile, amosite, and crocidolite. Chrysotile, also known as white asbestos, is the most common type of asbestos found in buildings. Chrysotile makes up approximately 90 to 95 percent of all asbestos contained in buildings in the United States. Naturally-occurring asbestos occurs in certain geologic environments that contain serpentinite and ultramafic rocks, which are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and Coast Ranges. According to information provided by the Department of Conservation Division of Mines and Geology, the project site is not located in an area where naturally occurring asbestos is likely to be present (Van Gosen, et al., 2011).

Attainment Status

The extent and severity of pollutant concentrations in the MDAB are a function of the area's natural physical characteristics (weather and topography) and man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and dispersion of pollutants throughout the MDAB,

making it an area of high pollution potential. Pollutant concentrations in the MDAB vary with location, season, and time of day. Table 3.5-1 shows the attainment status within the MDAB for each criteria pollutant.

As shown in Table 3.5-1, the MDAB is designated under federal or State ambient air quality standards as non-attainment for O_3 and PM10. The major sources of air pollution in the MDAB are divided into four major source classifications: point, and area stationary sources, and on-road and off-road mobile sources. Point and area sources are the two major subcategories of stationary sources. Point sources are permitted facilities that contain one or more emission sources at an identified location (e.g., power plants, refineries, emergency generator exhaust stacks). Area sources consist of many small emission sources (e.g., residential water heaters, architectural coatings, consumer products, restaurant charbroilers and permitted sources such as large boilers) which are distributed across the region. Mobile sources consist of two main subcategories: on-road sources (such as cars and trucks) and off-road sources (such as heavy construction equipment).

TABLE 3.5-1
ATTAINMENT STATUS FOR THE MOJAVE DESERT AIR BASIN

Pollutant	National Standards (NAAQS)	California Standards (CAAQS)
O_3 (1-hour standard)	Attainment [a]	Non-attainment
O_3 (8-hour standard)	Non-attainment – Serious	Non-attainment
CO	Unclassifiable/Attainment	Unclassified
NO_2	Unclassified	Attainment
SO_2	Unclassified	Attainment
PM10	Unclassifiable/Attainment	Non-attainment
PM2.5	Unclassifiable/Attainment	Unclassified
Lead (Pb)	Unclassifiable/Attainment	Attainment

N/A = not applicable

[a] The NAAQS for 1-hour O_3 was revoked on June 15, 2005, for all areas except Early Action Compact areas.
SOURCE: EKAPCD, 2018.

Existing Conditions

Ambient Air Quality Conditions in Kern County

Criteria pollutants that are monitored in Kern County include O_3, NO_2, PM10, and PM2.5. Criteria pollutants that are not monitored in the County or MDAB include CO, SO_2, and Pb. For the criteria pollutants that are monitored in Kern County, Table 3.5-2 summarizes the most recent monitoring data available from CARB for the years 2016 to 2018. As shown, the pollutant concentrations for O_3, PM10, and PM2.5 in Kern County exceeded the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS).

TABLE 3.5-2
AMBIENT AIR QUALITY IN KERN COUNTY[a]
CRITERIA POLLUTANT CONCENTRATIONS, 2016 TO 2018

Pollutant/Standard[b]	2016	2017	2018
Ozone, O_3 (1-hour)			
Maximum Concentration (ppm)	0.109	0.122	0.120
Days > CAAQS (0.09 ppm)	23	23	27
Ozone, O_3 (8-hour)			
Maximum Concentration (ppm)	0.093	0.104	0.102
4th High 8-hour Concentration (ppm)	0.092	0.090	0.096
Days > CAAQS (0.070 ppm)	96	111	101
Days > NAAQS (0.070 ppm)	89	107	96
Nitrogen Dioxide, NO_2 (1-hour)			
Maximum Concentration (ppm)	0.058	0.066	0.061
Days > CAAQS (0.18 ppm)	0	0	0
98th Percentile Concentration (ppm)	0.050	0.058	0.051
Days > NAAQS (0.100 ppm)	0	0	0
Nitrogen Dioxide, NO_2 (Annual)			
Annual Arithmetic Mean (0.030 ppm)	0.012	0.013	0.013
Respirable Particulate Matter, PM10 (24-hour)			
Maximum Concentration (µg/m^3)	58.9	45.5	52.3
Samples > CAAQS (50 µg/m^3)	1	0	0
Samples > NAAQS (150 µg/m^3)	0	0	0
Respirable Particulate Matter, PM10 (Annual)			
Annual Arithmetic Mean (20 µg/m^3)	16.1	16.4	18.0
Fine Particulate Matter, PM2.5 (24-hour)			
Maximum Concentration (µg/m^3)	66.7	101.8	100.9
98th Percentile Concentration (µg/m^3)	63.6	88.1	98.5
Samples > NAAQS (35 µg/m^3)	25	30	38
Fine Particulate Matter, PM2.5 (Annual)			
Annual Arithmetic Mean (12 µg/m^3)	15.9	18.2	19.4

[a] Due to the location of the project site, the monitoring data reflects a County-wide average of emissions levels for **O_3**, NOx, and PM10. Monitoring stations for these pollutants in Kern County include stations located in Ridgecrest, Mojave, Maricopa, Lebec, Shaffer, Oildale, Bakersfield, Lamont, and Edison. All pollutants are not monitored at all stations. For PM10, data is taken from the Canebrake station which is located approximately 3.5 miles northeast of the eastern boundary of the project site and is most representative of air quality near the project site. Canebrake only monitors for PM10.

[b] ppm = parts per million; µg/m^3 = micrograms per cubic meter

SOURCE: California Air Resources Board, 2019.

Existing Emissions within the Project Site

Currently, the project site is used for agricultural uses, including cultivation of crops and pastures and cattle grazing. Fugitive dust is generated by the existing agricultural activities based on the type of crops, pastures, level of cattle grazing, and the type of agricultural equipment used.

Fugitive dust is particulate matter suspended in the air by wind or by human activities, including the mechanical disturbance of granular material (e.g., agricultural soils) exposed to the air. Dust generated from these open sources is termed "fugitive" because it is not discharged to the atmosphere in a confined flow stream. Common sources of fugitive dust include vehicles traveling on unpaved roads, agricultural tilling operations, soil and/or dirt storage piles, and heavy construction operations. Fugitive dust is a primary source of PM10 and PM2.5 emissions in the MDAB.

The existing conditions on the Onyx Ranch portion of the project site consists of: approximately 776 acres that are currently used for agricultural production on irrigated cropland; approximately 882 acres that are used as irrigated pasture; the Boone Field, which is 96 acres that are irrigated pasture or cropland depending on the year; and 611 acres that are riparian pasture (see Table 2-1 in Chapter 2 Project Description). On the Smith Ranch portion of the project site, 242 acres are irrigated pasture and 278 acres are riparian pasture. CARB provides fugitive emissions factors to estimate PM10 and PM2.5 for agricultural lands depending on the agriculture type (i.e., pasture or cropland). To estimate existing baseline fugitive dust emissions for the project site, CARB's windblown dust emissions factors have been applied to the Onyx Ranch and the Smith Ranch, using emission factors for both pasture and cropland according to the acreages described above (CARB, 1997).[1] Boone Field is quantified separately because it would not change with implementation of the proposed project and, depending on the year, is cultivated as either pasture or cropland. The PM10 and PM2.5 emissions associated with the respective agricultural land cover at the Onyx Ranch and the Smith Ranch are shown in Table 3.5-3. Two existing emissions scenarios are shown, one that assumes the Boone Field is used as pasture and one that assumes the Boone Field is used as cropland.

Existing cultivation and grazing activities on the Onyx Ranch and the Smith Ranch generate fugitive dust due to the use of heavy agricultural equipment and vehicles. Fugitive dust is generated from travel along unpaved roads as cattle are transported from pasture to pasture. Under existing conditions, there are approximately 60 round trips per year used to transport cattle on average 75 miles between the project site and off-site pastures. Emissions of PM10, PM2.5, and other criteria pollutants associated with road dust and cattle transport under existing conditions on the project site are shown in Table 3.5-3.

Based on the existing types of agriculture and cattle transport, existing PM10 emissions from the project site range from 5.45 tons per year to 6.20 tons per year and PM2.5 emissions range from 1.09 to 1.24 tons per year. The details regarding assumptions and calculations that support the emissions shown in Table 3.5-3 are included in Appendix B, Air Quality, Greenhouse Gases and Energy, to this Draft EIR.

[1] Emission factors are the measure of the average amount of a specific pollutant (in this case fugitive particulate matter) discharged into the atmosphere by a specific source (specifically the type of agricultural process).

TABLE 3.5-3
EXISTING PROJECT SITE EMISSIONS

	(tons/year)					
Source	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Project Site with Boone Field Cultivation as Pasture						
Onyx Ranch Pasture	-	-	-	-	0.73	0.15
Onyx Ranch Cropland	-	-	-	-	6.72	1.34
Onyx Ranch Boone Field as Pasture	-	-	-	-	0.08	0.02
Smith Ranch Pasture	-	-	-	-	0.20	0.04
Road Dust	-	-	-	-	<0.01	0.00
Cattle Transport	<0.01	0.03	<0.01	<0.01	<0.01	<0.01
Total	<0.01	0.03	<0.01	<0.01	7.74	1.55
Project Site with Boone Field Cultivation as Cropland						
Onyx Ranch Pasture	-	-	-	-	0.73	0.15
Onyx Ranch Cropland	-	-	-	-	6.72	1.34
Onyx Ranch Boone Field as Cropland	-	-	-	-	0.83	0.17
Smith Ranch Pasture	-	-	-	-	0.20	0.04
Road Dust	-	-	-	-	<0.01	0.00
Cattle Transport	<0.01	0.03	<0.01	<0.01	<0.01	<0.01
Total	<0.01	0.03	<0.01	<0.01	8.49	1.70

NOTES:
Totals may not add exactly due to rounding
Riparian habitat does not result in fugitive emissions of PM10 and PM2.5; therefore, riparian habitat is not called out in the table.
SOURCE: ESA, 2019.

Sensitive Receptors in Proximity to the Project Site

Certain population groups, such as children, elderly, and acutely and chronically ill persons (especially those with cardio-respiratory diseases) are considered more sensitive to the potential effects of air pollution than others. As a result, certain land uses that are occupied by these population groups, such as residences, hospitals and schools, are considered to be air quality-sensitive land uses. The project site consists of agriculture lands with associated agriculture-related buildings and residences. Additionally, the communities of Weldon and Onyx, and a school are located in close proximity to the project site, adjacent to State Route (SR) 178. The closest residential community in Weldon is located south of SR 178 and west of Powers Lane and adjoins an eastern property boundary of the project site. The closest residential community in Onyx is located south of SR 178, west of Worthington Street and directly adjoins an eastern property boundary of the project site. South Fork Elementary School is located adjacent to the project site, directly west of the project boundary, north of SR 178 and west of Fay Ranch Road in Weldon. All other air quality-sensitive uses are located at greater distances from the project site

and would experience lesser potential effects from air quality due to potential emissions from the project site and atmospheric dispersion effects.

Cumulative Setting

The cumulative setting for the proposed project is the MDAB, specifically the areas under the jurisdiction of the EKAPCD. In accordance with Kern County's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* (2006), the geographic scope for cumulative air quality impacts includes projects within a 1- and 6-mile radius of the project site. Kern County's Guidelines require three steps for estimating the potential significance of cumulative impacts: (1) evaluate localized impacts (Guideline Instruction 16a); (2) evaluate consistency with existing air quality plans (Guideline Instruction 16b); and (3) summarize CARB air basin emissions (Guideline Instruction 16c, Kern County, 2006).

3.5.2 Regulatory Framework

Federal

The 1963 federal Clean Air Act (CAA) was the first federal legislation regarding air pollution control and has been amended numerous times in subsequent years, with the most recent amendments occurring in 1990. At the federal level, USEPA is responsible for implementation of certain portions of the CAA including mobile source requirements.

The CAA establishes federal air quality standards and specifies future dates for achieving compliance. The CAA also mandates that the State submit and implement a State Implementation Plan (SIP) for areas not meeting these standards. SIPs must include pollution control measures that demonstrate how the NAAQS will be met. The 1990 amendments to the CAA identify specific emission reduction goals for areas not meeting the NAAQS. These amendments require both a demonstration of reasonable further progress toward attainment and incorporation of additional sanctions for failure to attain or to meet interim milestones. The sections of the CAA that are most applicable to the proposed project include Title I (Non-attainment Provisions).

Title I requirements are implemented for the purpose of attaining NAAQS for the following criteria air pollutants: O_3; NO_2; CO; SO_2; PM10; and lead. The NAAQS were amended in July 1997 to include an 8-hour standard for O_3 and to adopt a NAAQS for PM2.5. The NAAQS were also amended in September 2006 to include an established methodology for calculating PM2.5 as well as revoking the annual PM10 threshold. Table 3.5-4 shows the NAAQS currently in effect for each criteria air pollutant.

TABLE 3.5-4
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Average Time	California Standards[a]		National Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
O_3[h]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
NO_2[i]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemi-luminescence	100 ppb (188 µg/m^3)	None	Gas Phase Chemi-luminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		53 ppb (100 µg/m^3)	Same as Primary Standard	
CO	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10mg/m^3)		9 ppm (10 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
SO_2[j]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m3)	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[j]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[j]	—	
PM10[k]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
PM2.5[k]	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3 [k]	15 µg/m^3	

TABLE 3.5-4 (CONTINUED)
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS

Pollutant	Average Time	California Standards[a]		National Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
Visibility Reducing Particles[L]	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates (SO_4)	24 Hour	25 µg/m^3	Ion Chromatography			

NOTES:

a California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, and particulate matter (PM10, PM2.5, and visibility reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

b National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 micrograms/per cubic meter (µg/m^3) is equal to or less than 1. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

d Any equivalent procedure which can be shown to the satisfaction of the California Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.

e National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

f National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

g Reference method as described by the USEPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the USEPA.

h On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

i To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb.

j On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated non-attainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

k On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3.

l In 1989, the California Air Resources Board converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

SOURCE: California Air Resources Board, 2016.

State of California

California Clean Air Act

The California Clean Air Act (CCAA), signed into law in 1988, requires all areas of the State to achieve and maintain the CAAQS by the earliest practical date. The CAAQS are established to protect the health of the most sensitive groups and apply to the same criteria air pollutants as the federal CAA and also includes State-identified criteria air pollutants, such as sulfates and visibility-reducing particles. Table 3.5-4, provided above, shows the CAAQS currently in effect for each of the federally identified criteria air pollutants, as well as State-recognized pollutants, such as sulfates and visibility-reducing particles.

California State Implementation Plan

As described above, the federal CAA requires areas with unhealthy levels of O_3, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop plans, known as SIPs. SIPs are comprehensive plans that describe how an area will attain NAAQS. The 1990 amendments to the federal CAA set deadlines for attainment based on the severity of an area's air pollution problem.

SIPs are not single documents. They are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, State regulations, and federal controls. Many of California's SIPs rely on the same core set of control strategies, including emission standards for cars and heavy trucks, fuel regulations and limits on emissions from consumer products. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts, such as EKAPCD, and other agencies, such as the Department of Pesticide Regulation, prepare SIP elements and submit them to CARB for review and approval. CARB forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The Code of Federal Regulations Title 40, Chapter I, Part 52, Subpart F, Section 52.220 lists all of the items which are included in the California SIP. The EKAPCD documents that are part of California’s SIP and are applicable to the proposed project are described further below.

California Mobile Source Regulations

Mobile sources are a significant contributor to the air pollution in California. CARB has established exhaust emission standards for automobiles, which are more stringent than the federal emissions standards. Through its Mobile Sources Program, CARB has developed programs and policies to reduce emissions from on-road heavy-duty diesel vehicles. Specifically, the On-Road Heavy-Duty Diesel Vehicle Regulation requires diesel trucks and buses that operate in the State to be upgraded to reduce emissions. By January 1, 2023, nearly all vehicles must have engines certified to 2010 model year engines or equivalent.

California Air Resources Board On-Road and Off-Road Vehicle Rules

In 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to limit heavy-duty diesel motor vehicle idling in order to reduce public exposure to diesel PM and other TACs. The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater

than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure does not allow diesel-fueled commercial vehicles to idle for more than 5 minutes at any given time.

In 2008, CARB approved the Truck and Bus Regulation to reduce NO_X, PM10, and PM2.5 emissions from existing diesel vehicles operating in California. The requirements were amended in December 2010 and apply to nearly all diesel fueled trucks and busses with a gross vehicle weight rating greater than 14,000 pounds. Beginning January 1, 2020, this requirement will be enforced by the California Department of Motor Vehicles (DMV). In 2017, Senate Bill 1 (SB1), the Road Repair and Accountability Act of 2017, authorized the DMV to check that vehicles are compliant with, or exempt from CARB's Truck and Bus Regulation. If a vehicle is not compliant with the rule, DMV will no longer register that vehicle starting January 1, 2020.

In addition to limiting exhaust from idling trucks, CARB promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The regulation aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission controlled models.

Sustainable Communities and Climate Protection Act of 2008 (SB 375)

SB 375 directs CARB to set regional targets for reducing greenhouse gas emissions from cars and light trucks (OPR, 2011). As part of the transportation planning process, each region's Metropolitan Planning Organization (MPO) is responsible for preparing a Sustainable Communities Strategies (SCS) that integrates transportation, land-use, and housing policies to plan for achievement of the emissions target for their region. Specifically, SB 375 focuses on reducing VMT and encouraging more compact, complete, and efficient communities. Further, SB 375 established CEQA streamlining and relevant exemptions for projects that are determined to be consistent with the land use assumptions and other relevant policies of an adopted SCS.

Local

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the Kern River Valley Specific Plan (KRVSP) area, which was addressed in the KRVSP adopted by Kern County in 2011. The KRVSP consists of elements that include goals, policies, and implementation measures related to the air quality within the Kern River Valley. The applicable elements and their goals, polices, and implementation measures are as follows:

Conservation Element

The Conservation Element focuses on practices that can ensure the long-term survival of resources that Kern River Valley residents enjoy and cherish. The Conservation Element

identifies goals, policies, and implementation measures to maintain resources in the Kern River Valley Area. The applicable goal and policies are as follows:

Air Quality

Goal 5.5.1: Protect and improve air quality in the Kern River Valley.

Policy 5.5.1: Cooperate with the Eastern Kern Air Pollution Control District to implement their Air Quality Attainment Plans and to meet federal and State standards. Kern County shall require dust control measures for roads as conditions of approval for subdivision maps and other discretionary actions.

Policy 5.5.2: Continue to enforce the Kern County grading ordinance through the Kern County Engineering, Surveying and Permit Services Department, along with dust control and other rules and measures through the Eastern Kern Air Pollution Control District to mitigate air quality effects during the construction of new development.

Policy 5.5.3: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the Eastern Kern Air Pollution Control District.

Policy 5.5.10: Create incentives for the use of domestic and commercial solar and wind energy uses to conserve fossil fuels and improve air quality.

Solar and Wind Energy

Goal 5.6.1: Promote use of solar and wind energy in Kern River Valley.

Policy 5.6.1: Encourage the use of domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009).

Land Use, Open Space, and Conservation Element

The Land Use, Open Space, and Conservation Element identifies goals, policies, and implementation measures to maintain air quality standards within the County. The applicable policies are as follows:

Air Quality

Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision making body, as part of its deliberations, will ensure that:

(1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted.

(2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.

Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.

Policy 21: The County shall support air districts efforts to reduce PM10 and PM2.5 emissions.

Eastern Kern Air Pollution Control District Rules and Regulations

The EKAPCD has primary responsibility for regulating stationary sources of air pollution situated within its jurisdictional boundaries. To this end, the EKAPCD implements air quality programs required by State and federal mandates, enforces rules and regulations based on air pollution laws, and educates businesses and residents about their role in protecting air quality. The EKAPCD is also responsible for managing and permitting existing, new, and modified sources of air emissions within the Mojave Desert portion of Kern County and also has established the EKAPCD Rules and Regulations (as amended on March 12, 2015) to ensure compliance with local, State, and federal air quality regulations. The following rules from the EKAPCD Rules and Regulations are applicable to the proposed project:

Rule 210.1 New and Modified Stationary Source Review

Rule 210.1 establishes stationary source offset levels for new and modified stationary sources of air pollutants. Under this rule, the EKAPCD has established required offsets for when the emissions from a source exceed the following trigger levels:

- PM_{10} – 15 tons/year
- SO_X (as SO_2) – 27 tons/year
- VOCs – 25 tons/year
- NO_X (as NO_2) – 25 tons/year

Rule 401 Visible Emissions

Rule 401 states that a person shall not discharge into the atmosphere, from any single source of emissions whatsoever, any air contaminant from any single emissions source for a period or periods aggregating more than 3 minutes in any 1 hour which is:

- As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines.
- Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in Subsection A [of the Rules].

Rule 402 Fugitive Dust

Rule 402 addresses significant man-made dust sources from active operations. An active operation is defined as "Activity capable of generating fugitive dust, including any open storage pile, earth-moving activity, construction/demolition activity, disturbed surface area, and non-emergency movement of motor vehicles on unpaved roadways and any parking lot served by an unpaved road subject to this Rule." Rule 402 applies to specified bulk storage, earthmoving, construction and demolition, and man-made conditions resulting in wind erosion, and includes the following requirements:

- A person shall not cause or allow emissions of fugitive dust from any active operation to remain visible in the atmosphere beyond the property line of the emission source.
- A person shall utilize one or more Reasonably Available Control Measures (RACM) or Bulk Material Control Measures (BMCM) to minimize fugitive dust emissions from each source type that is part of any active operation, including unpaved roadways.
- No person shall conduct a large operation without filing for and obtaining an approved fugitive dust emission control plan. Large operation is defined as "Any construction activity on any site involving 10 or more contiguous acres of disturbed surface area, or any earthmoving activity exceeding a daily volume of 10,000 cubic yards, or relocating more than 2,500 cubic yards per day of bulk materials at least three days per year."
- EKAPCD may require on-site PM_{10} monitoring for any large operation that causes downwind PM_{10} ambient concentrations to increase more than 50 micrograms per cubic meter above upwind concentrations as determined by utilizing high-volume particulate matter samplers, or other USEPA-approved equivalent method(s).

Rule 402.2 Agricultural Operations

The purpose of Rule 402.2 is to prevent, reduce, and mitigate ambient concentrations of anthropogenic fugitive dust emissions generated from agricultural operations 10 acres and larger through implementation of conservation management practices. Rule 402.2 requires implementation of at least one conservation management practice for each of the following categories: (1) land preparation and cultivation, (2) harvest activities, (3) unpaved roads and traffic areas, and (4) windblown dust. Conservation management practices are not required for categories 1 and 2 on parcels implementing conservation tillage.[2]

Rule 404.1 Particulate Matter Concentrations – Desert Basin

Rule 404.1 pertains to Particulate Matter Concentrations – Desert Basin and states:

- A person shall not discharge into the atmosphere from any single source operation, in service on the date this Rule is adopted, particulate matter in excess of 0.2 grains per cubic foot of gas at standard conditions.

[2] Conservation tillage is defined in Rule 402.2 as follows: A tillage system that reduces a minimum of three tillage operations. This system reduces soil and water loss by reducing the number of passes and by leaving crop residue on the field after harvest as well as managing the residue so that it remains intact during the planting season. It reduces the number of passes and amount of soil disturbance. It improves soil because it retains plant residue and increases organic matter.

- A person shall not discharge into the atmosphere from any single source operation, the construction or modification of which commenced after the adoption of this Rule, particulate matter in excess of 0.1 grains per cubic foot of gas at standard conditions.

Rule 417 Agricultural and Prescribed Burning

Rule 417 states that no person shall knowingly set, conduct or allow agricultural or prescribed burning unless he or she has a valid burn permit from the District or designated agency. A valid burn permit shall be required from the fire protection agency that has jurisdiction in the area of the proposed burn.

Rule 419 Nuisance

Rule 419 states that a person shall not discharge from any source whatsoever such quantities of contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or that endanger the comfort, repose, health, or safety of such persons or the public or that cause or have a natural tendency to cause injury or damage to business or property.

Rule 423 National Emissions Standards for Hazardous Air Pollutants

Rule 423 adopts the USEPA's National Emissions Standards for Hazardous Air Pollutants by reference, which grants EKAPCD the ability to ensure that all sources of hazardous air pollution would comply with applicable standards, criteria, and requirements set forth in Title 40, Chapter 1, parts 61 and 63, of the Code of Federal Regulations that are in effect as of February 10, 2010.

Air Quality Management Plans/State Implementation Plans

As required by the federal CAA and CCAA, air basins or portions thereof have been classified as either "attainment" or "non-attainment" for each criteria air pollutant based on whether or not the standards have been achieved. Jurisdictions of non-attainment areas are also required to prepare an air quality management plan (AQMP) that includes strategies for achieving attainment. The following AQMPs have been adopted by EKAPCD and submitted to CARB as part of California's SIP.

2003 Ozone Attainment Demonstration, Maintenance Plan, and Redesignation Request

On January 9, 2003, EKAPCD adopted the East Kern Ozone Attainment Demonstration, Maintenance Plan and Redesignation Request for the East Kern County non-attainment area. On May 1, 2003, the EKAPCD Board adopted amendments to the January 2003 plan and on December 9, 2003, CARB adopted and submitted the amended plan to USEPA. The 2003 Ozone Attainment Demonstration, Maintenance Plan, and Redesignation Request primarily addresses the 1-hour O_3 NAAQS.

2017 Reasonably Available Control Technology SIP

As a moderate O_3 non-attainment area, EKAPCD is required to adopt Reasonably Available Control Technology (RACT) rules for all sources of O_3 precursor emissions. EKAPCD has fulfilled this mandate by adopting a number of rules between 1987 and 2005 which aim to reduce O_3 precursor emissions. The EKAPCD adopted the Reasonably Available Control Technology SIP for the 2008 Ozone NAAQS (2017 RACT SIP) on May 11, 2017. CARB submitted the 2017 RACT SIP to the USEPA as a revision to the California SIP on August 9, 2017.

2017 Ozone Attainment Plan

The EKAPCD is in non-attainment for the national and State 8-Hour O3 standard and the State 1-hour O_3 standard. Accordingly, in 1993 the EKAPCD adopted an attainment plan to meet the national and State standards for O_3 pursuant to existing mandates. On September 28, 2017, CARB adopted the EKAPCD Plan for 2008 Federal 75 ppb 8-Hour Ozone Standard (2017 Ozone Attainment Plan) as a revision to the California SIP. The District Board adopted the 2017 Ozone Attainment Plan at a public hearing on July 27, 2017. The Plan showed significant progress toward reduced O_3 within the district. However, the attainment status of the district has not changed and the O_3 attainment plan remains in effect. The Plan addressed all required elements, emissions reductions, and control measures necessary to demonstrate attainment with the 2008 8-hour Ozone NAAQS by 2020.

Eastern Kern Air Pollution Control District CEQA Thresholds

As discussed above, in December 2006, the County issued the *Guidelines for Preparing an Air Quality Assessment for use in Environmental Impact Reports* (Kern County, 2006). The Guidelines state that the latest version of air quality models shall be used for the appropriate application. The Guidelines also establish thresholds of significance that should be used in all evaluations and environmental documents for CEQA compliance. Projects that produce emissions that exceed the significance thresholds specified in the Guidelines shall be considered significant for a project level and/or cumulatively for impacts to air quality (Kern County, 2006). The significance thresholds are identified in the next section below.

3.5.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to page 3.5-1 above for a summary of the environmental issues and significance criteria included in this Draft EIR for the analysis of air quality. This Draft EIR assumes implementation of the proposed project would have a significant impact related to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Violate any air quality standard as adopted by the Eastern Kern Air Pollution Control District or established by the U.S. Environmental Protection Agency or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is designated non-attainment under an applicable federal or State ambient air quality standard. Specifically, impacts would be significant if the implementation of the proposed project would exceed any of the following thresholds:
  - EKAPCD thresholds for operational and area sources
    - Reactive Organic Gases (ROG) of 25 tons per year
    - Oxides of nitrogen (NO_X) of 25 tons per year
    - Particulate matter (PM10) of 15 tons per year

  - EKAPCD threshold for stationary sources
    - 25 tons per year
- Expose sensitive receptors to substantial pollutant concentrations.

Methodology

The analysis presented within this section is based on both qualitative and quantitative approaches for determining air quality impacts associated with the proposed project's operation and maintenance. As described below, the quantitative analysis focuses on emissions associated with the proposed field and pasture transitions and emissions associated with construction and operation of the proposed shallow, low-volume wells.

Field and Pasture Transitions

The nature of the proposed project is such that the existing agricultural use of the project site for grazing would continue. The Onyx Ranch would transition from irrigated agricultural fields and pastures to non-irrigated fields and pastures. No substantial changes to agricultural practices on the Smith Ranch are anticipated other than a 33 percent reduction in the existing irrigated acres. As stated in Chapter 2 Project Description, on the Smith Ranch, more effective use of existing available forage can be made with modifications to grazing management activities and the implementation of a Grazing Management Plan, including seasonal livestock rotation, residual dry matter targets, fence maintenance (including potential replacement of existing fences), and establishment of additional livestock watering locations.

As detailed in the project analysis below, the agricultural equipment anticipated to be used under the proposed project would be similar to or less intensive than the existing operations because the fields and pastures on the Onyx Ranch would be planted/seeded with vegetation that could persist under a natural precipitation regime. As such, the frequency and intensity of active land management to plant and irrigate the project site would be reduced; therefore, the quantification of exhaust emissions associated with agricultural equipment was not done as part of the analysis since emissions are anticipated to remain the same or decrease. However, due to the transition from irrigated to non-irrigated agricultural land uses, there is the potential for the proposed project to result in a change in quantity of fugitive dust emitted from the fields and pastures within the project site. As part of the analysis below, fugitive dust (PM10 and PM2.5) emissions are quantified for land preparation activities during field and pasture transition as well as windblown fugitive dust from pasture.

Groundwater Wells

There are currently five electric-powered groundwater wells and five solar-powered groundwater wells located on the Onyx Ranch. Solar-powered wells operate only during daylight hours and are not connected to the existing electrical power grid; thus, only the electric wells draw energy that is tied to air emissions from generation of electricity at regional power plants. The proposed project would not replace the reduced surface water diversions with groundwater pumped on the project site. Groundwater pumping would continue per existing conditions for non-irrigation purposes such as on-site houses, livestock, fire management, and dust control. Annual operation

of the existing wells would decrease because groundwater would only continue to be used potentially for the irrigation of the Boone Field on the Onyx Ranch.

However, the proposed project would include the development, on an as needed basis, up to 12 shallow, low-volume wells powered by solar facilities to provide livestock water and improved livestock distribution for more effective use of the available forage. Although the proposed wells would be developed on an as-needed basis, as a conservative analysis for air emissions, it was assumed that all wells would be developed at one time. The proposed wells would be 6 inches in diameter and approximately 20 to 50 feet deep. Each well location would have a 2,000 to 4,000 gallon aboveground tank for water storage for use during weather conditions when the solar power for well pumping does not operate. The water tank would be on the ground and connect by an aboveground pipe to a livestock trough. The footprint of aboveground well components would be approximately 20 feet by 40 feet. Construction of each proposed well would take up to 3 days. Emissions from the construction of up to 12 shallow, low-volume wells were estimated using: the California Emissions Estimator Model (CalEEMod) Version 2016.3.2,[3] which is the most recent version of the model, for off-road construction equipment; and the most recent version of the CARB on-road vehicle Emissions Factor (EMFAC2017)[4] model for on-road trips associated with hauling of extracted soils and worker trips. EMFAC2017 emission factors were used outside of CalEEMod to quantify on-road emissions as the current version of CalEEMod uses the prior EMFAC2014 version.

Operations and Maintenance

Under existing conditions on the Onyx Ranch, approximately 776 acres are currently used for agricultural production of cropland; approximately 882 acres are used as irrigated pasture. Under the proposed project approximately 1,658 acres would be converted from currently irrigated fields and pastures to non-irrigated fields and pastures. The existing 96-acre Boone Field would continue to be cultivated as irrigated crop or pasture. Additionally, the 60 round trips currently used to transport cattle up to 75 miles to other off-site pasture would be reduced to 30 round trips; however, the average distance traveled between pastures would remain the same.

It is assumed that the current agricultural equipment used onsite would be used for the initial field and pasture transition process and then would be maintained or reduced as necessary for maintenance of the non-irrigated fields and pastures. Air quality emissions associated with the use of this equipment would be consistent with existing conditions for the initial field and pasture transition and would be similar or reduced for future years. Therefore, exhaust emissions associated with the operation of the agricultural equipment for purposes of the proposed project's maintenance was not quantified as part of this analysis.

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3 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 construction and operational criteria pollutant and greenhouse gas (GHG) emissions from a variety of land use projects and construction equipment and activities.

4 EMFAC2017 is the latest emissions inventory model that calculates emissions inventories for motor vehicles operating on roads in California and reflects CARB's understanding of how vehicles travel and how much they pollute.

While no changes to the Boone Field would occur with respect to types of crops, the property currently varies between pasture and crop cultivation. Both of these uses have different fugitive dust emissions. Therefore, in order to estimate the change in emissions from existing conditions to the proposed project's conditions, the emissions from the Boone Field operations were also quantified based on the type of agriculture use. Therefore, emissions associated with the proposed project are presented for two scenarios that account for different cultivation practices at the Boone Field.

The proposed project would transition fields on the Onyx Ranch that are currently used for cultivation of crops to pasture; therefore, the proposed project would result in an increase in the acreage of pasture available for grazing. However, given that the pastures would not be irrigated, the amount of forage that would be available for grazing on an annual basis would be reduced relative to existing conditions. Therefore, implementation of the proposed project would not result in an increase in the number of cattle grazing on the project site. As such, the proposed project is not anticipated to change the potential for overgrazing on the project site relative to existing conditions. Overgrazing could result in emissions of fugitive dust from denuded soils. As stated in Chapter 2 Project Description the proposed project would include preparation of a Grazing Management Plan, which would include seasonal livestock rotation and residual dry matter targets that would prevent overgrazing from occurring. Therefore, it is anticipated that fugitive dust emissions from cattle grazing practices would be the same or reduced relative to existing conditions as the number of cattle would not increase. Overgrazing is not addressed further as it is not anticipated to increase under the proposed land management practices.

Once field transitions are complete, the analysis assumes that one-fifth of the total acreage of non-irrigated pasture would need to be reseeded in a given year for maintenance purposes. The analysis as follows estimates the associated potential PM10 and PM2.5 emissions, which is the fugitive dust, from the transition as well as annual maintenance of the project site based on fugitive emissions factors provided by CARB (CARB, 2016c; CARB, 1997). Detailed emissions calculations are included as Appendix B, Air Quality, Greenhouse Gas, and Energy, to this Draft EIR.

Impact Analysis

Air Quality Plan

Potential Impact AIR-1: Would the proposed project conflict with or obstruct implementation of the applicable air quality plan?

In general, a project would not interfere with the applicable air quality plan if it is consistent with growth assumptions used during preparation of the applicable air quality plan and if the project implements all reasonably available and feasible air quality control measures. The consistency of the proposed project with the applicable Air Quality Management Plans (AQMPs) is discussed below. The AQMPs that are applicable to the proposed project include the 2003 East Kern Ozone Attainment Demonstration, Maintenance Plan and Redesignation Request, the 2017 RACT SIP, and the 2017 Ozone Attainment Plan.

Required Evaluation Guidelines

CEQA Guidelines and the CAA (Sections 176 and 316) contain specific references regarding the need to evaluate consistencies between a project and the applicable AQMP. To accomplish this, CARB has developed a three-step approach to determine project conformity with the applicable AQMP:

Step 1: Determination that an AQMP is being implemented in the area where the project is being proposed. EKAPCD's most recently adopted AQMPs are the 2017 RACT SIP and the 2017 Ozone Attainment Plan, both of which were approved by CARB and USEPA.

Step 2: The project must be consistent with the growth assumptions of the applicable AQMP: In general, a project would not interfere with the applicable air quality plan if it is consistent with growth assumptions used to form the applicable air quality plan and/or would not be considered growth-inducing. As explained in the Chapter 4 Growth Inducement of this Draft EIR, implementation of the proposed project would not induce growth. Implementation of the proposed project would not change the land use designation for the project site, nor would it result in an increase in employment. (Refer to Section 3.3 Population and Employment.) The proposed project would transition irrigated fields and pasture to non-irrigated fields and pasture, and the project site would continue to be used for cattle grazing. The proposed project would be consistent with the existing land use designation in the current Kern County General Plan and KRVSP. (Refer to Section 3.4 Agriculture and Section 3.12 Land Use for additional information.) The proposed project would not introduce a land use that would induce population or housing growth that could result in a substantial increase in vehicle miles traveled and associated criteria pollutant emissions. As such, the proposed project would be consistent with the growth assumptions of the AQMPs.

Step 3: The project must contain in its design all reasonably available and feasible air quality control measures. The proposed project would be required to incorporate and comply with all applicable EKAPCD rules and regulations to reduce fugitive dust emissions. As stated in Chapter 2 Project Description during the implementation and on-going operational activities for the proposed project, potential fugitive dust emissions would be suppressed per the EKAPCD Rule 402, Fugitive Dust, which requires control of fugitive dust from certain unpaved roadways, bulk storage piles, construction and demolition projects, and land leveling and clearing projects. Similarly, pursuant to EKAPCD Rule 402.2, Agricultural Operations, commercial agricultural operations 10 acres and larger must submit a Conservation Management Practice plan to the EKAPCD with at least one conservation management practice for each of the following categories: (1) land preparation and cultivation, (2) harvest activities, (3) unpaved roads and traffic areas, and (4) windblown dust. Conservation management practices are not required for categories 1 and 2 on parcels implementing conservation tillage. As discussed in Chapter 2 Project Description site preparation to convert existing irrigated pasture to non-irrigated pasture and grazing lands may include broadcast seeding followed by pasture harrow or direct drill seeding. Application of some irrigation water (1 acre-foot per acre) as well as follow up seeding in subsequent years may be needed based on weather patterns and success of the initial seeding. Maintenance of vegetative cover on these pastures prior to seeding would help to reduce wind erosion to levels similar to the current conditions. The use of vegetative cover and application of

water are consistent with conservation management practices listed in Rule 402.2 for land preparation and cultivation, harvest activities, unpaved roads and traffic areas, and windblown dust. The RRBWSD will submit a new or modified Conservation Management Practice plan for the proposed project to the EKAPCD, as needed.

Additionally, the proposed project would be compatible with the KRVSP Conservation Element Air Quality Policies 5.5.1 through 5.5.3, which require enforcement of measures to suppress fugitive dust. The proposed project would also occur in compliance with KRVSP Conservation Element Air Quality Implementation Measure 5.5-1 that requires fugitive dust control during active agriculture activities, water ditch maintenance, harvesting activities, and maintenance of fallow land. If water would be required to manage dust and achieve dust suppression on the project site, the RRBWSD would use either groundwater or a portion of the diverted flow consistent with the proposed project.

In addition, as discussed below under Potential Impact AIR-2, the proposed project would not result in emissions of criteria pollutants that exceed the significance thresholds established by the EKAPCD for implementing CEQA and as adopted by the Kern County Board of Supervisors, including PM10, PM2.5, and fugitive dust. During operation and maintenance, the proposed project would result in a reduction in fugitive dust emissions (PM10 and PM2.5).

Conclusions. Using CARB's three-step approach, the proposed project would: be consistent the air quality plan because it would be consistent with growth assumptions used to form the applicable AQMPs; implement all applicable and reasonably available and feasible air quality control measures; and not exceed the EKAPCD thresholds of significance. Therefore, the impact would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The proposed project would be consistent the air quality plan because it would: be consistent with growth assumptions used to form the applicable air quality plan; would implement all applicable and reasonably available and feasible air quality control measures; and not exceed the EKAPCD thresholds. Therefore, the impact would be less than significant.

Air Quality Standards

Potential Impact AIR-2: Would the proposed project violate any air quality standard as adopted by the EKAPCD or established by the USEPA or contribute substantially to an existing or projected air quality violation?

Field and Pasture Transitions and Well Construction

Initial implementation of the proposed project would include the transition of irrigated fields and pasture to non-irrigated pasture or native vegetation on the Onyx Ranch, as well as construction of up to 12 shallow, low-volume wells. The emissions of criteria pollutants are conservatively estimated based on approximately 1,658 acres of irrigated fields and pasture being converted to non-irrigated pasture or native vegetation in one year. Emissions from transition activities are compared with emissions from existing activities. As discussed previously, emissions from agricultural equipment would be anticipated to be similar to or less than the existing activities and, therefore, are not quantified. Two emissions scenarios calculated for the proposed project account for the continued use of the Boone Field as either irrigated cropland or irrigated pasture.

The calculated emissions that would result due to the field and pasture transitions with the proposed project include: fugitive dust emissions from land preparation, which may include broadcast seeding followed by pasture harrow or direct drill seeding planting of vegetation (1,658 acres); fugitive dust emissions from operation of pasture, which is estimated to be approximately half of the 1,658 acres during a transition year; emissions from the Boone Field for either all irrigated pasture activities or all irrigated crop cultivation; emissions from cattle transport, which is reduced by 50 percent from existing conditions; emissions from the Smith Ranch pastures; and emissions from the construction of up to 12 shallow, low-volume wells.[5] The shallow, low-volume wells would be constructed on an as-needed basis; however, the analysis assumes that all 12 would be constructed at the same time to provide for a conservative, worst-case analysis. Table 3.5-5 and Table 3.5-6 summarize the emissions by activity for the proposed project and compare the total project-related emissions to the existing emissions (see Table 3.5.3 above and the EKAPCD thresholds of significance).

As shown in Table 3.5-5 and Table 3.5-6, during field and pasture transitions and well construction, emissions from the proposed project would not exceed the applicable EKAPCD thresholds for ROG, NOx, CO, and SOx, and when compared to existing emissions would result in less PM10 and PM2.5 emissions, which includes fugitive dust. During field and pasture transition and well construction (assuming that all 12 wells are constructed at the same time), the estimated emissions for the proposed project would not exceed the EKAPCD thresholds of significance associated with the adopted air quality standards. Therefore, the impact would be less than significant.

[5] Fugitive dust from pasture operations results from vehicles/equipment driven over unpaved roads within or adjacent to pastures and windblown dust from edges or unpaved roadways within the project site.

TABLE 3.5-5
ANNUAL PROJECT-RELATED EMISSIONS DURING TRANSITION OF FIELDS AND WELL CONSTRUCTION ASSUMING BOONE FIELD AS PASTURE

	(tons/year)					
Source	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Onyx Ranch Land Preparation	-	-	-	-	3.01	0.60
Onyx Ranch Pasture	-	-	-	-	0.69	0.14
Onyx Ranch Boone Field	-	-	-	-	0.08	0.02
Smith Ranch Pasture	-	-	-	-	0.20	0.04
Cattle Transport	<0.01	0.02	<0.01	<0.01	<0.01	<0.01
Well Construction	<0.01	0.16	0.15	<0.01	0.01	<0.01
Project Emissions	**<0.01**	**0.18**	**0.15**	**<0.01**	**3.98**	**0.80**
Existing Emissions (see Table 3.5-3)	<0.01	0.03	<0.01	<0.01	7.74	1.55
Net Total[a,b]	**<0.01**	**0.15**	**0.14**	**<0.01**	**(3.76)**	**(0.0.75)**
EKAPCD Threshold[c,d]	25	25	NA	27	15	15
Significant?	No	No	No	No	No	No

NOTES:

[a] Totals may not add exactly due to rounding.

[b] Parenthesis () represent a negative value.

[c] While the project is not subject to EKAPCD permitting requirements in Rule 210.1, the 27 tons per year is used for SO_X.

[d] The EKAPCD has not established a threshold for PM2.5; however, since the EKAPCD region is designated non-attainment for PM10 and unclassified for PM2.5, and PM2.5 is a subset of PM10, 15 tons per year is used for PM2.5.

SOURCE: ESA, 2019.

TABLE 3.5-6
ANNUAL PROJECT-RELATED EMISSIONS DURING TRANSITION OF FIELDS AND WELL CONSTRUCTION ASSUMING BOONE FIELD AS CROPLAND

	(tons/year)					
Source	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Onyx Ranch Land Preparation	-	-	-	-	3.01	0.60
Onyx Ranch Pasture	-	-	-	-	0.69	0.14
Onyx Ranch Boone Field	-	-	-	-	0.83	0.17
Smith Ranch Pasture	-	-	-	-	0.20	0.04
Cattle Transport	<0.01	0.02	<0.01	<0.01	<0.01	<0.01
Well Construction	<0.01	0.16	0.15	<0.01	0.01	<0.01
Project Emissions	**<0.01**	**0.18**	**0.15**	**<0.01**	**4.73**	**0.95**
Existing Emissions (see Table 3.5-3)	<0.01	0.03	<0.01	<0.01	7.74	1.70
Net Total[a,b]	**<0.01**	**0.15**	**0.14**	**<0.01**	**(3.76)**	**(1.10)**
EKAPCD Threshold[c,d]	25	25	NA	27	15	15
Significant?	No	No	No	No	No	No

NOTES:

[a] Totals may not add exactly due to rounding.

[b] Parenthesis () represent a negative value.

[c] While the project is not subject to EKAPCD permitting requirements in Rule 210.1, the 27 tons per year is used for SO_X.

[d] The EKAPCD has not established a threshold for PM2.5; however, since the EKAPCD region is designated non-attainment for PM10 and unclassified for PM2.5, and PM2.5 is a subset of PM10, 15 tons per year is used for PM2.5.

SOURCE: ESA, 2019.

Project Operation and Maintenance

The calculated emissions that would result during annual maintenance activities on the project site would include emissions from land preparation (replanting of one-fifth of the total non-irrigated pasture), emissions due to operation of the pasture, which is conservatively assumed to be active all year; emissions from the Boone Field for either all irrigated pasture activities or all crop cultivation; and emissions from cattle transport, which is reduced by 50 percent from existing conditions. Table 3.5-7 and Table 3.5-8 summarize the emissions by project activity and compares the total project-related emissions to the existing emissions (see Table 3.5.3 above) and the EKAPCD thresholds of significance.

As shown in Table 3.5-7 and Table 3.5-8, during the proposed project's operation and maintenance, the estimated emissions would not exceed the EKAPCD thresholds of significance associated with the adopted air quality standards, and when compared to existing conditions, the emissions would result in less fugitive dust emissions (PM10 and PM2.5). Therefore, during project operation and maintenance, the impact would be less than significant.

TABLE 3.5-7
ANNUAL PROJECT-RELATED EMISSIONS DURING MAINTENANCE OF FIELDS AND PASTURE ASSUMING BOONE FIELD AS PASTURE

	(tons/year)					
Source	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Onyx Ranch Land Preparation	-	-	-	-	.60	0.12
Onyx Ranch Pasture	-	-	-	-	1.37	0.27
Onyx Ranch Boone Field	-	-	-	-	0.08	0.02
Smith Ranch Pasture	-	-	-	-	0.20	0.04
Cattle Transport	<0.01	0.02	<0.01	<0.01	<0.01	<0.01
Project Emissions	**<0.01**	**0.02**	**<0.01**	**<0.01**	**2.26**	**0.45**
Existing Emissions (see Table 3.5-3)	<0.01	0.03	<0.01	<0.01	7.74	1.55
Net Total[a,b]	**(<0.01)**	**(0.01)**	**(<0.01)**	**(<0.01)**	**(5.48)**	**(1.10)**
EKAPCD Threshold[c,d]	25	25	NA	27	15	15
Significant?	No	No	No	No	No	No

NOTES:

[a] Totals may not add exactly due to rounding.

[b] Parenthesis () represent a negative value.

[c] While the project is not subject to EKAPCD permitting requirements in Rule 210.1, the 27 tons per year is used for SO_X.

[d] The EKAPCD has not established a threshold for PM2.5; however, since the EKAPCD region is designated non-attainment for PM10 and unclassified for PM2.5, and PM2.5 is a subset of PM10, 15 tons per year is used for PM2.5.

SOURCE: ESA, 2019.

TABLE 3.5-8
ANNUAL PROJECT-RELATED EMISSIONS DURING MAINTENANCE OF FIELDS AND PASTURE ASSUMING BOONE FIELD AS CROPLAND

	(tons/year)					
Source	**ROG**	**NOx**	**CO**	**SOx**	**PM10**	**PM2.5**
Onyx Ranch Land Preparation	-	-	-	-	.60	0.12
Onyx Ranch Pasture	-	-	-	-	1.37	0.27
Onyx Ranch Boone Field	-	-	-	-	0.83	0.17
Smith Ranch Pasture	-	-	-	-	0.20	0.04
Cattle Transport	<0.01	0.02	<0.01	<0.01	<0.01	<0.01
Project Emissions	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**3.01**	**0.60**
Existing Emissions (see Table 3.5-3)	<0.01	0.03	<0.01	<0.01	8.49	1.70
Net Total[a,b]	**(<0.01)**	**(0.01)**	**(<0.01)**	**(<0.01)**	**(5.48)**	**(1.10)**
EKAPCD Threshold[c,d]	10	10	100	27	15	15
Significant?	No	No	No	No	No	No

NOTES:

[a] Totals may not add exactly due to rounding.

[b] Parenthesis () represent a negative value

[c] While the project is not subject to EKAPCD permitting requirements in Rule 210.1, the 27 tons per year is used for SO_X.

[d] The EKAPCD has not established a threshold for PM2.5; however, since the EKAPCD region is designated non-attainment for PM10 and unclassified for PM2.5, and PM2.5 is a subset of PM10, 15 tons per year is used for PM2.5.

SOURCE: ESA, 2019.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- During operation and maintenance of the proposed project, the estimated air quality emissions would not exceed the adopted air quality standards for criteria pollutants and, when compared to existing emissions would result in less fugitive dust emissions. Therefore, the proposed project would not violate air quality standards. The impacts would be less than significant.

Cumulatively Considerable Net Increase of Criteria Pollutants

Potential Impact AIR-3: Would the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is designated non-attainment under an applicable federal or State ambient air quality standard, or for which the proposed project would exceed any of the adopted thresholds provided by the EKAPCD?

The proposed project is located in the MDAB which is currently designated as non-attainment for O_3 for the NAAQS and CAAQS and PM10 for the CAAQS. O_3 would not be directly emitted by the proposed project, but rather would form in the atmosphere as a secondary pollutant via chemical reactions of ROG and NO_X in the presence of sunlight under certain meteorological conditions, such as high temperature and stagnation episodes. Therefore, $O_3$is not evaluated as direct emissions from the proposed project, but based on emissions of the O_3 pre-cursor pollutants ROG and NO_X. As shown in Table 3.5-5 and Table 3.5-6, the proposed project would result in minor emissions of ROG and NO_X during the agricultural field and pasture transition and well construction that would be substantially less than the significance thresholds. As shown in Table 3.5-7 and Table 3.5-8, the proposed project would result in a reduction of ROG and NO_X during the proposed project's operation and maintenance activities. The proposed project would not contribute to generation of O_3 or cumulatively considerable impacts to O_3. As shown in Tables 3.5-6 through 3.5-9, the proposed project would result in a reduction of PM10 during field and pasture transition, well construction, and project operation and maintenance. Furthermore, as shown in Tables 3.5-6 through 3.5-9, the proposed project would not exceed the adopted thresholds provided by the EKAPCD for other pollutants including CO, SO_X, and PM2.5. The proposed project would not result in a cumulatively considerable net increase of non-attainment pollutants and would not exceed the EKAPCD thresholds of significance. Therefore, the impacts would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The proposed project is located in the MDAB which is currently designated as non-attainment for O_3 and PM10. The proposed project would not result in a cumulatively considerable net increase in non-attainment pollutants, and would not exceed the EKAPCD thresholds of significance. Therefore, the impact would be less than significant.

Sensitive Receptors

Potential Impact AIR-4: Would the proposed project expose sensitive receptors to substantial pollutant concentrations?

Toxic Air Contaminants, Criteria Air Pollutants, and CO Hotspots

The primary toxic air contaminant of concern for the proposed project would be Diesel Particulate Matter (DPM) emitted from equipment exhaust. As detailed previously, with the proposed project, agricultural equipment use would be the same or reduced from the existing conditions on the project site and, therefore, emissions of toxic air contaminants (TACs), DPM, CO, and criteria air pollutants from these sources would be identical or reduced from the existing conditions. There would be no potential for sensitive receptors to be exposed to TACs, DPM, or CO hotspots as a result of the proposed project. As identified in Tables 3.5-6 through 3.5-9, PM10 and PM2.5 emissions, which includes fugitive dust, would be reduced from the existing conditions with implementation of the proposed project. With implementation of the proposed project, there would be no potential for sensitive receptors to be exposed to greater amounts of fugitive dust, TACs, DPM, and CO related to the existing conditions. Therefore, the impacts would be less than significant.

Valley Fever

The proposed project has the potential to generate fugitive dust containing Valley Fever spores (Coccidioides ssp.) that could then reach nearby sensitive receptors. The Kern County Public Health Services Department (Public Health Services Department) found that Coccidioides ssp. frequently occurs in the soil in the following areas (Kern County, 2019):

- Sites with many animal burrows
- Old (prehistoric) Native American campsites
- Areas with sparse vegetation
- Areas adjacent to arroyos
- Packrat middens
- Upper 12 inches of undisturbed soil
- Sandy well aerated soil with high water-holding capacity

Additionally, the Public Health Services Department indicated that Valley Fever is not likely to be found in the following areas (Kern County, 2019):

- Cultivated fields
- Heavily vegetated areas
- Higher elevations (above about 7,000 feet)
- Areas where commercial fertilizers have been applied
- Paved or oiled areas
- Heavily urbanized areas where there is relatively little undisturbed soil

The portion of the project site that would be altered by the proposed project consists of cultivated fields and irrigated ditches which have a low likelihood of containing Valley Fever spores due to the past increased soil disturbance and turnover. As a result, the proposed project would not be anticipated to expose nearby sensitive receptors to active Valley Fever spores. Additionally, the type of agriculture-related activities with the proposed project are the same kinds of activities occurring under the existing condition. Therefore, the potential for the proposed project to result in an increase in the exposure of nearby sensitive receptors, ranch employees, and employees for well contractors, to Valley Fever spores at a greater level than in the existing condition would not be anticipated. The impact would be less than significant.

Asbestos

Naturally occurring asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations.

Serpentinite and/or ultramafic rock are known to be present in 44 of California's 58 counties. These rocks are particularly abundant in the counties associated with the Sierra Nevada foothills, the Klamath Mountains, and the Coast Ranges. However, according to information provided by the Department of Conservation Division of Mines and Geology, the project site is not located in an area where naturally occurring asbestos is likely to be present (USGS, 2011). Therefore, impacts associated with the potential for the exposure of nearby sensitive receptors, ranch employees, and employees for the well contractors to asbestos would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- Implementation of the proposed project would result in a reduction of PM10 and PM2.5 emissions, which include fugitive dust, and no change in the emissions of TACs, DPM, CO, or other criteria pollutants. There would be no potential for sensitive receptors to be exposed to greater amounts of fugitive dust, TACs, DPM, or CO hotspots, and therefore, the impacts would be less than significant.
- Implementation of the proposed project would not result in the exposure of sensitive receptors, ranch employees, and employees of the well contractors to Valley Fever or asbestos at levels greater than the existing conditions. Therefore, the impacts would be less than significant.

Cumulative Impact Analysis

As stated previously, the cumulative setting for the proposed project is the MDAB, specifically the areas under the jurisdiction of the EKAPCD. In accordance with Kern County's *Guidelines for Preparing an Air Quality Assessment for Use in Environmental Impact Reports* (2006), the geographic scope for cumulative air quality impacts includes the cumulative projects within a one- and six-mile radius of the project site. Kern County's Guidelines require three steps for estimating the potential significance of cumulative impacts: (1) evaluate localized impacts (Guideline Instruction 16a); (2) evaluate consistency with existing air quality plans (Guideline Instruction 16b); and (3) summarize CARB air basin emissions (Guideline Instruction 16c; Kern County; 2006). These three steps are presented below.

Step 1. Localized Impacts

Cumulative projects located within six miles of the project site are described in detail in Section 3.2 and include: Cumulative Project A, Isabella Lake Dam Safety Modification Project; Cumulative Project B, Tricolored Blackbird Voluntary Local Program; Cumulative Project C, Upper Taylor Meadow Gully Repair Project; and Cumulative Project D, Weldon Regional Water District. This geographic scope of analysis is appropriate for determining air quality impacts because of the statewide, regional, and localized nature of air quality impacts, which could potentially occur cumulatively with the proposed project.

Substantial emissions could result if all cumulative projects are built concurrently. However, Kern County has determined that the EKAPCD's project-level thresholds are defined for the purposes of determining cumulative effects as the baseline for "considerable." As noted above, the proposed project would not exceed the applicable EKAPCD thresholds of significance for PM10 or PM2.5 emissions or other criteria pollutants such as NOx and, therefore, would not have emissions that are "considerable" with respect to the potential for cumulative impacts.

In addition, if all cumulative projects within 6 miles of the proposed project are implemented concurrently, emissions of fugitive dust could occur. However as identified above, the proposed project would reduce fugitive dust emissions from the level experienced in the existing conditions and, therefore, would not be "considerable" regardless of the combined emissions with respect to cumulative impacts.

Step 2. Consistency with Existing Air Quality Plans

Conformity to existing plans is relevant only with respect to emissions associated with the proposed project's operation and maintenance. Field and pasture transitions and well construction activities would be consistent with construction type activities, which based on EKAPCD methodology are not analyzed for consistency with existing air quality plans because the field transition activities and the well construction activities and associated emissions are temporary. As shown in Table 3.5-7 and Table 3.5-8, operation and maintenance of the proposed project would not exceed any established EKAPCD significance threshold for PM10 or PM2.5 emissions. The proposed project would noticeably reduce PM10 and PM2.5 emissions from the existing conditions and would nominally reduce all other pollutants and, therefore, increase the

potential for attainment of the Ozone Attainment Plan. Thus, the proposed project would have no cumulative impact with respect to consistency with existing air quality plans.

Step 3. California Air Resources Board Air Basin Emissions

To evaluate the contribution of the proposed project's maintenance emissions relative to the cumulative air quality conditions in Kern County and the MDAB. As identified in Tables 3.5-6 through 3.5-7, the proposed project would noticeably reduce PM10 and PM2.5 emissions and nominally reduce other criteria pollutant emissions from existing conditions and, therefore, would reduce emissions compared to the projected MDAB and Kern County portion of the MDAB's future emissions. Therefore, the proposed project would not contribute to a cumulative impact with respect to emissions in the MDAB.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The proposed would not result in cumulatively considerable impacts because: the proposed project would not exceed EKAPCD's significance thresholds for criteria pollutants; would be consistent with and facilitate the implementation of the local air quality plan (i.e., Ozone Attainment Plan); and would reduce emissions in the CARB air basin (i.e., MDAB). Cumulative impacts to air quality would be less than significant.

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3.6 Biological Resources

This section addresses the potential impacts related to biological resources associated with implementation of the proposed project. This section includes: a description of existing biological resources for the project site, the biological study area as defined below, and the Kern River Valley; a summary of applicable regulations related to biological resources; and an evaluation of the potential for the proposed project to result in environmental impacts related to the biological resources at the project site and study area. In addition, an evaluation of the potential cumulative impacts is provided.

The NOP and Initial Study prepared for the proposed project indicated that the Draft EIR would analyze the potential for significant impacts related to biological resources if the proposed 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 the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (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 the 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.

The analysis of these potential impacts is provided below in Section 3.6.3 Impact Analysis and Mitigation Measures.

The CEQA Guidelines were revised on December 28, 2018, which resulted in minor revisions to questions in Appendix G Environmental Checklist about potential impacts related to the Biological Resources environmental topic. These changes are reflected in the thresholds of significance and the analyses of these potential impacts provided below in Section 3.6.3 Impact Analysis and Mitigation Measures.

The NOP and Initial Study determined that the proposed project would have no impact related to biological resources for the following issues:

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Therefore, these issues are not discussed further in this Draft EIR (see the Initial Study in Appendix A, Public Participation Process, for more information).

Public comments that were received during the NOP public review period resulted in no addition to the scope of the Draft EIR related to the analysis of biological resources.

The RRBWSD contracted with Environmental Science Associates to conduct reconnaissance-level biological resources field surveys and to describe the biological resources setting for the proposed project. Unless otherwise specifically cited, the setting information provided below in Section 3.6.1 Environmental Setting comes from the *Onyx Ranch South Fork Valley Water Project Biological Resources Technical Report* ("BTR") dated May 2020, which is provided in Appendix C Biological Resources Technical Report to this Draft EIR.

3.6.1 Environmental Setting

Biological Study Area

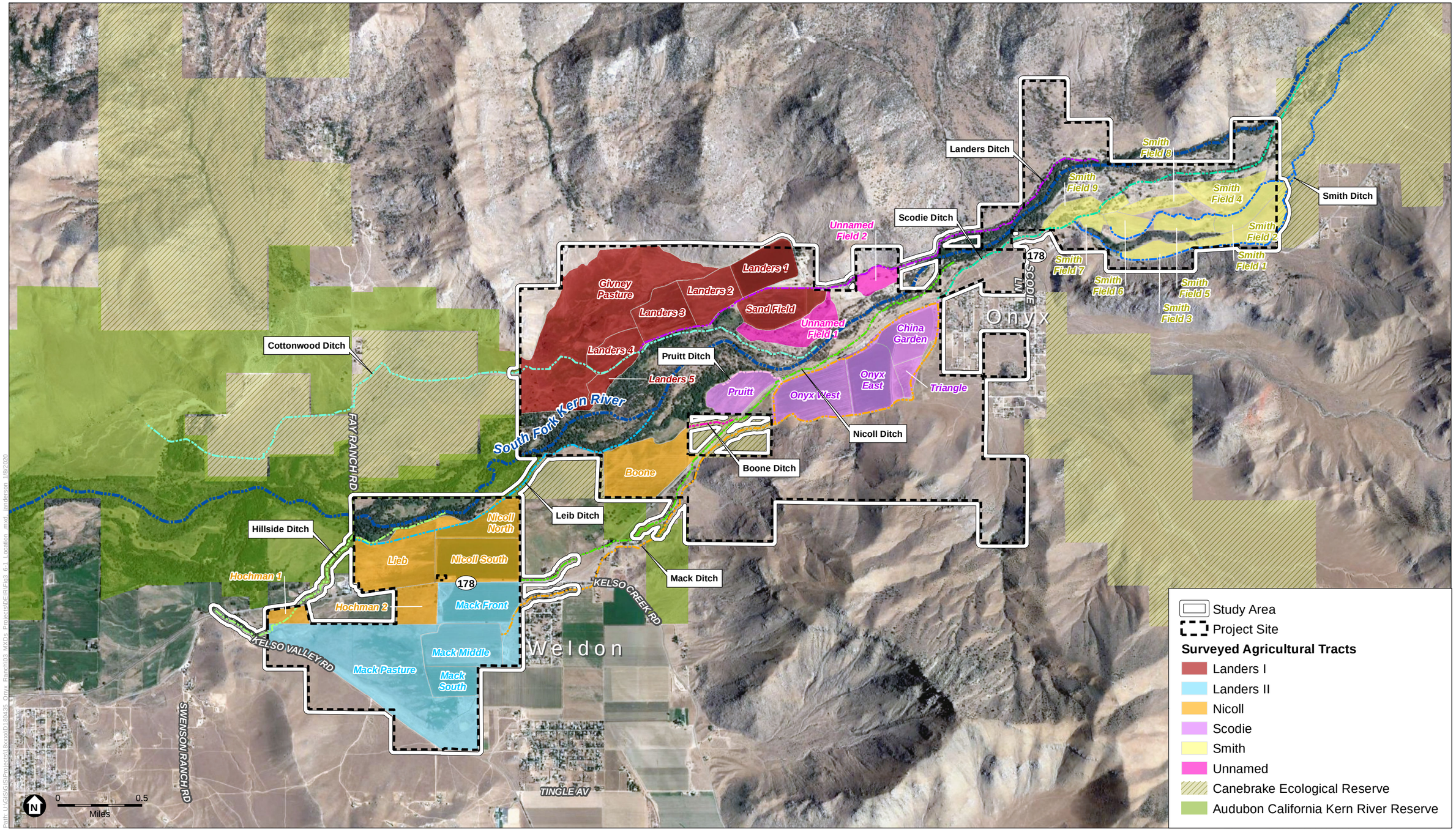
The following describes the existing conditions for the 4,247-acre Biological Study Area (study area). The study area is comprised of the 4,109-acre project site (consisting of the Onyx Ranch and the Smith Ranch) plus 138 acres of area that includes off-site agricultural ditches that provide water to the project site and a 50-foot wide buffer area around the alignment of the agricultural ditches and the boundaries of the project site. The off-site agricultural ditches convey surface water either into or out of the project site. The boundaries of the study area are shown in Figure 3.6-1 below.

Regional Setting

The study area is located in the South Fork Valley within the Kern River Valley in northeastern Kern County approximately 5 miles from the eastern boundary of Isabella Dam and Isabella Reservoir along either side of the South Fork of the Kern River (Figure 2-1). The study area is approximately 50 miles east of the RRBWSD service area in the San Joaquin Valley.

The Kern River, including the North and South Forks, is approximately 165 miles long and drains much of the southern Sierra Nevada Mountains northeast of Bakersfield. The river is fed by snowmelt originating at Mount Whitney, located on the eastern side of the mountain range (Kern River Conservancy, 2019). Topography throughout this region is highly variable and elevations range from 14,495 feet above mean sea level (amsl) at Mount Whitney peak and between 2,500 and 3,000 feet amsl within the Kern River Valley, to as low as 500 feet amsl upon reaching the floor of the Central Valley.

The climate in the Kern River Valley region is Mediterranean, with hot, dry summers and moderately wet and cool winters with occasional summer thunderstorms. While annual precipitation averages approximately 13.24 inches, the region has experienced moderate to severe drought conditions in recent years, from at least 2011 through 2015 (National Drought Mitigation Center, 2018, Hanak et al., 2015).



SOURCE: Google Earth, 2018; Rosedale-Rio Bravo Water Storage District

Onyx Ranch South Fork Valley Water Project

Figure 3.6-1
Study Area

ESA

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Plant communities typically found within the Kern River Valley region include a mosaic of xeric habitats, such as rubber rabbitbrush scrub and Joshua tree woodlands. Agricultural fields, riparian (associated with or dependent on a water course) and woodland habitat associated with riverine or other aquatic features traverse the landscape as well. The aforementioned habitats and resources are known to support a wide variety of common plant and wildlife species, as well as many special-status species protected by federal, state, and local regulations, which are described further below. The South Fork Kern River Valley is recognized by the National Audubon Society as a global Important Bird Area (National Audubon Society, 2020).

Local Setting

The topography of the study area ranges from 2,640 to 3,320 feet (805 to 1,012 meters) amsl. The majority of the study area is located within the Kern River Valley Specific Plan (KRVSP) boundaries east of Isabella Dam and Isabella Reservoir (Figure 2-2). The remainder of the study area is located to the north of the KRVSP. The study area is situated adjacent to and on either side of the South Fork of the Kern River. Between the study area and the Isabella Reservoir are two natural resource conservancy areas. At the eastern end of the Isabella Reservoir is the U.S. Forest Service South Fork Wildlife Area. The Audubon California's Kern River Preserve is located between the Wildlife Area and the study area. The Canebrake Ecological Reserve is located on parcels to the west, south, and east of the study area, as well as parcels between Onyx Ranch and Smith Ranch.

Cumulative Setting

As discussed in Section 3.2 Cumulative Impacts Methodology, the geographic area addressed in the analysis of cumulative impacts varies depending on the environmental topic being analyzed. The geographic area for the analysis of the potential cumulative impacts of the proposed project and cumulative projects related to biological resources is the Kern River Valley, including the North and South Forks of the Kern River, and for specific species, the San Joaquin Valley.

Vegetation Communities and Land Cover Types

The dominant vegetation communities and land cover types in the study area include pasture, big sagebrush scrub, and Fremont cottonwood forest, with developed or disturbed areas limited primarily to those associated with agricultural uses or roadways.

Each vegetation community or land cover type is described below and mapped in Figure 3.6-2. Detailed maps of each vegetation community or land cover type within the study area are provided in Appendix C, Biological Resources Technical Report. For ditches outside the project site boundaries and included in the study area, the existing vegetation community or land cover type has been mapped using a 50-foot buffer on either side of the ditches. Table 3.6-1 lists the acreages of each vegetation community or land cover type found within the study area. Representative photographs were taken of the various vegetation communities and land cover types during the field surveys and are included in Appendix C.

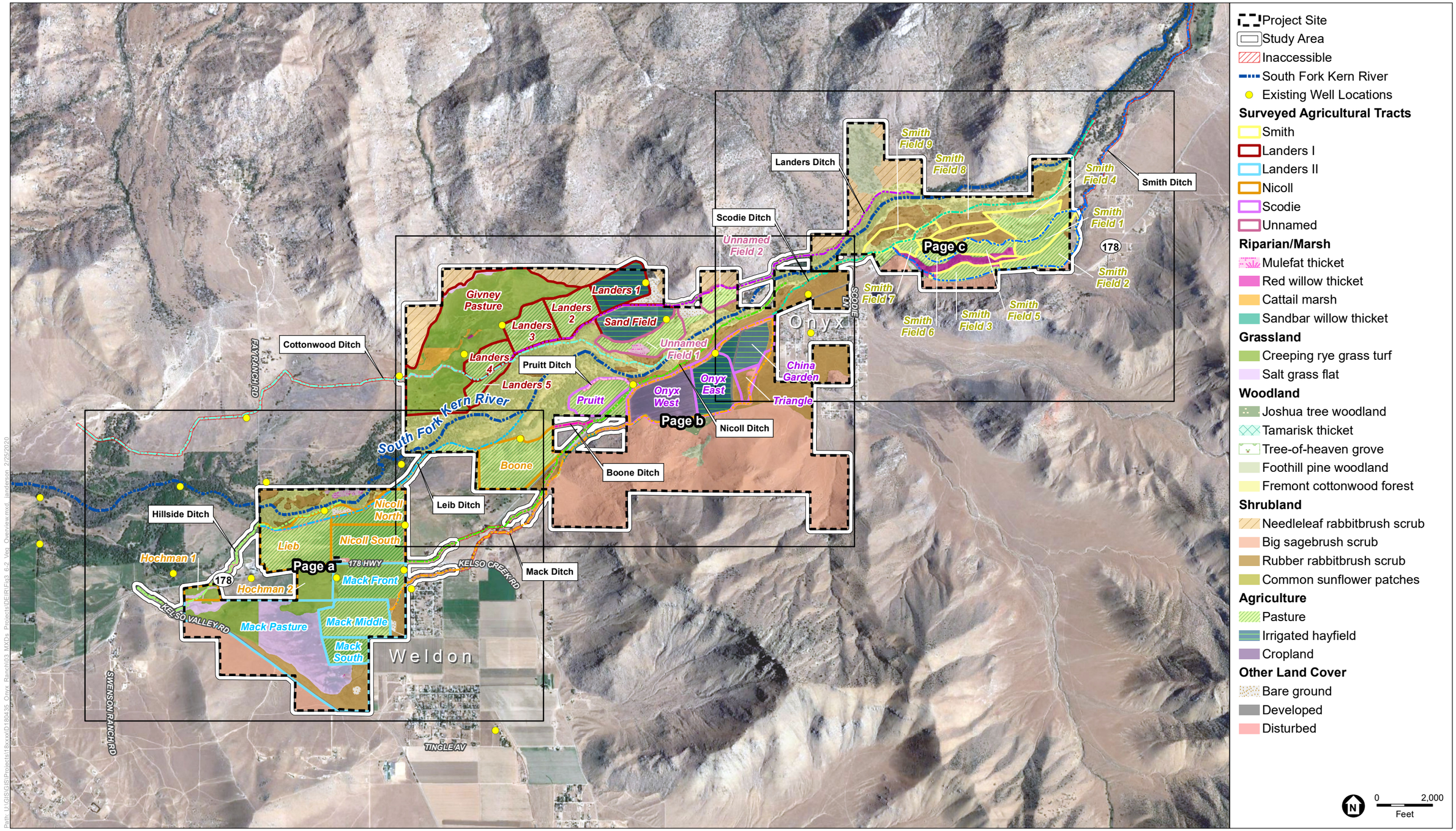
TABLE 3.6-1
VEGETATION COMMUNITIES AND LAND COVER TYPES IN THE STUDY AREA (ACRES)

Vegetation Community or Land Cover Type	Acres
Pasture	953.8
Big Sagebrush Scrub	756.9
Fremont Cottonwood Forest*	698.6
Rubber Rabbitbrush Scrub	476.4
Creeping Rye Grass Turfs*	399.4
Irrigated Hayfield	209.5
Needleleaf Rabbitbrush Scrub	186.0
Salt Grass Flat	153.7
Disturbed	113.1
Cropland	71.5
Foothill Pine Woodland	69.1
Developed	38.3
Red Willow Thickets*	34.3
Bare Ground	27.8
Cattail Marsh	19.0
Mulefat Thickets	15.0
Sandbar Willow Thickets	5.1
Joshua Tree Woodland*	10.9
Common Sunflower Patches	5.8
Tree-of-Heaven Grove	1.6
Tamarisk Thickets	0.8
Total	4,246.7

NOTE:
* Indicates a sensitive natural community
Source: ESA, 2020.

Pasture

The pasture cover type can be found throughout the project site (Smith Ranch and Onyx Ranch properties) within the study area. Pasture primarily consists of perennial grasses such as Bermuda grass (*Cynodon dactylon*) that provide up to 100 percent land cover. Bermuda grass is typically dominant with other non-native herbaceous plants, such as short podded mustard (*Hirschfeldia incana*), spiny cocklebur (*Xanthium spinosum*), red-stemmed filaree (*Erodium cicutarium*), prostrate knotweed (*Polygonum aviculare*), curly dock (*Rumex crispus*), common pussypaws (*Calyptridium monandrum*), and Italian rye grass (*Festuca perennis*) occurring at lower densities.



SOURCE: Google Earth, 2018; ESA, 2018; Rosedale-Rio Bravo Water Storage District.

Onyx Ranch South Fork Valley Water Project

Figure 3.6-2
Vegetation Communities and Other Land Cover Types-Overview

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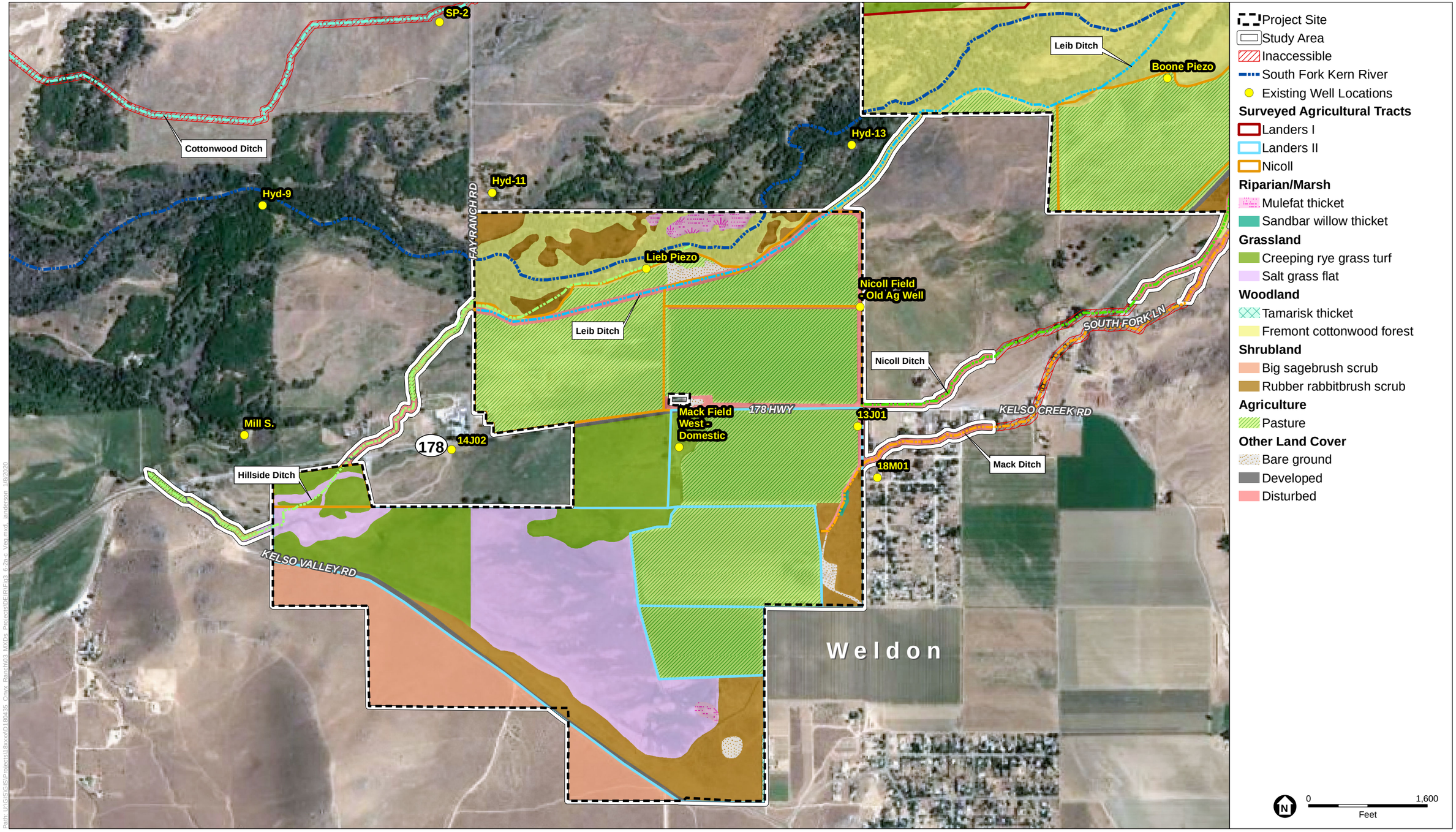
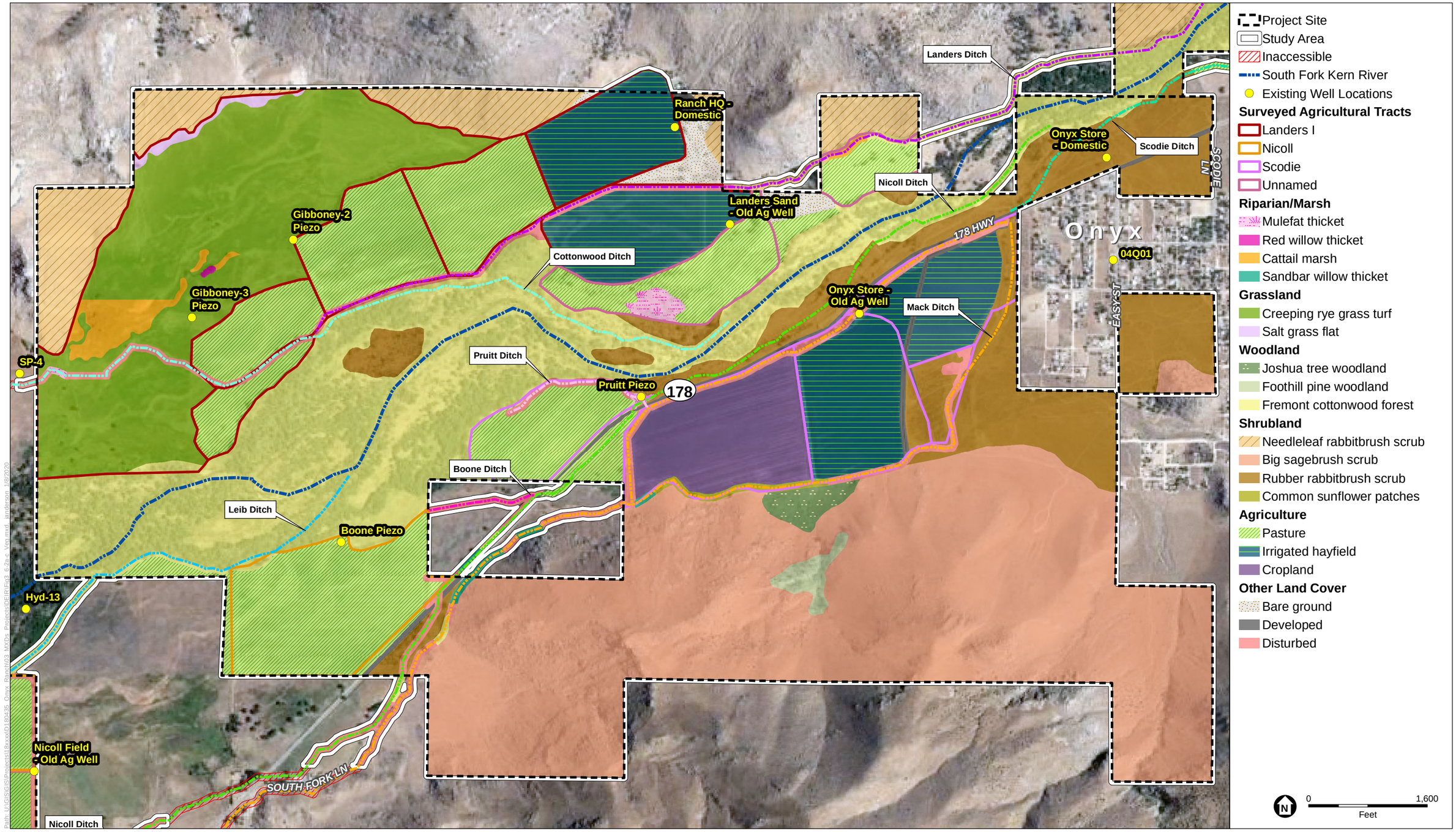


SOURCE: Google Earth, 2018; ESA, 2018; Rosedale-Rio Bravo Water Storage District

Onyx Ranch South Fork Valley Water Project

Figure 3.6-2a
Vegetation Communities and Other Land Cover Types

ESA

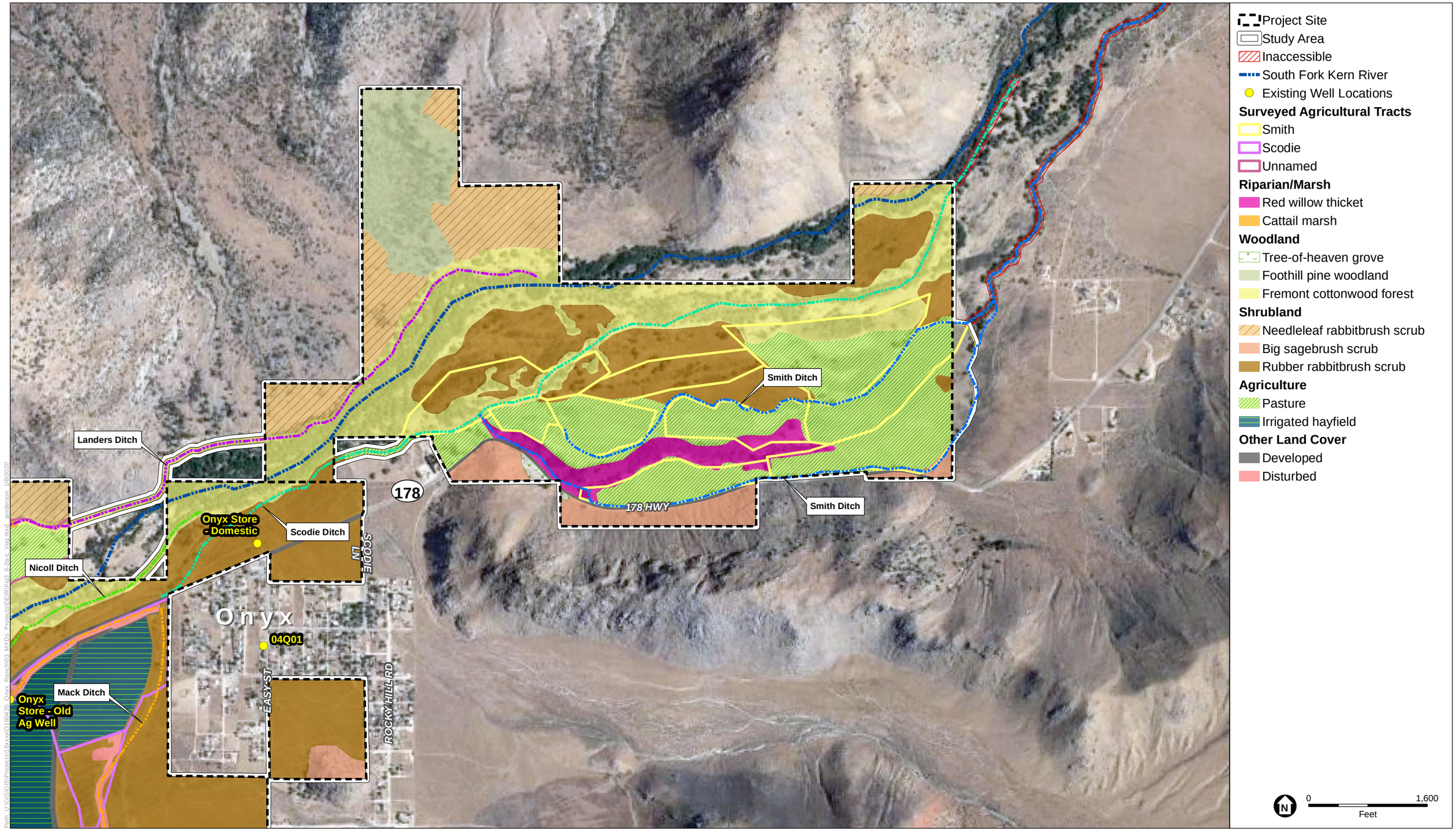


SOURCE: Google Earth, 2018; ESA, 2018; Rosedale-Rio Bravo Water Storage District

Onyx Ranch South Fork Valley Water Project

Figure 3.6-2b
Vegetation Communities and Other Land Cover Types

ESA



SOURCE: Google Earth, 2018; ESA, 2018; Rosedale-Rio Bravo Water Storage District

Onyx Ranch South Fork Valley Water Project

Figure 3.6-2c
Vegetation Communities and Other Land Cover Types

ESA

Big Sagebrush Scrub

Big sagebrush scrub (*Artemisia tridentata* Shrubland Alliance) is located along the upland margins within the north-facing slopes of the southern portion of the project site, outside of the South Fork of the Kern River floodplain[1]. This community is characterized by having mostly soft-woody shrubs from 0.5 to 2.0 meters tall, usually with bare ground underneath and between shrubs. Big sagebrush (*Artemesia tridentata*) is dominant or is codominant with rubber rabbitbrush. Native plants also occur, such as California buckwheat (*Eriogonum fasciculatum*), Acton encelia (*Encelia actoni*), green ephedra (*Ephedra viridis*), purple sage (*Salvia dorrii*), Cooper's goldenbush (*Ericameria cooperi*), desert almond (*Prunus fasciculata*), cheesebrush (*Ambrosia salsola*), and flannel bush (*Fremontodendron californicum*).

Fremont Cottonwood Forest

Within the study area, Fremont cottonwood forest (*Populus fremontii* Forest alliance) is located throughout most of the floodplain and immediate vicinity of the South Fork of the Kern River. This vegetation community is characterized by a dense, mixed tree assemblage dominated by Fremont cottonwood (*Populus fremontii*) and to a lesser degree, various willow species (*Salix* spp.). In addition, coast live oak (*Quercus agrifolia*), Oregon ash (*Fraxinus latifolia*), and western sycamore (*Platanus racemosa*) occur sporadically throughout the upstream portions of the reach. Willow species observed within the South Fork of the Kern River include black willow (*Salix gooddingii*) and red willow (*Salix laevigata*). The shrubby sandbar willow (*Salix exigua*) was occasionally observed throughout this community as well. A dense understory comprised of various native and non-native herb and shrub species exists within this community, including mulefat (*Baccharis salicifolia*), cattail (*Typha sp.*), spiny cocklebur, narrowleaf milkweed (*Asclepias fascicularis*), schismus (*Schismus* spp.), coyote melon (*Cucurbita palmata*), prickly poppy (*Argemone munita*), scalebroom (*Lepidospartum squamatum*), California mugwort (*Artemisia douglasiana*), Mexican rush (*Juncus mexicanus*), white sweetclover (*Melilotus albus*), shrubby ragwort (*Senecio flaccidus*), and common knotweed (*Persicaria lapathifolia*). This community has been designated by the CDFW as a sensitive natural community; it is present in the study area entirely within the South Fork of the Kern River floodplain.

Rubber Rabbitbrush Scrub

Rubber rabbitbrush scrub (*Ericameria nauseosa* Shrubland Alliance) is located in interspersed areas within the South Fork of the Kern River floodplain. This community is characterized by a low-laying shrub layer primarily dominated by rubber rabbitbrush (*Ericameria nauseosa*) and is typically codominant with big sagebrush, and California buckwheat. This community is a disturbance-maintained community where grazing or soil tilling activities are present.

Creeping Rye Grass Turfs

Creeping rye grass turfs (*Elymus triticoides* Herbaceous Alliance) occurs within the Givney and Mack Pastures located within the study area, in the most northwest and southwest portions of the Onyx Ranch property. This vegetation community is characterized by a dominance of creeping

[1] For the purposes of the analysis of biological resources and jurisdictional waters, the term "floodplain" is defined as land adjacent to a stream or river channel that is periodically inundated.

wild rye (*Elymus triticoides*) with a co-dominance of native and non-native species such as yerba mansa (*Anemopsis californica*), wild oat (*Avena fatua*), brome species (*Bromus* spp.), salt grass (*Distichlis spicata*), rushes (*Juncus* spp.), and foxtail grasses (*Hordeum* spp.). This community has been designated by the CDFW as a sensitive natural community.

Irrigated Hayfield

Irrigated hayfields are agricultural lands that are used to cultivate alfalfa (*Medicago sativa*) and grass hayfields for agricultural purposes. These lands are typically irrigated, intensively mowed and managed. Irrigated hayfields largely occur on the project site within the Landers I, Landers II, and Scodie tracts.

Needleleaf Rabbitbrush Scrub

Needleleaf rabbitbrush scrub (*Ericameria teretifolia* Schrubland Alliance) is located along the upland margins within the south-facing slopes of the northern portion of the study area, outside of the South Fork of the Kern River floodplain. This community is characterized by a low-lying shrub layer overwhelmingly dominated by needleleaf rabbitbrush (*Ericameria teretifolia*) and codominant with California buckwheat. Other native species, such as cheesebrush, Acton encelia, beavertail cactus (*Opuntia basilaris*), fourwing saltbush (*Atriplex canescens*), chaparral yucca (*Hesperoyucca whipplei*), and wild terragon (*Artemisia dracunculus*), can also occur within this community. Non-native grasses, such as red brome (*Bromus madritensis* ssp. *rubens*), was also observed within this community. This habitat is typically found in disturbed areas where agriculture and heavy grazing has occurred.

Salt Grass Flats

Salt grass flats (*Distichlis spicata* Herbaceous Alliance) is dominated by salt grass and is codominant with natives, such as yerba mansa, and non-natives, such as ripgut brome (*Bromus diandrus*). Other native species present within this alliance at lower cover includes saltbush (*Atriplex* spp.) and rubber rabbitbrush. Other low-cover non-natives include short podded mustard and red-stemmed filaree. Salt grass flats can be found surrounding the Givney and Mack Pastures on the Onyx Ranch portion of the study area.

Disturbed

A disturbed area occurs along a large portion of the agricultural ditches within the study area. This cover type includes areas subject to recent disturbance such as trenching, or has some vegetative cover (greater than 2% total vegetative cover) consisting of fast-growing ruderal species, such as Russian thistle (*Salsola tragus*), short podded mustard, red-stemmed filaree, schismus, spiny cocklebur, curly dock, white sweetclover, and rabbitsfoot grass (*Polypogon monspeliensis*).

Cropland

Cropland is present within the Onyx Ranch and Smith Ranch properties of the study area where the dominant crop growing is sorghum (*Sorghum bicolor*).

Foothill Pine Woodland

Foothill pine woodland (*Pinus sabiniana* Woodland Alliance) is present within the foothills located to the north and south within the study area. This community is dominated by the foothill pine (*Pinus sabiniana*) with occasional occurrences of California juniper (*Juniperus californica*) and interior live oak (*Quercus wislizeni*). A sparse, low-lying herbaceous layer is present within this community including rubber rabbitbrush, common sagebrush, and silver cholla (*Cylindropuntia echinocarpa*).

Developed

Developed areas occur along roads or properties where structures, such as housing, barns, corrals, and irrigation ditches, have been built in portions of the study area. This cover type includes areas devoid of vegetation and has pavement or asphalt, infrastructure, hardscape, or ornamental landscaped areas. Developed areas are present throughout the study area and along major roads.

Red Willow Thickets

Red willow thickets (*Salix laevigata* Woodland Alliance) are present within the southern end of the Smith Ranch property and within the Givney Pasture located on the Onyx Ranch property on the project site. The vegetation in this community is characterized by a dense layer of red willows. On the Smith Ranch portion of the project site, the community is occasionally interspersed with mulefat. Throughout the project site, there is a minimal, low-lying herbaceous layer with species such as spiny cocklebur and Mexican rush in the understory. This community has been designated by the CDFW as a sensitive natural community.

Bare Ground

Bare ground occurs in areas scattered across the study area. This cover type includes areas that are devoid of vegetation (less than 2% total vegetation cover by herbaceous, desert, or non-wildland species) due to regular disturbance, typically from agricultural practices.

Cattail Marshes

Small patches of cattail marshes (*Typha* herbaceous alliance) occur intermittently along several ditches, including the Landers Ditch, the Scodie Ditch, and within the Givney Pasture, all located within Onyx Ranch. Vegetation in this community is characterized by an overwhelming dominance of cattail (*Typha domingensis*). Soils in this community are typically clayey or silty. This community is present within the Onyx Ranch property on the project site.

Mulefat Thickets

Mulefat thickets (*Baccharis salicifolia* Shrubland Alliance) occur sporadically throughout the study area and are interspersed within the Fremont cottonwood forest along the South Fork of the Kern River floodplain. Mulefat thickets are also present intermittently along the Cottonwood Ditch, Landers Ditch, and Onyx Ditch. Vegetation in this community is characterized by an overwhelming dominance of mulefat, with minimal herbaceous species intermixed, and emergent

trees such as foothill pine, Fremont cottonwood, oaks (*Quercus* spp.), and willows (*Salix* spp.) at low cover.

Sandbar Willow Thickets

This community is primarily composed of a dense layer of sandbar willows (*Salix exigua* Shrubland Alliance) with minimal shrub or low-cover herbaceous species. This community can be found in patches along portions of the Mack Ditch within the Onyx Ranch property on the project site.

Joshua Tree Woodland

Joshua tree woodland (*Yucca brevifolia* Woodland Alliance) is dominated by Joshua tree (*Yucca brevifolia*) with a grassy understory including natives such as common sagebrush, green ephedra, purple sage, Cooper's goldenbush, desert almond, cheesebrush, and flannel bush. One non-native species, soft brome (*Bromus hordeaceus*), was also present within the community. Some foothill pines were present at low cover. Joshua tree woodland is found on an alluvial fan just south of the Scodie Fields within the Onyx Ranch property on the project site. This community has been designated by the CDFW as a sensitive natural community.

Common Sunflower Patches

Common sunflower patches (*Helianthus annuus* Herbaceous Alliance), which consists mainly of dense patches of common sunflower, can be found within some of the disturbed agricultural ditches along the southern portion of the Onyx Ranch property on the project site.

Tree-of-Heaven Grove

This community is present within a developed portion of a cemetery as a landscaped grove of tree-of-heaven (*Ailanthus altissima* Woodland semi-natural Alliance) with some ruderal, non-native weedy plants such as short podded mustard, brome, Mediterranean grass (*Schismus arabica*), and wild oat. This land cover type can be found within the cemetery located in the study area just south of the Smith Ranch property, across from the California State Route 178. This land cover type is not located on the project site.

Tamarisk Thickets

A tamarisk thicket (*Tamarix* spp. Shrubland Semi-Natural Alliance) was planted as a windrow along the west side of the Onyx Ranch property line along the southeast corner of the Landers II tract on the Onyx Ranch property. The dominant species is tamarisk (*Tamarix* spp.) with no herbaceous cover present.

Common Wildlife Species

Common wildlife species are those species that are not protected by species-specific designations described for special-status species and may include both native and non-native species. General wildlife protection laws and statutes are applicable to certain common wildlife genera and species. The MBTA and CFGC Sections 3503 and 3503.5 are applicable to common native bird

and raptor species. Protections under CEQA may apply for movement/migration corridors and nursery sites used by various common wildlife species.

A variety of common wildlife species were observed or are expected to occur in the study area which are typically found throughout scrub habitats of the southern Sierra Mountain foothills. The presence of an intermittent water source and dense riparian vegetation along the South Fork of the Kern River provides added habitat diversity and may attract numerous species.

Common avian species detected or observed during the reconnaissance survey within and near the study area include chukar (*Alectoris chukar*), mallard (*Anas platyrhynchos*), California scrub-jay (*Aphelocoma californica*), red-tailed hawk (*Buteo jamaicensis*), California quail (*Callipepla californica*), Anna's hummingbird (*Calypte anna*), turkey vulture (*Cathartes aura*), wrentit (*Chamaea fasciata*), killdeer (*Charadrius vociferous*), lark sparrow (*Chondestes grammacus*), northern flicker (*Colaptes auratus*), western wood-pewee (*Contopus sordidulus*), common raven (*Corvus corax*), Nuttall's woodpecker (*Dryobates nuttallii*), downy woodpecker (*Dryobates pubescens*), horned lark (*Eremophila alpestris*), Brewer's blackbird (*Euphagus cyanocephalus*), American kestrel (*Falco sparverius*), greater roadrunner (*Geococcyx californianus*), common yellowthroat (*Geothlypis trichas*), house finch (*Haemorhous mexicanus*), Bullock's oriole (*Icterus bullockii*), wild turkey (*Meleagris gallopavo*), song sparrow (*Melospiza melodia*), California towhee (*Melozone crissalis*), ash-throated flycatcher (*Myiarchus cinerascens*), house sparrow (*Passer domesticus*), Lazuli bunting (*Passerina amoena*), blue grosbeak (*Passerina caerulea*), band-tailed pigeon (*Patagioenas fasciata*), cliff swallow (*Petrochelidon pyrrhonota*), phainopepla (*Phainopepla nitens*), bushtit (*Psaltriparus minimus*), black phoebe (*Sayornis nigricans*), Say's phoebe (*Sayornis saya*), yellow-rumped warbler (*Setophaga coronate*), yellow warbler (*Setophaga petechial*), lesser goldfinch (*Spinus psaltria*), Eurasian-collard dove (*Streptopelia decaocto*), western meadowlark (*Sturnella neglecta*), Bewick's wren (*Thryomanes bewickii*), western kingbird (*Tyrannus verticalis*), and mourning dove (*Zenaida macroura*).

Additional wildlife species observed during surveys include coyote (*Canis latrans*), California ground squirrel (*Otospermophilus beecheyi*), desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus*), Pacific tree frog (*Pseudacris regilla*), western fence lizard (*Sceloporus occidentalis*), common side-blotched lizard (*Uta stansburiana*), funeral duskywing (*Erynnis funeralis*), western tiger swallowtail (*Papilio rutulus*), cabbage white (*Pieris rapae*), tarantula hawk (*Pepsis* sp.), and red swamp crawfish (*Procambarus clarkii*). Common terrestrial wildlife species that were not observed, but may be expected to occur, include striped skunk (*Mephitis mephitis*), northern raccoon (*Procyon lotor*) and other smaller mammals such as deer mice (*Peromyscus maniculatus*).

Numerous fish species are known to occur within the South Fork of the Kern River watershed and are expected to also occur when sufficient water is present. Native species may include squawfish (*Ptychocheilus grandis*) and rainbow trout (*Onchorhynchus mykiss*), and non-native species may include common carp (*Cyprinus carpio*), green sunfish (*Lepomis cyanellus*), and bluegill (*Lepomis macrochirus*). Macroinvertebrates are a necessary food source for fish occupying the South Fork of the Kern River and play a vital role in the ecology of the watershed. Classes

expected to occur within the region include Arachnida, Enopla, Gastropoda, Insecta, Oligochaeta, Ostracoda, and Turbellaria.

Special-Status Species

Special-status species, for purposes of this analysis, are defined to include the following:

- Species listed or proposed for listing as threatened or endangered, or designated as candidates for possible future listing as threatened or endangered, under CESA or FESA.
- Species protected under the federal Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c).
- Species that meet the definitions of rare or endangered under CEQA (CEQA Guidelines § 15380).
- Plants listed as rare under the Native Plant Protection Act (Fish and Game Code § 1900 et seq.).
- Plants considered by the CDFW or CNPS to be rare, threatened, or endangered in California.
- CDFW species of special concern.
- CDFW fully protected species (CFGC § 3511, 4700, and 5050).

A total of 86 special-status plant and animal species and three sensitive communities/habitats have been reported within the nine-USGS quadrangle query of the CNDDB and CNPS databases or have been reported within the study area based on a query of the USFWS IPaC database (see Appendix C of this Draft EIR). Of these, it was determined that 60 of the special-status plant and wildlife species do not have the potential to occur in the project site or study area due to habitat and/or range restrictions, and two of the three sensitive habitats, the central valley drainage hardhead/squawfish stream and the southern interior cypress forest, are excluded from further discussion in this report because they were not observed during the field survey. The great valley cottonwood riparian forest community was considered to have potential to occur in the study area. Sensitive communities are further discussed below.

Table 3.6-2 provides a list of 31 special-status wildlife species that were considered regarding their potential to occur in the study area. A total of 16 wildlife species have a moderate or high potential to occur or were noted as present within the study area, as described further below. Table 3.6-3 provides the list of 55 special-status plant species that were considered regarding their potential to occur in the study area. Ten species have moderate to high potential to occur in the study area, as described further below.

TABLE 3.6-2
SPECIAL-STATUS WILDLIFE WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Common and Scientific Name	Status[1] (Federal/ State/ CNDDB)	Habitat	Potential to Occur
Invertebrates			
Crotch bumble bee *Bombus crotchii*	--/CE/S1S2	Known to inhabit open grassland and scrub habitats. Nesting occurs underground in abandoned rodent nests or above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees.	**Moderate.** Scrub and open grassland habitats present throughout the upland portions of the study area. The nearest occurrence documented in CNDDB is from the Onyx area in 1940.
Fishes			
Delta smelt Hypomesus transpacificus	FT/SE/--	Found in aquatic and estuary habitats. Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt. Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait & San Pablo Bay.	**Not Expected.** Only marginal habitat for this species is present within the study area. Study area is outside of this species' known range.
Amphibians			
foothill yellow-legged frog *Rana boylii*	--/--/SSC	Occurs in or near rocky streams in a variety of habitats including valley-foothill hardwood, valley-foothill hardwood conifer, wally-foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadows. Occurs in elevations between sea level and 1940m. Requires a permanent water source.	**Not Expected.** Marginal habitat for this species is present throughout much of the study area within the bed and banks of the South Fork of the Kern River when water is present, but study area is outside of this species' known range.
southern mountain yellow-legged frog *Rana muscosa*	FE/SE/WL	Natural and artificial standing and flowing waters within riparian scrub, forest and/or woodland. Elevation 370 to 3660m.	**Not Expected.** Only marginal habitat for this species is present within the study area. Study area is outside of this species' known range.
Kern Plateau salamander *Batrachoseps robustus*	--/--/--	Found in riparian scrub, upper montane coniferous forest. Only in the semi-arid Kern Plateau and Scodie Mountains. Frequents Jeffery pine/red fir, lodgepole pine & riparian scrub. Found under rocks, bark fragments, logs and within and under wet logs, especially in spring and seep areas.	**Moderate.** Suitable habitat of the species is present within the dense riparian vegetation within South Fork of the Kern River within the study area where water is present. The nearest CNDDB occurrence is 5 miles to the northeast from 1993.
Reptiles			
Southern Sierra legless lizard *Anniella campi*	--/--/SSC	Occurs in moist, warm, loose soils with plant cover. Moisture is essential. Occurs in sparsely vegetation areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	**Low.** Only marginal habitat for this species is present within the study area. Most habitat is disturbed by grazing activities.
California legless lizard *Anniella sp.*	--/--/SSC	Found in chaparral, coastal dunes and coastal scrub. Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. Prefer soils with a high moisture content.	**Moderate.** High quality habitat for this species is present throughout the floodplain and upland margins of the South Fork of the Kern River.

TABLE 3.6-2 (CONTINUED)
SPECIAL-STATUS WILDLIFE WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Common and Scientific Name	Status[1] (Federal/ State/ CNDDB)	Habitat	Potential to Occur
western pond turtle *Emys marmorata*	--/--/SSC	Species requires habitat associated with permanent or nearly permanent water with basking sites such as partially submerged logs, rocks, mats of floating vegetation or open mud banks.	**Low.** Only marginal habitat for this species is present within the study area. Most habitat is disturbed by grazing activities.
Birds			
Cooper's hawk *Accipiter cooperi*	--/--/WL	Found in riparian areas and open woodlands, chiefly of open, interrupted or marginal type. Nests in riparian growths of deciduous trees and live oak woodlands.	**High.** High quality foraging and breeding habitat for this species is present throughout the riparian forest present along the bed and banks of South Fork of the Kern River, as well as within lone trees present sporadically throughout the study area.
Kern red-winged blackbird *Agelaius phoeniceus aciculatus*	--/--/SSC	Breeds in freshwater cattail (*Typha* spp.) and tule (*Scirpus* spp.) marshes, marsh vegetation bordering natural and man-made ponds, marsh and willows (*Salix* spp.) in the drawn-down area at the east end of Lake Isabella, and riparian forest bordering wetlands, irrigation ditches, and wet pastures. Open desert and pasturelands appear to be important foraging areas. Restricted to the Kern River Valley and the Walker Basin of east-central Kern County. The current nesting range in the South Fork Kern River Valley extends from the area surrounding the town of Lake Isabella and the wetlands along the South Fork Kern River from the east edge of Lake Isabella reservoir to the Canebrake Ecological Reserve, about 5 miles east of the town of Onyx.	**Present.** Suitable foraging and nesting habitat is present within cattail marsh habitat within the study area. This species was observed foraging within the study area.
tri-colored blackbird *Agelaius tricolor*	--/ST/--	Found in freshwater marshes, swamps, and wetlands. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	**High.** Suitable habitat for the species is present within the dense riparian vegetation within South Fork of the Kern River and Onyx Ranch on the project site where water is present. This species was documented in CNDDB 0.5 mile west of Givney Pasture in 2014, and was presumed to be a breeding colony.
golden eagle *Aquila chrysaetos*	--/SFP/--	Found in broadleaved upland forest, cismontane woodland, coastal prairie, Great Basin grassland, Great Basin scrub, lower montane coniferous forest, pinon & juniper woodlands, upper montane coniferous forest, and valley & foothill grassland. Also found in rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	**Moderate.** Suitable nesting and foraging habitat for the species is present within the study area. Nearest CNDDB occurrence is 14 miles to the southeast in 1976.

TABLE 3.6-2 (CONTINUED)
SPECIAL-STATUS WILDLIFE WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Common and Scientific Name	Status[1] (Federal/ State/ CNDDB)	Habitat	Potential to Occur
burrowing owl *Athene cunicularia*	--/--/SSC	Found in coastal prairie, coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, valley & foothill grassland. Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Low.** Suitable habitat of the species is present within the study area; however, the nearest CNDDB occurrence is 9.5 miles to the east-southeast in 1891.
western yellow-billed cuckoo *Coccyzus americanus* ssp. *occidentalis*	FT/SE/--	This species is a riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Often a dominance of willow mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**High.** Foraging and nesting habitat is present throughout the riparian forest within the bed and banks of South Fork of the Kern River. Study area is within mapped critical habitat. This species was documented within the study area in CNDDB in 2014.
southwestern willow flycatcher *Empidonax traillii* ssp. *extimus*	FE/SE/--	Typical habitat is dense, closed canopy willow and other riparian woodlands near open water.	**High.** High quality foraging and nesting habitat is present in the riparian forest within South Fork of the Kern River. This species was documented within the study area in CNDDB in 2016.
California condor *Gymnogyps californianus*	FE/SE, SFP/--	Found within chaparral and valley & foothill grassland habitats. Require vast expanses of open savannah, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	**Low.** Marginal foraging habitat is present within the study area, and nearest occurrence is 40 miles to the northwest.
yellow-breasted chat *Icteria virens*	--/--/SSC	This species is a summer resident; inhabits riparian thickets of willow & other brushy tangles near watercourses. Nests in low, dense riparian vegetation, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground.	**High.** High quality foraging and nesting habitat is present throughout the riparian forest within the bed and banks of South Fork of the Kern River.
loggerhead shrike *Lanius ludovicianus*	--/--/SSC	Found in broken woodlands, savannah, pinyon-juniper, Joshua tree, & riparian woodlands, and desert oases, scrub & washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Present.** Suitable foraging and nesting habitat is present throughout the bed, banks, floodplain and upland margins of Onyx Ranch. This species was observed foraging within the study area.
summer tanager *Piranga rubra*	--/--/SSC	This species breeds primarily in mature riparian woodland with an extensive canopy of Fremont Cottonwood. Forage primarily for large insects within the canopy of tall riparian trees.	**High.** Suitable foraging and nesting habitat for the species is present throughout the floodplain and upland margins of South Fork of the Kern River.
yellow warbler *Setophaga petechia*	--/--/SSC	This species has riparian plant associations in close proximity to water. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	**High.** High quality foraging and nesting habitat is present throughout the riparian forest within the bed and banks of South Fork of the Kern River.

TABLE 3.6-2 (CONTINUED)
SPECIAL-STATUS WILDLIFE WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Common and Scientific Name	Status[1] (Federal/ State/ CNDDB)	Habitat	Potential to Occur
least Bell's vireo *Vireo bellii* ssp. *pusillus*	FE/SE/S2	Known to occur in riparian forest, scrub, and woodland habitats. Nests primarily in willow, mulefat, or mesquite habitats.	**High.** High quality foraging and nesting habitat for the species is present throughout the riparian forest within the bed and banks of South Fork of the Kern River. This species was documented in CNDDB 2 miles downstream to the west in 2015.
gray vireo *Vireo vicinior*	--/--/SSC	Known to occur in chaparral habitats. Dry chaparral; west of desert, in chamise-dominated habitat; mountains of Mojave Desert, associated with juniper & Artemisia. Forage, nest, and sing in areas formed by a continuous growth of twigs, 1-5 ft above ground.	**Not Expected.** No suitable habitat is available within the study area.
Mammals			
pallid bat *Antrozous pallidus*	--/--/SSC	Grasslands, shrublands, woodlands, and coniferous forests; most common in open, dry habitat with rocky areas for roosting, as well as abandon buildings and metal clad structures.	**Moderate.** Suitable habitat for the species is present along the bed, banks, floodplain and upland margins of the South Fork of the Kern River. However, this species is generally associated with rockier habitat for roosting.
Townsend's big eared bat *Corynorhinus townsendii*	--/--/SSC	Rocky areas throughout various habitats from deserts to mountain landscapes.	**Moderate**. Marginal foraging and roosting habitat is present throughout the rocky areas within the scrub communities on the project site.
California wolverine *Gulo gulo*	PT/ST/FP	Primarily found in northern Sierra Nevada range in mixed conifer, red fir, and lodgepole habitats.	**Not Expected.** The project site is out of range for the occurrence of this species. No suitable habitats are available on the project site.
Tulare grasshopper mouse *Onychomys torridus tularensis*	--/--/SSC	Found in arid desert habitats of the Mojave Desert and southern Central Valley. Prefers alkali desert scrub and desert scrub habitats. Feeds exclusively on arthropods.	**Not expected.** Marginal quality habitat for the species is present throughout the scrub habitats within the study area. It has been more than 50 years after last recorded sighting.
San Joaquin pocket mouse *Perognathus inornatus*	--/--/--	Occurs in dry, open grassland or scrub areas on fine-textured soils between 350 and 600 m in the central and Salinas Valleys.	**Not Expected.** No suitable habitat or soils available and project site is located outside of typical elevations and geographical ranges for this species. It has been more than 50 years since last recorded sighting.
yellow-eared pocket mouse *Perognathus mollipilosus xanthonotus*	--/--/--	Occurs in Joshua tree woodland. Known only from four canyons in the Tehachapi Mountains, northeastern Kern County. Elevational range 4000-5300 ft. Desert shrub and Joshua tree communities with scattered pinyon pines. Occupies underground burrow when inactive.	**Not Expected.** The study area is located outside of typical elevations and geographical ranges for this species.

TABLE 3.6-2 (CONTINUED)
SPECIAL-STATUS WILDLIFE WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Common and Scientific Name	Status[1] (Federal/ State/ CNDDB)	Habitat	Potential to Occur
American badger *Taxidea taxus*	--/--/SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Low.** Suitable habitat for this species occurs within the project site; however, nearest CNDDB occurrence is 4.0 miles to the east from 1972.
Sierra Nevada red fox *Vulpes vulpes necator*	--/ST/--	Typically found in the alpine and sub-alpine zones of high elevation conifer habitats.	**Not Expected.** No suitable habitat or elevations located within the project site. The project site is also outside of the known historic range of this species.
Mohave ground squirrel *Xerospermophilus mohavensis*	--/ST/--	This species is restricted to the Mojave Desert. Optimal habitats are open desert scrub, alkali desert scrub, and Joshua tree. Also feeds in annual grasslands and has been found from 505-1525m elevation.	**Not Expected.** The project site is located outside of the known range for this species.

[1] Description of status codes:

Federal Listings
FE = Listed as endangered under the FESA
FSC = Species of Concern (USFWS)
FT = Listed as threatened under the FESA
BCC = Birds of Conservation Concern (USFWS)
State Listings
SE = Listed as endangered under the CESA
CE = Candidate as endangered under the CESA
ST= Listed as threatened under the CESA
SSC = Species of Special Concern (CDFW)
WL = Watch List (CDFW)
CNDDB Element Rankings
S1 = Less than 6 element occurrences (EOs) or 1,000 individuals or less than 2,000 acres (S1.1 very threatened, S1.2 threatened, S1.3 no current threats known)
S2 = 6-20 EOs or 1,000-3,000 individuals or 2,000-10,000 acres (S2.1 very threatened, S2.2 threatened, S2.3 no current threats known)
S3 = 21-100 EOs or 3,000-10,000 individuals or 10,000-50,000 acres (S3.1 very threatened, S3.2 threatened, S3.3 no current threats known)
S4 = Apparently secure; this rank is clearly lower than S3 but factors exist to cause some concerns; i.e., there is some threat, or somewhat narrow habitat.
? = indicates some uncertainty.

TABLE 3.6-3
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Common and Scientific Name	Status[1] (Federal/State/ CNDDB/CRPR)	Habitat	Potential to Occur
Spanish needle onion *Allium shevockii*	--/--/S2/1B.3	Perennial bulbiferous herb found in lodgepole forests and red fir forests. 2000-2500 m. Blooming period is May – June.	**Not Expected.** This species is generally associated with lodgepole and red fir forest habitats, which are absent from the study area.
California androsace *Androsace elongata* ssp. *acuta*	--/--/S3S4/4.2	Annual herb found in chaparral, foothill woodland, northern coastal scrub and coastal sage scrub habitats. Usually associated with dry grassy slopes at elevations <1200 m. Blooming period is from March - June.	**Moderate.** Marginal, highly disturbed habitat for this species is present within the study area and species was last reported within the vicinity in 2015.
Walker Pass milk-vetch *Astragalus ertterae*	--/--/S2/1B.3	Perennial herb found in open areas with sandy, granitic soil and associated with pinyon-juniper woodlands and pine/oak woodlands at elevations from 1750 – 1900 m. Blooming period is from April – May.	**Not Expected.** While suitable soils are present in some areas on project site, no suitable woodland habitats or elevation requirements are present within the study area.
Kern County milk-vetch *Astragalus subvestitus*	--/--/S3/4.3	Perennial herb found in Great Basin scrub, meadows and seeps, and pinyon and juniper woodlands. Blooming period is June – July; occurs at elevations of 2330 - 2750 m.	**Not Expected.** No suitable habitats within required elevation ranges available within the study area.
Mexican mosquito fern *Azolla microphylla*	--/--/S4/4.2	Annual/perennial herb associated with marshes and swamps (ponds, slow water) from 30 – 100 m. Blooming period is in August.	**Not Expected.** Required elevation ranges for this species are not within the study area.
pinyon rockcress *Boechera dispar*	--/--/S3/2B.3	Perennial herb associated with creosote bush scrub, Joshua tree woodlands, pinyon-juniper woodlands with rocky slopes and gravelly soils in desert scrub from 1200 – 2500 m. Blooming period is from March – June.	**Not Expected.** No suitable habitats and soils within required elevation ranges available within the study area for this species.
hidden rockcress *Boechera evadens*	--/--/S1/1B.3	Perennial herb found in upper montane coniferous forest from 2560 - 2850 m. Blooming period is May - August.	**Not Expected.** No suitable habitats within required elevation ranges available within the study area for this species.
Palmer's mariposa lily *Calochortus palmeri* var. *palmeri*	--/--/S2/1B.2	Perennial bulbiferous herb found in mesic habitats such as chaparral, lower montane coniferous forest, and meadows and seeps at 700 - 2390 m elevation. Blooming period is April – July.	**Low.** Marginal, highly-disturbed habitat for this species is present within the study area.
alkali mariposa lily *Calochortus striatus*	--/--/S3/1B.2	Perennial bulbiferous herb that occurs in alkaline and mesic soils within chaparral, chenopod scrub, Mojavean desert scrub and meadows and seeps at elevations from 70 – 1595 m. Blooming period is April - June.	**Moderate.** Marginal, highly-disturbed habitat for this species is present within the study area. However, a record shows that this species has been previously found in pastureland outside of the study area in 1981.

TABLE 3.6-3 (CONTINUED)
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Common and Scientific Name	Status[1] (Federal/State/ CNDDB/CRPR)	Habitat	Potential to Occur
Kern River evening-primrose *Camissonia integrifolia*	--/--/S2/1B.3	Annual herb occurring chaparral habitats. Occurs at elevations of 700 – 1000 m. Blooming period is April – May.	**Moderate.** Marginal, highly-disturbed habitat for this species is present within project site, however, this species has been collected near the study area within sagebrush habitat.
Kern County evening-primrose *Camissonia kernensis* ssp. *kernensis*	--/--/S3/4.3	Annual herb found in chaparral, Joshua tree woodland, and pinyon and juniper woodlands with sandy or gravelly, and granitic soils. Blooming period is March - May; occurs at elevations from 790 – 2130 m.	**Moderate.** High quality habitat for this species is present within the study area. This species was collected within the general area more than 25 years ago.
white pygmy-poppy *Canbya candida*	--/--/S3S4/4.2	Annual herb occurs in gravelly, sandy and granitic soils within Joshua tree woodlands, Mojavean desert scrub and pinyon and juniper woodlands. Blooming period is March – June and occurs at 600 – 1460 m elevation.	**Moderate.** Small patches of habitat available on the project site and species collected within the general vicinity recently.
northern clustered sedge *Carex arcta*	--/--/S1/2B.2	Perennial herb found in bogs and fens, North Coast coniferous forest (mesic); from 60 – 1400 m elevation. Blooming period is June - September.	**Not Expected.** No suitable habitats within the study area for this species.
Muir's tarplant *Carlquistia muirii*	--/--/S2/1B.3	Perennial rhizomatous herb found in chaparral, lower and upper montane coniferous forest habitats; found in granitic sites from 755 – 2500 m elevation. Blooming period is July - August.	**Not Expected.** No suitable habitats within required elevation ranges available within the study area for this species.
Kern ceanothus *Ceanothus pinetorum*	--/--/S3/4.3	Perennial evergreen shrub found in chaparral (montane), and lower and upper montane coniferous forests with granitic soils at 755 - 2500 m elevation. Blooming period is July - August.	**Not Expected.** No suitable habitats within required elevation ranges available within the study area for this species.
slender clarkia *Clarkia exilis*	--/--/S3/4.3	Annual herb found in cismontane woodlands at elevations at 120 - 1000 m. Blooming period is April - May.	**Low.** Small marginal patches of habitat within the northern and southern most reaches of the study area.
Kern Canyon clarkia *Clarkia xantiana* ssp. *parviflora*	--/--/S3S4/4.2	Annual herb found within chaparral, cismontane woodlands, great basin scrub and valley and foothill grasslands often with sandy soils, sometimes rocky soils, on slopes and sometimes along roadside habitats at elevations from 700 - 3620 m. Blooming period is May - June.	**Moderate.** Marginal habitat occurs within the study area but recent record has been recorded within CNDDB in the general vicinity.
Kern Plateau bird's-beak *Cordylanthus eremicus* ssp. *kernensis*	--/--/S2/1B.3	Annual hemiparasitic herb found in Great Basin scrub, Joshua tree woodland, pinyon and juniper woodland, upper montane coniferous forests at elevations of 1675 – 3000 m. Blooming period is July – September.	**Not Expected.** Required elevation ranges for this species are not within the study area.

TABLE 3.6-3 (CONTINUED)
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Common and Scientific Name	Status[1] (Federal/State/ CNDDB/CRPR)	Habitat	Potential to Occur
short-bracted bird's-beak *Cordylanthus rigidus* ssp. *brevibracteatus*	--/--/S3/4.3	Annual hemiparasitic herb found in openings within chaparral, lower and upper montane coniferous forests and pinyon and juniper woodland with granitic slopes at elevations of 610 – 2590 m. Blooming period is June – July,	**Low.** Marginal habitat for this species available but not historically found within the study area.
Clokey's cryptantha *Cryptantha clokeyi*	--/--/S3/1B.2	Annual herb found in Mojavean desert scrub at 725 - 1365 m elevation. Blooming period is April.	**Not Expected.** No suitable habitat available within the study area.
Clustered-flower cryptantha *Cryptantha glomeriflora*	--/--/S4/4.3	Annual herb found in Great Basin scrub, meadows and seeps, subalpine coniferous forests and upper montane coniferous forests with granitic or volcanic slopes with sandy soils. Blooming period is June - September; occurs at elevations from 1800 - 3750 m.	**Not Expected.** No suitable habitats or elevation ranges available within the study area.
Tulare cryptantha *Cryptantha incana*	--/--/S2/1B.3	Annual herb found in lower montane coniferous forests with gravelly or rocky soils. Blooming period is June - August; found at elevations of 1430 – 2150 m.	**Not Expected.** No suitable habitats, or elevation ranges available within the study area.
Mojave tarplant *Deinandra mohavensis*	--/SE/S2/1B.3	Annual herb occurring in mesic chaparral, coastal scrub and riparian scrub habitats at elevations of 640 – 1600 m. Blooming period is June – October.	**Low.** Marginal habitat for this species available but not historically found within the study area.
unexpected larkspur *Delphinium inopinum*	--/--/S3/4.3	Perennial herb occurs in upper montane coniferous forest with rocky or metamorphic soils at 1890 - 2800m elevation. Blooming period is May – June.	**Not Expected.** No suitable habitats, or elevation ranges available within the study area.
rose-flowered larkspur *Delphinium purpusii*	--/--/S3/1B.3	Perennial herb found in chaparral, cismontane woodlands and pinyon and juniper woodlands with rocky and often carbonate soils. Found at elevations from 300 - 1340 m elevation. Blooming period is April - May.	**High.** Suitable habitats are found within the study area and are known to occur.
calico monkeyflower *Diplacus pictus*	--/--/S2/1B.2	Annual herb found in broadleafed upland forest or cismontane woodland habitats that have granitic soils. May also be found within disturbed areas. Occurs from 100 - 1430 m elevation; blooming period occurs March – May.	**Low.** Marginal habitat for this species is present within the study area and also occurs within disturbed areas, but there are no records of the species within the general vicinity.
limestone dudleya *Dudleya abramsii* ssp. *calcicola*	--/--/S4/4.3	Perennial herb occurs within chaparral and pinyon and juniper woodland habitats with carbonate soils. Found at 500 – 2600 m elevation. Blooming period is April – August.	**Moderate.** Marginal habitat for this species is present within the study area with one record from CNDDB within the vicinity of the project site.
few-flowered eriastrum *Eriastrum sparsiflorum*	--/--/S4/4.3	Annual herb found in openings within chaparral, cismontane woodland, great basin scrub, Joshua tree woodlands, Mojavean desert scrub, and pinyon and juniper woodland habitats with granitic and sandy soils at 1075 - 1710 m elevation. Blooming period is May – September.	**Not Expected.** No suitable habitats or elevation ranges available within the study area.

TABLE 3.6-3 (CONTINUED)
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Common and Scientific Name	Status[1] (Federal/State/ CNDDB/CRPR)	Habitat	Potential to Occur
Tracy's eriastrum *Eriastrum tracyi*	--/--/S2S3/3.2	Annual herb found in chaparral, cismontane woodland and valley and foothill grassland habitats at 315 - 1780 m elevation. Blooming period is May – July.	**Moderate.** Marginal habitat for this species is present within the study area with one record from CNDDB within the vicinity of the project site.
Gilman's goldenbush *Ericameria gilmanii*	--/--/S2/1B.3	Perennial shrub found in subalpine coniferous forest, upper montane coniferous forest habitats within carbonate or granitic, rocky areas at 2100 - 3400 m elevation. Blooming period is August – September.	**Not Expected.** No suitable habitats or elevation ranges available within the study area.
Breedlove's buckwheat *Eriogonum breedlovei* var. *breedlovei*	--/--/S2/1B.2	Perennial herb found in carbonate soils of pinyon and juniper woodlands and upper montane coniferous forests at 1890 - 2590 m elevation. Blooming period is June - August.	**Not Expected.** No suitable habitats or elevation ranges available within the study area.
The Needles buckwheat *Eriogonum breedlovei* var. *shevockii*	--/--/S3/4.3	Perennial herb found in granitic or rocky soils of pinyon and juniper woodlands and upper montane coniferous forest habitats at 1615 - 2575 m elevation. Blooming period is July – September.	**Not Expected.** No suitable habitats or elevation ranges available within the study area.
Barstow woolly sunflower *Eriophyllum mohavense*	--/--/S2/1B.2	Annual herb found in chenopod scrub, Mojavean desert scrub, playa habitats at 500 - 960 m elevation. Blooming period is March - May.	**Not Expected.** No suitable habitats available within the study area.
Kelso Creek monkeyflower *Erythranthe shevockii*	--/--/S2/1B.2	Annual herb found in Joshua tree woodland or pinyon and juniper woodland habitats with granitic or metamorphic slopes and sandy or gravelly soils at 800 - 1340 m elevation. Blooming period is March - May.	**Low.** Only marginal and small patches of Joshua tree woodland habitat is available within the study area.
Sierra Nevada monkeyflower *Erythranthe sierrae*	--/--/S2/4.2	Annual herb found in openings of cismontane woodlands and lower montane coniferous forests or dry meadows and seeps with usually granitic, sandy and sometimes gravelly soils. Can typically be found in vernally wet depressions, swales, or streambanks at 185 - 2285 m elevation. Blooming period is March – July.	**Low.** While marginally suitable habitat is located within the study area, this plant has been shown to occur at higher elevation ranges.
Death Valley sandmat *Euphorbia vallis-mortae*	--/--/S3/4.2	Perennial herb found in Mojavean desert scrub within sandy or gravelly soils at 230 - 1460 m elevation. Blooming period is May – October.	**Not Expected.** No suitable soils and habitats are available within the study area.
Coville's green-gentian *Frasera tubulosa*	--/--/S3/4.3	Perennial herb found in sandy and granitic soils of lower and upper montane coniferous forest habitats at 955 - 3290 m elevation. Blooming period is July - August.	**Not Expected.** No suitable soils, habitats, or elevation ranges available within the study area.
Greenhorn fritillary *Fritillaria brandegeei*	--/--/S2S3/1B.3	Perennial bulbiferous herb found in granitic soils of lower montane coniferous forest habitat at 1330 - 2100 m elevation. Blooming period is April - June.	**Not Expected.** No suitable habitats, or elevation ranges available within the study area.

TABLE 3.6-3 (CONTINUED)
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Common and Scientific Name	Status[1] (Federal/State/ CNDDB/CRPR)	Habitat	Potential to Occur
pine fritillary *Fritillaria pinetorum*	--/--/S4/4.3	Perennial bulbiferous herb found in granitic or metamorphic soils within chaparral, lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, upper montane coniferous forest habitat at 1735 - 3300 m elevation. Blooming period is May - July.	**Not Expected.** No suitable habitats, or elevation ranges available within the study area.
Onyx Peak bedstraw *Galium angustifolium* ssp. *onycense*	--/--/S3/1B.3	Perennial herb found in granitic and rocky soils of cismontane woodland and pinyon and juniper woodland habitats at 860 - 2300 m elevation. Blooming period is April – July.	**Moderate.** Some small patches of suitable habitat occur within the study area and the study area is within the known range of occurrence for this species.
Piute cypress *Hesperocyparis nevadensis*	--/--/S2/1B.2	Perennial evergreen tree found in closed-cone coniferous forest, chaparral, cismontane woodland and pinyon and juniper woodland habitats at 720 - 1830 m elevation.	**Not Expected.** No suitable soils, habitats, or elevation ranges available within the study area.
field ivesia *Ivesia campestris*	--/--/S3/1B.2	Perennial herb found at the edges of meadows and seeps, subalpine coniferous forest, and upper montane coniferous forest habitats at 1975 - 3395 m elevation. Blooming period is May – August.	**Not Expected.** No suitable soils, habitats, or elevation ranges available within the study area.
Yosemite lewisia *Lewisia disepala*	--/--/S2/1B.2	Perennial herb found in granitic and sandy soils of lower montane coniferous forest, pinyon and juniper woodland, and upper montane coniferous forest habitats at 1035 - 3500 m elevation. Blooming period is March - June.	**Not Expected.** No suitable habitats with coniferous forests or pinyon and juniper woodlands within the study area.
crowned muilla *Muilla coronata*	--/--/S3/4.2	Perennial bulbiferous herb in chenopod scrub, Joshua tree woodland, Mojavean desert scrub and pinyon and juniper woodland habitats at 670 - 1960 m elevation. Blooming period is in March - April.	**Not Expected.** No suitable soils, habitats, or elevation ranges available within the study area.
Chimney Creek nemacladus *Nemacladus calcaratus*	--/--/S1/1B.2	Annual herb found in granitic flats of pinyon and juniper woodland habitats at 1900 - 2100 m elevation. Blooming period is in May – June.	**Not Expected.** No suitable soils, habitats, or elevation ranges available within the study area.
large-flowered nemacladus *Nemacladus secundiflorus* var. *secundiflorus*	--/--/S3?/4.3	Annual herb found in openings of chaparral and valley and foothill grassland habitats with gravelly soils at 200 - 2000 m elevation. Blooming period is in April – June.	**Not Expected.** No suitable soils and habitats available within the study area.
Twisselmann's nemacladus *Nemacladus twisselmannii*	--/--/S1/1B.2	Annual herb found in upper montane coniferous forest habitats with sandy or rocky granitic soils at 2240 - 2450 m elevation. Blooming period is in July.	**Not Expected.** No suitable soils, habitats, or elevation ranges available within the study area.
woolly mountain-parsley *Oreonana vestita*	--/--/S3/1B.3	Perennial herb found in gravel or talus of lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest habitats at 1615 - 3500 m elevation.	**Not Expected.** No suitable soils, habitats, or elevation ranges available within the study area.

TABLE 3.6-3 (CONTINUED)
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Common and Scientific Name	Status[1] (Federal/State/ CNDDB/CRPR)	Habitat	Potential to Occur
Spjut's bristle moss *Orthotrichum spjutii*	--/--/S1/1B.3	Moss found in granitic rocks of lower and upper montane coniferous forest, pinyon and juniper woodland, and subalpine coniferous forest habitats at 2100 - 2400 m elevation.	**Not Expected.** No suitable soils, habitats, or elevation ranges available within the study area.
Charlotte's phacelia *Phacelia nashiana*	--/--/S3/1B.2	Annual herb found in granitic and sandy soils of Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland habitats at 600 – 2200 m elevation. Blooming period is in March – June.	**Not Expected.** No suitable habitats are available on the project site. All listed occurrences are further east of the study area.
Nine Mile Canyon phacelia *Phacelia novenmillensis*	--/--/S2S3/1B.2	Annual herb found in sandy or gravelly soil, often in leaf litter under *Quercus* within broadleafed upland forest, cismontane woodland, pinyon and juniper woodland, upper montane coniferous forest habitats at 1645 – 2640 m elevation. Blooming period is in May – June.	**Not Expected.** No suitable soils, habitats, or elevation ranges available within the study area.
wine-colored tufa moss *Plagiobryoides vinosula*	--/--/S2/4.2	Moss found in granitic rocks or granitic soils along seeps and streams and sometimes within clay of cismontane woodland, Mojavean desert scrub, meadows and seeps, pinyon and juniper woodland, and riparian woodland habitats at 30 - 1735 m elevation.	**Not Expected.** No suitable habitat or soils available within the study area.
Mason's neststraw *Stylocline masonii*	--/--/S1/1B.1	Annual herb found in sandy soils of chenopod scrub and pinyon and juniper woodland habitats at 100 – 1200 m elevation. Blooming period is between March – May.	**Not Expected.** Lack of suitable habitat and soils within the study area.
Dedecker's clover *Trifolium dedeckerae*	--/--/S2/1B.3	Perennial herb found in granitic, rocky soils within lower montane coniferous forest, pinyon and juniper woodland, subalpine coniferous forest, upper montane coniferous forest habitats at 2100 - 3500 m elevation. Blooming period is between May – July.	**Not Expected.** No suitable habitat, soil, or elevation ranges are available within the study area.
grey-leaved violet *Viola pinetorum* ssp. *grisea*	--/--/S3/1B.3	Perennial herb found in meadows and seeps, subalpine coniferous forest, and upper montane coniferous forest habitats at 1500 - 3400 m elevation. Blooming period is between April – July.	**Not Expected.** No suitable habitat, soil, or elevation ranges are available within the study area.

TABLE 3.6-3 (CONTINUED)
SPECIAL-STATUS PLANT SPECIES WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Common and Scientific Name	Status[1] (Federal/State/ CNDDB/CRPR)	Habitat	Potential to Occur

[1] Description of status codes:

Federal Listings
FE = Listed as endangered under the FESA
FT = Listed as threatened under the FESA
State Listings
ST= Listed as threatened under the CESA
SE = Listed as endangered under the CESA
CNDDB Element Rankings
S1 = Less than 6 element occurrences (EOs) or 1,000 individuals or less than 2,000 acres (S1.1 very threatened, S1.2 threatened, S1.3 no current threats known)
S2 = 6-20 EOs or 1,000-3,000 individuals or 2,000-10,000 acres (S2.1 very threatened, S2.2 threatened, S2.3 no current threats known)
S3 = 21-100 EOs or 3,000-10,000 individuals or 10,000-50,000 acres (S3.1 very threatened, S3.2 threatened, S3.3 no current threats known)
S4 = Apparently secure; this rank is clearly lower than S3 but factors exist to cause some concerns; i.e., there is some threat, or somewhat narrow habitat,
SNR = Not yet ranked
SX = Apparently extirpated from California
? = Indicates some uncertainty
California Rare Plant Rank (CNPS, 2019)
CRPR 1B = Plants rare, threatened or endangered in California and elsewhere
CRPR 2B = Plants rare, threatened or endangered in California, but more common elsewhere
CRPR 3 = Plants about which more information is needed
CRPR 4 = Plant of limited distribution
Threat Ranks (CNPS, 2019)
0.1 = Seriously threatened in California
0.2 = Moderately threatened in California
0.3 = Not very threatened in California

Special-Status Wildlife

Based on the characteristics of the habitats identified during the field survey and with consideration of previously recorded occurrences, as well as known distribution and range limitations, it was determined that 16 wildlife species have a moderate or high potential to occur or were noted as present within the study area. Of these, the following five species are federally- or state-listed: Crotch bumble bee (*Bombus crotchii*), western yellow-billed cuckoo (*Coccyzus americanus* ssp. *occidentalis*), southwestern willow flycatcher (*Empidonax traillii* ssp. *extimus*), tri-colored blackbird (*Agelaius tricolor*), and least Bell's vireo (*Vireo bellii* ssp. *pusillus*).

The non-listed special-status species of wildlife that were considered and determined to have at least a moderate or high potential to occur in the study area include Cooper's hawk (*Accipiter cooperi*), golden eagle (*Aquila chrysaetos*), California legless lizard (*Anniella sp.*), pallid bat (*Antrozous pallidus*), Kern Plateau salamander (*Batrachoseps robustus*), Townsend's big eared bat (*Corynorhinus townsendii*), yellow-breasted chat (*Icteria virens*), summer tanager (*Piranga rubra*), and yellow warbler (*Setophage petechia*). In addition, the loggerhead shrike (*Larius ludovicianus*) and the Kern red-winged blackbird (*Agelaius phoeniceus aciculatus*), both California species of special concern, were observed within the study area during the reconnaissance-level field survey.

Table 3.6-2 lists the special-status wildlife species considered regarding their potential to occur within the study area and identifies the protective status and preferred habitat of each. The "Potential to Occur" category is defined as follows:

- **Not Expected:** The study area completely lacks suitable habitat OR there is suitable habitat but the study area lies well outside the species geographic and/or or elevation range or the species has not been documented in the general area for more than 50 years.
- **Low Potential:** The study area and/or immediate vicinity contains low quality habitat and is within the known range for a particular species OR there is suitable habitat in the study area but the species has not been reported in the general area for more than 25 years.
- **Moderate Potential:** The study area contains suitable habitat for a particular species and lies within the species' known range OR the study area contains marginally suitable habitat and the species is known to occur in the general area.
- **High Potential:** The study area and/or immediate vicinity provide suitable habitat for a particular species and the species has been documented in the general vicinity within the last 25 years.
- **Present:** The species was observed within the study area and/or immediate vicinity during surveys.

Special-Status Plants

Based on the vegetation and habitats that were identified during the field survey, it was determined that ten special-status plant species have a moderate or high potential of occurring within the study area based on the presence of suitable habitat, soils, and environmental conditions, none of which are listed under the Federal or California Endangered Species Acts.

No special-status plant species were observed during the reconnaissance-level field survey. It should be noted that the reconnaissance surveys were conducted during the appropriate blooming period for identifying most special-status plant species; however, no focused botanical survey for these species was conducted.

Table 3.6-3 identifies the protective status and/or level of concern for each special-status plant species along with the potential to occur within the study area. The "Potential to Occur" categories are defined as follows:

- **Not Expected:** The study area completely lacks suitable habitat OR there is suitable habitat but the study area lies well outside the species geographic and/or or elevation range or the species has not been documented in the general area for more than 50 years.
- **Low Potential:** The study area and/or immediate vicinity contains marginal (low quality) habitat for a particular species and is within the species' known range OR there is suitable habitat in the study area but the species has not been reported in the general area for more than 25 years.
- **Moderate Potential:** The study area contains suitable habitat for a particular species and lies within the species' known range OR the study area contains marginally suitable habitat and the species is known to occur in the general area.

- **High Potential:** The study area and/or immediate vicinity provides suitable habitat for a particular species and the species has been documented in the general vicinity within the last 25 years.
- **Present:** The species or vegetation community/habitat was observed within the study area and/or immediate vicinity during surveys.

Sensitive Natural Communities

Sensitive natural communities are those that are considered by the CDFW to be imperiled due to their decline in the region and/or their ability to support special-status plant and/or wildlife species. These communities include those that, if eliminated entirely, significantly reduced, or substantially degraded, would sustain a significant adverse impact as defined under CEQA. Sensitive natural communities are important ecologically because their degradation and destruction could threaten populations of dependent plant and wildlife species, including special-status species, and significantly reduce the regional distribution and viability of the community. Loss of sensitive natural communities also can remove or reduce important ecosystem functions, such as water filtration by wetlands or bank stabilization by riparian woodlands.

The CDFW California Natural Communities List (CDFW, 2018) indicates which natural communities are considered sensitive. Four CDFW-designated sensitive vegetation communities occur within the study area: Fremont cottonwood forest, creeping rye grass turfs, red willow thickets, and Joshua tree woodland. The locations of these sensitive natural communities within the study area are described in the vegetation community descriptions above, and each community is depicted in Figure 3.6-2. Photos of sensitive natural communities are provided in Appendix C.

Aquatic Resources

Aquatic resources include federal and/or State protected wetlands and other aquatic or riparian habitats. Aquatic resources within the study area include agricultural ditches, the South Fork of the Kern River and portions of its floodplain, and wetland and riparian vegetation communities, such as Fremont cottonwood forests, salt grass flats, red willow thickets, cattail marshes, mulefat thickets, and sandbar willow thickets. Although creeping rye grass turfs is dominated by a species that is classified as “facultative,” and thus can occur in both wetlands and non-wetlands, this species is a hydrophyte (i.e., water-loving). This community is found within an area mapped as a potential wetland in the National Wetlands Inventory (NWI) map (USFWS, 2019a), so it should be included as potential wetland for purposes of this analysis. Vegetation within these communities may depend on hydrology supplied from natural or artificial drainages or a high groundwater table.

Within the study area, the South Fork of the Kern River is under the jurisdiction of the USACE, RWQCB, and CDFW. The agricultural ditches do not fall under the jurisdiction of the USACE based on the Code of Federal Regulations (CFR) Title 33 § 328.3 (b)(4)(i), which states that features that are not considered “waters of the U.S.” include “artificially irrigated areas that would revert to dry land should application of water to that area cease”. However, agricultural ditches may potentially be considered RWQCB jurisdictional “waters of the State.” A formal

aquatic resources delineation (i.e., in accordance with USACE wetland delineation procedures) was not conducted as part of the BTR provided in Appendix C Biological Resources Technical Report of this Draft EIR. Therefore, the presence of jurisdictional wetlands was not mapped. However, based on vegetation mapping, the study area may support approximately 667.6 acres of riparian habitat that could support aquatic habitat that could be subject to jurisdiction of the USACE, RWQCB, and/or CDFW.

Wildlife Movement and Habitat Linkages

Movement, including seasonal migration of some species of fish and terrestrial or avian wildlife, both seasonally and in response to resource availability, is vital for survival in virtually all ecosystems. Movement corridors may be characterized as habitat "linkages" that provide pathways for wildlife between otherwise disconnected open space areas that may be separated by unusable areas such as mountains, oceans, deserts and more recently, large-scale human development. Top tier predators, meso-predators, and prey species use such corridors for travel and refuge between open space areas, as well as for wintering and breeding grounds. Some movement corridors are created naturally by topography and have been used by wildlife for hundreds or thousands of years. Some landscape linkages have been provided by humans to mitigate for the loss of existing natural connections, such as bridge crossings, underpasses, and culverts. Natural features commonly utilized for local wildlife movement and migration include creeks, rivers, canyons, and valleys because these low-lying areas are generally flat and include an over-story of vegetation that provides shelter from predators.

The study area is located in an area where natural habitat is fragmented by agricultural and pastoral lands (as evidenced by the ubiquitous presence of non-native vegetation and agricultural fields and grazing pastures). Wildlife movement and dispersal by terrestrial species is expected to occur both locally and regionally throughout this area, particularly along the South Fork of the Kern River. A linkage between the Isabella Reservoir and the southern Sierra Nevada has been identified as an area of importance for wildlife movement in *Missing Linkages: Restoring Connectivity to the California Landscape* (Penrod et al., 2001). As shown in Figure 3.6-3, a small portion of the southern part of the study area is also identified as part of a wildlife connectivity area by the California Essential Habitat Connectivity Project (Spencer et al., 2010).

The Kern River Valley is also a resting stop for migrating birds along the Pacific Flyway. The Pacific Flyway is a major north-south flyway for migratory birds in America, extending from Alaska to Patagonia. Every year, migratory birds travel some or all of this distance both in spring and in fall, following food sources, heading to breeding grounds, or travelling to overwintering sites. Birds that are migrating along the Pacific Flyway may stop to rest or forage within the Kern River Valley (USFWS, 2019b).

Critical Habitat

Under FESA, the USFWS is required to designate critical habitat for endangered and threatened species. Critical habitat is defined as areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or

migration, feeding, roosting, cover, and shelter. Designated critical habitats require special management and protection of existing resources, including water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types. Critical habitat delineates suitable habitat, occupied or not, essential to the survival and recovery of the species.

Within the study area, USFWS designated critical habitat for the southwestern willow flycatcher and the yellow-billed cuckoo occurs within the riverine and floodplain of the South Fork of the Kern River (USFWS, 2018) (Figure 3.6-4). The South Fork of the Kern River provides suitable habitat by supporting thickets of large trees, such as willows and cottonwoods, with a relatively low-density canopy and patches of thick understory containing mulefat. The last documented occurrence of southwestern willow flycatcher within the vicinity of the South Fork was August 5, 2016 (CDFW, 2018) and the last documented occurrence of yellow-billed cuckoo was in 2017 (Stanek, 2017). A total of approximately 455 acres of yellow-billed cuckoo critical habitat and approximately 1,545 acres of southwestern willow flycatcher critical habitat overlap the study area.

3.6.2 Regulatory Framework

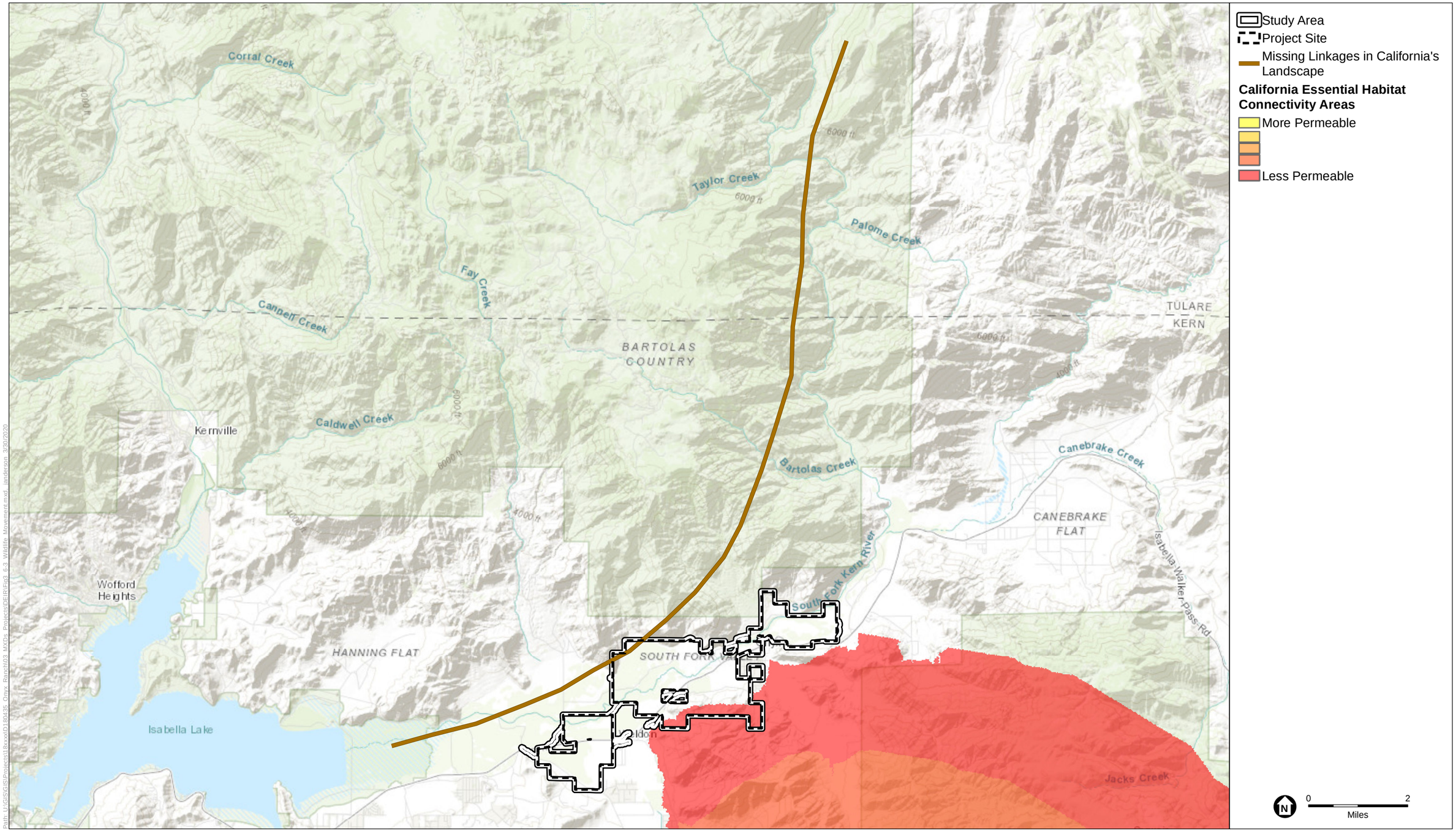
The following provides a general description of the applicable regulatory requirements for the proposed project and the study area, including federal, State, and local policies and guidelines.

Federal

Endangered Species Act (USC, Title 16, Sections 1531 through 1543)

The Federal Endangered Species Act (FESA) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. In addition, the FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA also provides a program for the conservation and recovery of threatened and endangered species as well as the conservation of designated critical habitat that the United States Fish and Wildlife Service (USFWS) determines is required for the survival and recovery of these listed species.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in CCR Title 50, Part 402. The opinion issued at the conclusion of consultation will include a statement authorizing “take” (i.e., to harass, harm, pursue, hunt, wound, kill, etc.) that may occur incidental to an otherwise legal activity.

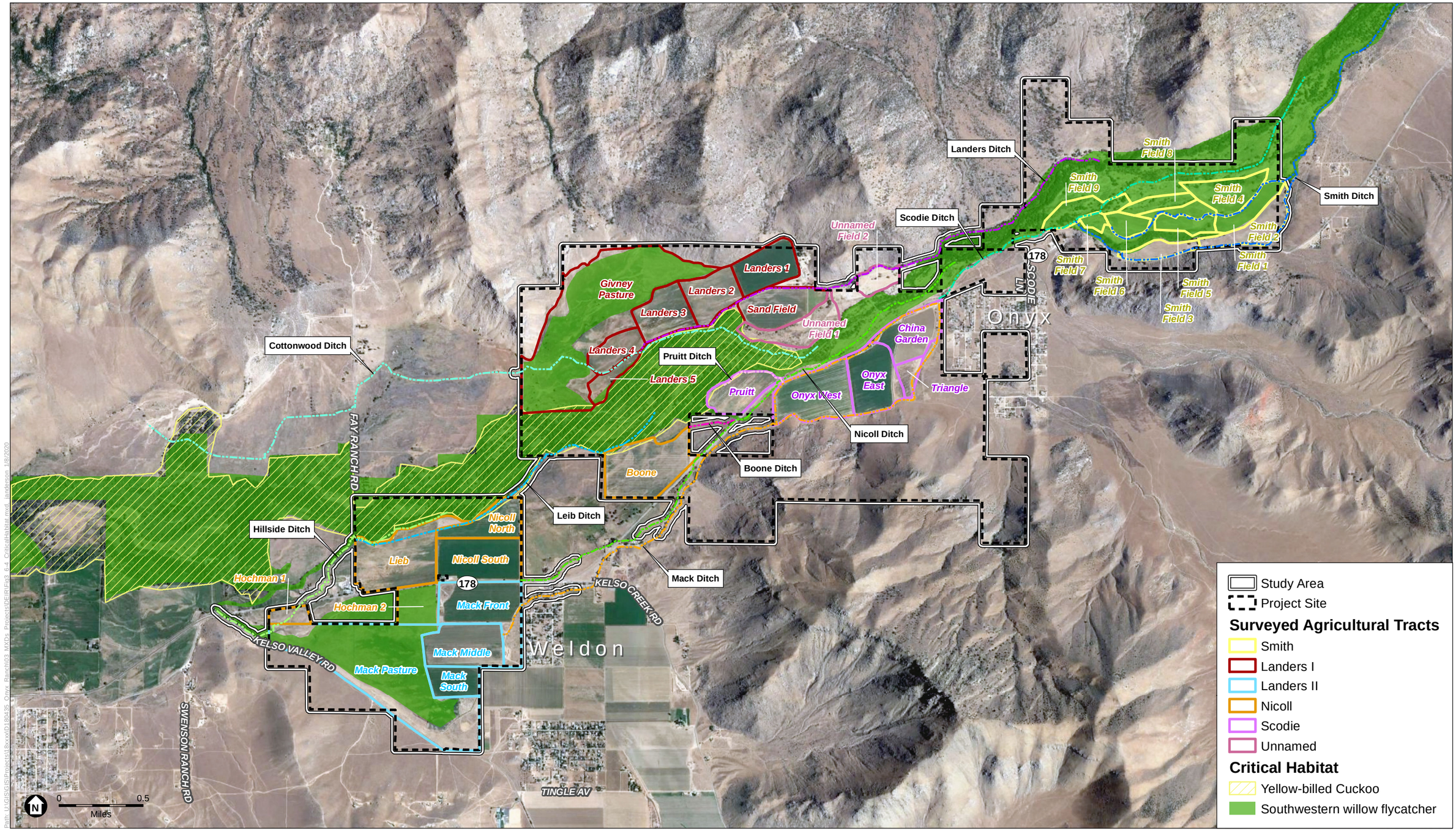


SOURCE: ESRI; ESA, 2018; CDFW, 2019.

Onyx Ranch South Fork Valley Water Project

Figure 3.6-3
Wildlife Movement

ESA



SOURCE: Google Earth, 2018; Rosedale-Rio Bravo Water Storage District; USFWS, 2019.

Onyx Ranch South Fork Valley Water Project

Figure 3.6-4
Critical Habitat

ESA

Section 9 of the FESA lists those actions that are prohibited. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity. Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of "harm" includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. "Harass" is defined as actions that create the likelihood of injury to listed species by significantly disrupting normal behavioral patterns related to breeding, feeding, and shelter.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at 50 CFR 13 and 17 for species under the jurisdiction of the USFWS and 50 Code of Federal Regulations (CFR) 217, 220, and 222 for species under the jurisdiction of NMFS.

Migratory Bird Treaty Act (USC, Title 16, Sections 703 through 711)

The Migratory Bird Treaty Act (MBTA) is the domestic law that affirms, or implements, a commitment by the U.S. to four international conventions (with Canada, Mexico, Japan, and Russia) for the protection of a shared migratory bird resource. The MBTA makes it unlawful at any time, by any means, or in any manner to pursue, hunt, take, capture, or kill migratory birds. The law also applies to the removal of nests occupied by migratory birds during the breeding season. The MBTA makes it unlawful to take, pursue, molest, or disturb these species, their nests, or their eggs anywhere in the United States.

Clean Water Act (Section 401 and 404)

In accordance with Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into waters of the United States. Waters of the United States and their lateral limits are defined in 33 CFR 328.3(a) and includes navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Waters of the United States are often categorized as "jurisdictional wetlands" (i.e., wetlands over which the USACE exercises jurisdiction under Section 404) and "other waters of the United States" when habitat values and characteristics are being described. "Fill" is defined as any material that replaces any portion of a water of the United States with dry land or that changes the bottom elevation of any portion of a water of the United States. Any activity resulting in the placement of dredged or fill material within waters of the United States requires a permit from the USACE. In accordance with Section 401 of the CWA, projects that apply for a Section 404 permit for discharge of dredged or fill material must obtain water quality certification from the appropriate Regional Water Quality Control Board (RWQCB) indicating that the proposed project would uphold State of California water quality standards.

State of California

California Endangered Species Act (California Fish and Game Code Section 2050 et seq.)

The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. There are no State agency consultation procedures under the CESA. For projects that would affect a listed species under both the CESA and the FESA, compliance with the FESA would satisfy the CESA if the California Department of Fish and Wildlife (CDFW) determines that the federal incidental take authorization is "consistent" with the CESA under California Fish and Game Code (CFGC) Section 2080.1. For projects that would result in take of a species listed under the CESA only, the project proponent would have to apply for a take permit under Section 2081(b).

Section 2080 of the CFGC states that "No person shall import into this State [California], export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the Commission [State Fish and Game Commission] determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter, or the Native Plant Protection Act, or the California Desert Native Plants Act." Pursuant to Section 2081 of the code, the CDFW may authorize individuals or public agencies to import, export, take, or possess State-listed endangered, threatened, or candidate species. These otherwise prohibited acts may be authorized through permits or Memoranda of Understanding if the take is incidental to an otherwise lawful activity, impacts of the authorized take are minimized and fully mitigated, the permit is consistent with any regulations adopted pursuant to any recovery plan for the species, and the project operator ensures adequate funding to implement the measures required by the CDFW, which makes this determination based on available scientific information and considers the ability of the species to survive and reproduce.

California State Fish and Game Code Section 1600 et seq.

Under these sections of the CFGC, the project proponent is required to notify the CDFW prior to any project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to 14 California Code of Regulations (CCR) § 1.72, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supports fish or other aquatic life. Streams include watercourses with surface or subsurface flow that support or have supported riparian vegetation.

The proposed project includes the installation of up to 12 shallow, low-volume wells powered by solar facilities, provided on an as needed basis, that would be located in previously disturbed areas at least 1,000 feet from the South Fork of the Kern River. Therefore, the proposed wells would be located outside of the sensitive natural communities, riparian areas, and marsh habitats areas. The earthen irrigation ditches on the project site are not a river, stream, or lake. There would be no diversion of the natural flow of any river, stream, or lake; rather, the proposed

project would maintain the natural flows within the South Fork of the Kern River. Therefore, the proposed project would not have activities subject to CFGC Section 1600 et seq.

California State Fish and Game Code Sections 3503, 3503.5, 3513, and 3800

Section 3503 of the CFGC 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 (e.g., species in the orders Falconiformes and Strigiformes), including its nests or eggs. Typical violations of these codes include destruction of active nests resulting from removal of vegetation in which the nests are located. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. This statute does not provide for the issuance of any type of incidental take permit.

Section 3800 of the CFGC affords protection to all nongame birds, which are all birds occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds. Section 3513 of the CFGC upholds the MBTA by prohibiting any take or possession of birds that are designated by the MBTA as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA.

California Fully Protected Species (California Fish and Game Code Sections 3511, 4700, 5050, and 5515)

California fully protected species are described in Sections 3511, 4700, 5050, and 5515 of the CFGC. These statutes prohibit take or possession of any fully protected species. The CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by those species.

State Wetland Conservation Policy

In 1993, Governor Pete Wilson signed Executive Order W-59-93, the State's "No Net Loss" policy for wetlands, establishing a State Wetland Conservation Policy (SWCP) and providing comprehensive direction for the coordination of state-wide activities for the preservation and protection of wetland habitats. The SWCP was the first state-wide conservation policy of its type in the United States. The Natural Resources Agency and the California Environmental Protection Agency (CalEPA) are designated as co-lead to implement the goals of the SWCP.

California Environmental Quality Act Guidelines Section 15380

Although threatened and endangered species are protected by specific federal and State statutes, California Environmental Quality Act (CEQA) Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the CFGC dealing with rare or endangered plants or animals. This section was included in CEQA primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on, for example, a candidate species that has not been listed by either the USFWS or the CDFW. Thus, CEQA provides an agency with the ability to protect a species from the potential impacts of

a project until the respective government agencies have an opportunity to designate the species as protected, if warranted. CEQA also calls for the protection of other locally or regionally significant resources, including riparian habitats and other sensitive natural communities. Although sensitive natural communities do not at present have legal protection of any kind, CEQA calls for an assessment of whether any such resources would be affected, and requires findings of significance if there would be substantial losses. Natural communities listed by the CDFW California Natural Diversity Database (CNDDB) as sensitive are considered by the CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents such as general plans often identify these resources as well. The CEQA Guidelines require an evaluation of whether a project would have a substantial adverse effect on State or federally protected wetlands, or interfere substantially with wildlife movement or migratory wildlife corridors. In addition, conflicts with any local policies or ordinances protecting biological resources and any conflicts with provisions of adopted habitat conservation plans need to be analyzed.

Native Plant Protection Act (California Fish and Game Code Sections 1900 through 1913)

California's Native Plan Protection Act (NPPA) requires all State agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification to the CDFW at least 10 days in advance of any change in land use. This allows the CDFW to salvage listed plant species that would otherwise be destroyed. The project proponent is required to conduct botanical inventories and consult with the CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Local

No habitat conservation plans or natural community conservation plans are applicable to the study area.

The Kern County General Plan identifies an Oak Tree Conservation Policy (Code 1.10.10) that states that oak woodland and large oak trees shall be protected where possible and incorporated into project developments. However, this policy only applies to discretionary development projects and, therefore, is not applicable to the proposed project.

The Kern County local planning documents applicable to the study area or the proposed project are described below.

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, policies, and implementation measures of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the KRVSP area, which was addressed in the KRVSP adopted by Kern County in

2011. The KRVSP consists of elements that include goals, policies, and implementation measures related to the biological resources within the Kern River Valley.

Open Space and Recreation Element

The Open Space and Recreation Element focuses on the enhancement of open space and recreational facilities. This element discusses that maintaining open space areas would: conserve natural features necessary to preserve a diversity of plant and animal communities; protect endangered and other special status plant and animal species; and separate urban areas into distinct communities. This element also addresses watershed management and natural ecosystems. The applicable goals and policies are as follows:

Open Space/ Watershed Management

Goal 4.1.1: Protect and maintain water and related natural systems for all existing and future reasonable and beneficial uses within the South Fork Kern and Upper Kern watersheds.

Policy 4.1.1: To the maximum extent possible, preserve existing wetlands and the hydrological systems that support them.

Policy 4.1.7: Promote conservation of stream buffers, forests, meadows, and other areas of watershed value.

Natural Ecosystems

Goal 4.2.1: Preserve and maintain natural ecosystems and vegetation communities that support wild plants and animals.

Goal 4.2.2: Support and promote the restoration and maintenance of native habitat and wildlife species indigenous to the Kern Valley ecosystem.

Policy 4.2.1: Protect threatened and endangered plant and wildlife species in accordance with State and federal laws.

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009). The following element and its policies are applicable:

Land Use, Open Space, and Conservation Element

The Land Use, Open Space, and Conservation Element identifies goals, policies, and implementation measures to protect biological resources, particularly threatened and endangered species. The applicable policies are as follows:

General Provisions – Threatened and Endangered Species

Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.

Policy 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.

Policy 32: Riparian areas will be managed in accordance with USACE, and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns.

3.6.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to pages 3.6-1 and 3.6-2 above for a summary of the environmental issues and significance criteria included in this Draft EIR for the analysis of biological resources. This Draft EIR assumes implementation of the proposed project would have a significant impact related to biological resources if it 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 the 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 the 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.

Methodology

As described in Chapter 2, Project Description, the proposed project would modify diversions of surface water to the project site. The proposed project would reduce the diversion and use of surface water on the project site by converting irrigated fields and pasture to non-irrigated fields and pastures or native vegetation. With the proposed project, surface water that is diverted under existing conditions would remain in the South Fork of the Kern River and flow downstream. The following provides a summary of the proposed project activities that have the potential to effect biological resources within the study area.

Reduction of applied irrigation water to agricultural fields would reduce return flow and affect shallow groundwater beneath the fields at the project site. Groundwater levels would be expected to decrease in some areas closer to the project site and increase in other areas further downstream of the project site, depending on the season. The majority of fluctuations in groundwater levels would be on the order of a few feet. For high groundwater conditions (late rainy season), the fluctuations could be increases of up to about 2.9 feet and decreases up to about 15.6 feet, depending on location (Thomas Harder & Co., 2019).

Modification of surface water diversions would reduce or eliminate flow in some agricultural ditches. The changes to the existing diversion arrangement would be facilitated by closing connections at existing diversion structures between the South Fork of the Kern River and the agricultural ditch, as explained further below. No modifications would be made to existing diversion structures; no additional diversion structures would be constructed; and no impervious surfaces would be added. Modification of surface water diversions would result in the conveyance of more water in the South Fork of the Kern River downstream of the points of diversion to Smith Ranch and Onyx Ranch relative to the existing conditions.

On an as needed basis, up to 12 shallow, low-volume wells powered by solar facilities would be developed to provide livestock water and improved livestock distribution for more effective use of the available forage on the project site. The shallow, low-volume wells would be 6 inches in diameter and approximately 20 to 50 feet deep. Each well location would have a 2,000 to 4,000 gallon aboveground tank for water storage for use during weather conditions when the solar power for well pumping does not operate. The water tank would be on the ground and connect by an aboveground pipe to a livestock trough. The footprint of the aboveground well components would be approximately 20 feet by 40 feet. Each well is anticipated to have a 2 to 5 gallon-per-minute capacity, but actual use would depend on herd size, which may fluctuate annually based on drought conditions. Well locations and numbers would be determined during project implementation, based on field and pasture transitions, and livestock capacity. The wells would be sited at least 1,000 feet from the South Fork of the Kern River and in previously disturbed areas or upland areas that are outside of sensitive natural communities, riparian areas, and marsh habitats. With the proposed project, groundwater pumping for irrigation of the Boone Field would continue, similar to existing conditions. However, groundwater would not be used for irrigation purposes at any other fields on the Onyx Ranch. Therefore, the total volume of groundwater used by the proposed project would decrease from the existing groundwater use.

This section assesses the potential for biological resources to be affected by the aforementioned changes. The proposed changes in the baseline flows of each agricultural ditch and the associated fields as a result of the proposed project are depicted in Table 3.6-4. As explained in Table 3.6-4, the proposed project would not affect the existing operation of Scodie Ditch, Cottonwood Ditch, Lieb Ditch, Boone Ditch, Miller Ditch, or Prince Ditch. The proposed project would reduce either the flow volume or the period of time that water is typically flowing (referred to as “run time”), or both, in Mack Ditch, Landers Ditch, Nicoll Ditch, Hillside Ditch, and Smith Ditch, relative to existing conditions. The proposed project would eliminate flow in the Pruitt Ditch.

The phrase “potential impact area” as used in the analysis below is defined as the portions of the study area that may be affected by the proposed project including: agricultural fields and ditches that would see a reduction in irrigation or flow, including a 50-foot buffer. The total acreages of each existing vegetation communities and land cover type present within the potential impact area that may be affected by the proposed project are listed in Table 3.6-5. Table 3.6-5 only includes the ditches that would be affect by the proposed project as discussed above in Table 3.6-4.

TABLE 3.6-4
BASELINE DITCH CONDITION AND PROPOSED DIVERSION CHANGES

Ditch	Baseline Condition	Frequency of Use	Proposed Change in Baseline Flows
Smith Ditch	Used Routinely	Typically flows continuously November to June, except during maintenance outages.	Run time[a] would be the same. Flow rate would be adjusted down by 33 percent. Irrigation would continue by non-RRBWSD co-owners of the Smith Ranch property.
Scodie Ditch	Not In Use	Not in use	No change
Mack Ditch	Used Intermittently	Typically flows intermittently March to June with river water and July to October with well water.	From March to June, intermittent flows diverted to Mack Ditch diverted from the River would be discontinued to Mack Field and Mack Pasture. Ditch would continue to be used to transport well water annually from July to October to the Boone Field.
Landers Ditch	Used Routinely	Typically flows continuously except during maintenance outages.	Run time would be reduced annually. Flow rate would be reduced by approximately 75 percent. Ditch would continue to be used by the Audubon California Kern River Preserve to move water to the Cottonwood Ditch.
Nicoll Ditch	Used Routinely	Typically flows intermittently February to June.	Run time would not be reduced. Flow rate would be reduced by approximately 50 percent. Ditch would continue to be used by the Audubon California Kern River Preserve and the Nicoll Ranch.
Cottonwood Ditch	Used Routinely	Typically flows intermittently February to June as served from the Landers Ditch.	No change. RRBWSD would continue to move water for the Audubon California Kern River Preserve from the Landers Ditch to the Cottonwood Ditch.
Pruitt Ditch	Used Intermittently	Typically flows intermittently March to June with river water and July to October with well water.	Flow would cease.
Lieb Ditch	Not in Use	Not in Use	No change
Boone Ditch	Used Intermittently	Typically flows intermittently March to June with river water and July to October with well water.	No change
Miller Ditch	Used Routinely	Typically flows continuously February to June, except during maintenance outages.	No change
Prince Ditch	Used Routinely	Typically flows continuously February to June, except during maintenance outages.	No change
Hillside Ditch	Used Intermittently	Typically flows intermittently March to May.	Run time would not be reduced. Flow rate would be reduced by about 50 percent.

[a] Run time refers to the months when diverted water typically flows within ditches.
SOURCE: Rosedale-Rio Bravo Water Storage District, April 2019b.

TABLE 3.6-5
EXISTING VEGETATION COMMUNITIES/LAND COVER WITHIN THE POTENTIAL IMPACT AREA

	Pasture	Big Sagebrush Scrub	Fremont Cottonwood Forest	Rubber Rabbitbrush Scrub	Creeping Wild Rye Grass Turfs	Irrigated Hayfield	Needleleaf Rabbitbrush Scrub	Salt Grass Flats	Disturbed	Cropland (Sorghum)	Developed	Red Willow Thickets
Agricultural Ditches (acres)												
Smith Ditch	18.7	1.8	--	2.5	--	--	--	--	--	--	2.7	4.3
Mack Ditch	<0.10	<0.10	0.9	6.5	--	<0.10	--	--	34.9	<0.10	1.5	--
Landers Ditch	<0.10	--	20.0	--	--	--	3.1	--	14.3	--	--	--
Nicoll Ditch	3.9	--	8.3	8.6	--	--	--	--	12.4	--	2.3	--
Pruitt Ditch	<0.10	--	<0.10	<0.10	--	--	--	--	4.4	--	<0.10	--
Hillside Ditch	3.1	--	9.9	1.6	1.0	--	--	2.8	3.6	--	0.5	--
Agricultural Tracts (acres)												
Landers I	149.9	--	2.8	--	277.50	111.2	--	5.7	<0.10	--	--	0.4
Landers II	172.6	--	--	72.8	75.9	--	--	143.6	1.0	--	9.6	--
Nicoll	302.6	--	1.0	0.8	45.0	--	--	2.3	12.1	--	2.5	--
Scodie	40.2	<0.10	--	19.7	--	98.3	--	--	4.0	71.5	6.7	--
Smith	140.0	<0.10	27.5	39.0	--	--	--	--	--	--	--	6.7
Unnamed	61.2	--	<0.10	--	--	--	0.1	--	--	--	--	--
Total	**892.2**	**1.8**	**70.4**	**151.5**	**399.4**	**209.5**	**3.2**	**154.4**	**86.7**	**71.5**	**25.8**	**11.4**

	Bare Ground	Cattail Marsh	Mulefat Thickets	Common Sunflower Patches	Sandbar Willow Thickets	Tamarisk Thickets
Agricultural Ditches[1] (acres)						
Smith Ditch	--	--	--	--	--	--
Mack Ditch	--	--	--	5.8	4.4	--
Landers Ditch	<0.10	1.3	--	--	--	--
Nicoll Ditch	--	--	0.6	--	0.6	--
Pruitt Ditch	--	--	0.4	--	--	--
Hillside Ditch	<0.01	--	--	--	--	--
Agricultural Tracts (acres)						
Landers I	--	17.7	<0.10	--	--	--
Landers II	3.8	--	1.4	--	<0.10	0.8
Nicoll	3.4	--	--	--	--	--
Scodie	--	--	<0.10	<0.10	--	--
Smith	--	--	--	--	--	--
Unnamed	--	<0.10	5.6	--	--	--
Total	**7.2**	**19.0**	**8.0**	**5.8**	**5.0**	**0.8**

* Indicates Sensitive Natural Community

1 Excludes vegetation within agricultural ditches

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Literature and Database Review

A review of literature and natural resource databases was conducted including the following:

- Aerial photographs of the study area and surrounding area.
- United States Geological Survey (USGS) topographic maps.
- Kern County General Plan (Kern County, 2009).
- Kern River Valley Specific Plan and Final Environmental Impact Report (Kern County, 2011a and 2011b).
- USFWS Critical Habitat Mapper (USFWS, 2018a).
- USFWS National Wetlands Inventory (NWI) wetlands mapper (USFWS, 2018b).
- CDFW CNDDB (CDFW, 2019a).
- CDFW California Natural Community List (CDFW, 2018).
- California Native Plant Society (CNPS) On-line Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2019).
- USFWS Information for Planning and Consultation (IPaC) (USFWS, 2018c).

The CNDDB, CNPS, and IPaC were queried for special-status species records within the Onyx USGS 7.5-minute topographic quadrangle map within which the study area is located, as well as the surrounding eight quadrangles: Cannell Peak, White Dome, Lamont Peak, Weldon, Walker Pass, Horse Canyon, Cane Canyon, and Woolstalf Creek. This nine-quadrangle search was conducted as a conservative approach to capture special-status species occurrence records within a larger area.

The CNDDB was also queried for sensitive natural communities (CDFW, 2019a). Sensitive natural communities are identified in the CDFW's California Natural Community List (CDFW, 2018), or in other local policies and plans such as the KRVSP, and are considered to provide important functions or values for wildlife and/or are recognized as declining in extent or distribution, and are considered threatened enough to warrant some level of protection.

A list of special-status species and sensitive natural communities was compiled from the database search results. These species and communities were then reviewed for their potential to occur within the study area based on their geographic and elevation ranges, habitat preferences, and the dates and locations of recorded occurrences.

Available background information, including USGS topographic maps and current and historical aerial photographs, were used in conjunction with Geographic Information System (GIS) data to characterize and map plant communities in the study area during field surveys, and to identify USFWS-designated critical habitat boundaries.

Biological Resource Surveys

Biological reconnaissance-level surveys were conducted by ESA biologists on July 10 through July 13 and August 31, 2018. The reconnaissance surveys were conducted on foot within accessible portions of the study area. In areas that were not accessible at the time of the survey, visual observations were made from the nearest accessible locations. Aerial photography and Geographic Positioning System technology were used to accurately map sensitive or important biological resources identified during field surveys.

Plant communities were characterized and mapped based on the dominant species present, including being initially mapped directly on aerial photographs and then digitized in ArcGIS. Plant taxonomy followed Baldwin, et al. (2012). Vegetation community descriptions were characterized using Sawyer et al (2009) and the CDFW's *California Natural Community List* (CDFW, 2018). Detailed maps of the vegetation communities within the study area and representative photographs of the study area and immediate vicinity are provided in the appendices to the BTR included in Appendix C to this Draft EIR.

Wildlife species were identified during the field reconnaissance by sight or call, or other evidence of presence (such as tracks, nests, scat, or remains), and with use of binoculars and taxonomic keys where appropriate. Vertebrate taxonomy followed Stebbins (1985) for amphibians and reptiles, the American Ornithologists' Union (1983 and supplements) for birds, and Jones et al. (1997) for mammals.

Potential wildlife habitat linkages (i.e., wildlife movement corridors) were identified in the study area based on the conditions observed during the field reconnaissance surveys, information compiled from the literature review, and inspection and evaluation of existing movement pathways and/or potential physical barriers observed on aerial photographs. This information was used to determine whether any landscape linkage that may traverse the study area could function as an important wildlife movement corridor connecting large open space areas located upstream and downstream of the study area.

Impact Analysis

Candidate, Sensitive, or Special Status Species

Potential Impact BIO-1: Would the proposed project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The proposed project would result in the development, on an as needed basis, of up to12 shallow, low-volume wells powered by solar facilities to provide livestock water. Each well location would have a 2,000 to 4,000 gallon aboveground tank for water storage during weather conditions when the solar power for well pumping does not operate. The wells would be sited in previously disturbed areas and upland areas on the project site and, therefore, outside of sensitive natural communities, riparian areas, and marsh habitats. All well installations would be scheduled outside of the September 1 – February 14 nesting bird season. Therefore, installation and operation of the

solar wells would result in no impacts to special-status plants or wildlife or their habitats, and no mitigation is required.

The following provides an assessment of the potential impacts to special-status plants and wildlife with implementation of the proposed project as a result of changes to surface water diversions.

Special-Status Wildlife

Based on the presence of suitable habitat, there is a moderate or high potential for 16 special-status wildlife species to occur within the study area, including the Crotch bumble bee, Kern Plateau salamander, California legless lizard, Cooper's hawk, Kern red-winged blackbird, tri-colored blackbird, golden eagle, western yellow-billed cuckoo, southwestern willow flycatcher, yellow-breasted chat, loggerhead shrike, summer tanager, yellow warbler, least Bell's vireo, pallid bat, and Townsend's big eared bat. Both Kern red-winged blackbird and loggerhead shrike were observed during the field surveys.

The majority of the riparian and marsh habitat within the potential impact area provides suitable foraging and breeding habitat for these species; however, direct impact to these habitats as a result of implementation of the proposed project and the associated agricultural activities would not occur. Instead, as discussed below, the extensive Fremont cottonwood forest habitat would benefit over time with conveyance of more water into the South Fork of the Kern River, while smaller patches of riparian habitat may decline over time as result of the reduced water availability to adjacent agricultural ditches, agricultural fields, and other areas supported by the changes in surface and groundwater. Although there would be a benefit to Fremont cottonwood forest, there may also be indirect effects that may lead to decline and reduction of some adjacent riparian areas, and eventually type conversion of the habitat as the mesic habitat transitions into a more xeric form. Breeding and foraging within these habitats would continue to take place in the interim, but may lead to the eventual loss of these habitat areas. A detailed analysis of potential affects to special-status wildlife species is presented below.

Southwestern Willow Flycatcher and Yellow-Billed Cuckoo

Both the southwestern willow flycatcher and yellow-billed cuckoo are known to utilize large swathes of riparian vegetation, generally greater than 10 meters (33 feet) wide for the flycatcher (Sogge et al., 2010) and greater than 80 hectares (198 acres) for the cuckoo (Halterman, 2015), to breed. Suitable breeding and foraging habitat of this size is present throughout the Fremont cottonwood forest located within the potential impact area; however, as discussed above and in the analysis of Potential Impact BIO-2 and Potential Impact BIO-3, no impact to the Fremont cottonwood forest as a result of the proposed project would be anticipated since additional flow in the South Fork of the Kern River would likely benefit this community and improve the overall condition of the Fremont cottonwood forest on the project site and in the downstream areas such as the Audubon California Kern River Reserve and South Fork Wildlife Area. Therefore, the conveyance of more water in the South Fork of the Kern River would be a benefit to the southwestern willow flycatcher and western yellow-billed cuckoo and their nesting and foraging habitat, as well as critical habitat designated for these species.

Suitable foraging habitat for the southwestern willow flycatcher and yellow-billed cuckoo is present elsewhere within the potential impact area, including the mulefat thickets, red willow thickets, sandbar willow thickets, cattail marsh, and tamarisk thickets. The changes to each of these riparian communities are discussed below in the analysis of Potential Impact BIO-2 and Potential Impact BIO-3. Some of these riparian communities may be affected by the proposed project, however, there is extensive breeding and foraging habitat within the Fremont cottonwood forest to support the southwestern willow flycatcher and yellow-billed cuckoo and the proposed project would provide higher quality contiguous habitat for these species with the conveyance of more water in the South Fork of the Kern River.

With the implementation of the proposed project, the potential impacts to the breeding and foraging habitat for the southwestern willow flycatcher and the yellow-billed cuckoo would be less than significant.

Least Bell's Vireo

Suitable breeding and foraging habitat for the least Bell's vireo is present throughout much of the riparian habitat within the potential impact area, including the Fremont cottonwood forest, mulefat thickets, red willow thickets, sandbar willow thickets, cattail marsh, and tamarisk thickets. As stated above, the proposed project would be expected to benefit Fremont cottonwood forest; however, the decline of the mulefat thickets, red willow thickets, sandbar willow, and cattail marsh within the study area may take place over time. Least Bell's vireo prefer to nest in willows, but also use a variety of other tree and shrub species for nest placement (USFWS, 1994). Although the Fremont cottonwood forest has cottonwood trees as the dominant species, this community also contains numerous willows of various species. Thus, there is extensive breeding and foraging habitat within the Fremont cottonwood forest to support the least Bell's vireo and this species would benefit from the proposed project through the provision of higher quality contiguous habitat. The implementation of the proposed project would result in a less than significant impact to habitat for the least Bell's vireo.

Tri-Colored Blackbird

Historically, most colonies of the tri-colored blackbird were in freshwater marshes dominated by cattails or tules, but some were in nettles, thistles, and willows. However, the use of freshwater marshes as breeding colony sites decreased from 93 percent in the 1930s to 54 percent in the 1970s. An increasing percentage of colonies since the 1970s have been reported in Himalayan blackberry and thistles and some of the largest recent colonies were in silage and grain fields near dairies in the San Joaquin Valley. Other less commonly used nesting substrates include tamarisk, elderberry/poison oak, and riparian scrublands and forests and wintering tri-colored blackbirds often congregate in large, mixed-species blackbird flocks that forage in grasslands and agricultural fields with low-growing vegetation and at dairies and feedlots (Shuford and Gardali, 2008).

Suitable breeding and foraging habitat for the tri-colored blackbird is present throughout select portions of the riparian habitat present within the potential impact area, including the cattail marsh, mulefat thickets, red willow thickets, sandbar willow thickets, tamarisk thickets, and Fremont cottonwood forest. This species may also utilize the agricultural fields for nesting and

foraging as well, such as some croplands and irrigated hayfields growing alfalfa. The Kern-Kaweah Chapter of the Sierra Club, Sequoia ForestKeeper, Western Watersheds Project, and the Center for Biological Diversity have noted that "Gibboney Ponds" (i.e., Givney Pasture) on the Onyx Ranch has supported a tri-colored blackbird colony (Kern-Kaweah Chapter of the Sierra Club et al., 2018). Thus, with the modification of the surface water diversions that would reduce or eliminate flow in some agricultural ditches and the resulting reduction of applied irrigation water to fields and runoff that may support adjacent marsh habitats, such as in Givney Pasture, the potential decline of these communities may take place over time. Therefore, the reduction of applied irrigation water to fields and the reduction of runoff that may support adjacent marsh habitats could result in a potential significant impact to the tri-colored blackbird breeding and foraging habitat.

Additionally, the agricultural activities with implementation of the proposed project would continue to grow crops adapted to drier conditions, but it is difficult to determine if the tri-colored blackbird would utilize the new agricultural fields in the same way since their preferred foraging habitats include crops such as rice, alfalfa, irrigated pastures, and ripening or cut grain fields (e.g., oats, wheat, silage) (Shuford and Gardali, 2008). Although the extensive Fremont cottonwood forest within the South Fork of the Kern River contains habitat (which also includes some cattails) that tri-colored blackbird has been documented to use on occasion, it is not the extensive marsh habitat that is the preferred breeding and foraging habitat for the tri-colored blackbird. Therefore, the drier conditions on the project site could result in a potential impact to the tri-colored blackbird breeding and foraging habitat.

With the implementation of the proposed project, the changes in the diversions of surface water from the South Fork of the Kern River would: reduce or eliminate the flow in some agricultural ditches and the resulting on-site marsh habitats adjacent to the fields; and/or result in drier conditions with the transition of irrigated fields and pastures to non-irrigated pastures and native vegetation on the project site. These changes to the project site could result in potential significant impacts to the suitable breeding and foraging habitat for the tri-colored blackbird. Incorporation of Mitigation Measures BIO-1 and BIO-2 would reduce this potential significant impact to a less than significant level.

Other Special-Status Species

Crotch Bumble Bee, California Legless Lizard, Loggerhead Shrike, Pallid Bat, and Townsend's Big Eared Bat

There is upland habitat within the study area that is suitable for Crotch bumble bee, California legless lizard, loggerhead shrike, pallid bat, and Townsend's big eared bat. With implementation of the proposed project, no changes to the upland habitat would occur and no impact to these special-status species would be anticipated.

Loggerhead Shrike, Kern Plateau Salamander, Cooper's Hawk, Summer Tanager, and Golden Eagle

Loggerhead shrike, Kern Plateau salamander, Cooper's hawk, and summer tanager would benefit from the additional surface flow in the South Fork of the Kern River that would likely improve the overall condition of the Fremont cottonwood forest within the potential impact area. Thus,

conveyance of more water into the South Fork of the Kern River would be a benefit to these species and their habitat. Additionally, no changes would occur to nesting habitat for golden eagle and extensive foraging habitat for that species would remain. Therefore, potential impacts to these special-status species would be less than significant.

Kern Red-Winged Blackbird

Kern red-winged blackbird was observed to be present in the study area, therefore, habitat supporting this species is assumed to be occupied. There are similar habitat preferences for nesting and foraging between the tri-colored blackbird analyzed above and Kern red-winged blackbird. Therefore, the changes to the project site with implementation of the proposed project could result in potential significant impacts to the suitable breeding and foraging habitat for the Kern red-winged blackbird. Incorporation of Mitigation Measures BIO-1 and BIO-2 would reduce this potential significant impact to this special-status species to a less than significant level.

Yellow-Breasted Chat and Yellow Warbler

There are similar habitat preferences for nesting and foraging between the least Bell's vireo analyzed above and the yellow-breasted chat and yellow warbler. Therefore, the changes to the project site with implementation of the proposed project could result in less than significant impacts to the suitable breeding and foraging habitat for the yellow-breasted chat and yellow warbler.

Special-Status Plants

Based on the presence of suitable habitat, 10 special-status plant species have a moderate or high potential to occur within the potential impact area, including California androsace, alkali mariposa lily, Kern River evening-primrose, Kern County evening-primrose, white pygmy-poppy, Kern Canyon clarkia, rose-flowered larkspur, limestone dudleya, Tracy's eriastrum, and Onyx Peak bedstraw.

Since the California androsace, Kern River evening-primrose, Kern County evening-primrose, white pygmy poppy, Kern Canyon clarkia, rose-flowered larkspur, limestone dudleya, Tracy's eriastrum, and Onyx Peak bedstraw do not occur within riparian or wetland communities, no impact to these nine special-status plant species would occur with implementation of the proposed project.

The alkali mariposa lily is known to occur within wetland communities and has a moderate potential to occur within the creeping rye grass turfs located in the Givney Pasture on the project site. The reduction in the water flow along the Hillside Ditch and the reduction in irrigation levels in the Landers I and II Tracts and the Unnamed Agricultural Tract may have an adverse effect on populations of this species. Therefore, the implementation of the proposed project has the potential to result in a potential significant impact to the alkali mariposa lily. Incorporation of Mitigation Measures BIO-1 and BIO-3 would reduce this impact to a less than significant level.

Critical Habitat

As shown in Figure 3.6-4, USFWS designated critical habitat for the southwestern willow flycatcher and western yellow-billed cuckoo includes the riverine and floodplain of the South Fork of the Kern River throughout much of the potential impact area (USFWS, 2018). Notably, USFWS recently published a proposed rule to revise the designation of critical habitat for the western yellow-billed cuckoo, including areas along the South Fork of the Kern River (USFWS, 2020); however, the final rule has not been published. When designating critical habitat, the USFWS identifies the primary constituent elements (PCEs) important for a species (i.e., the elements of physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species).

PCEs important for the conservation of southwestern willow flycatcher include riparian habitat along a dynamic river or lakeside, in a natural or manmade successional environment (for nesting, foraging, migration, dispersal, and shelter) that is comprised of trees and shrubs (that can include Goodding's willow, arroyo willow, red willow, tamarisk, cottonwood, poison hemlock, blackberry, seep willow, oak, rose, sycamore, and walnut) and some combination of:

(a) Dense riparian vegetation with thickets of trees and shrubs that can range in height from about 6 to 98 feet. Lower-stature thickets (6 to 13 feet tall) are found at higher elevation riparian forests and tall-stature thickets are found at middle and lower-elevation riparian forests.

(b) Areas of dense riparian foliage at least from the ground level up to approximately 13 feet above ground or dense foliage only at the shrub or tree level as a low, dense canopy.

(c) Sites for nesting that contain a dense (about 50 percent to 100 percent) tree or shrub (or both) canopy.

(d) Dense patches of riparian forests that are interspersed with small openings of open water or marsh or areas with shorter and sparser vegetation that creates a variety of habitat that is not uniformly dense (patch size may be as small as 0.25 acre or as large as 175 acres) (USFWS, 2013).

PCEs important for the conservation of the western yellow-billed cuckoo include riparian woodlands with mixed willow-cottonwood vegetation, mesquite-thorn-forest vegetation, or a combination of these that contain habitat for nesting and foraging in contiguous or nearly contiguous patches that are greater than 325 feet in width and 200 acres or more in extent. These habitat patches contain one or more nesting groves, which are generally willow-dominated, have above average canopy closure (greater than 70 percent), and have a cooler, more humid environment than the surrounding riparian and upland habitats (USFWS, 2014).

The Fremont cottonwood forest within the potential impact area provides suitable nesting and foraging habitat for these species within the USFWS designated critical habitat; however, as previously stated, the potential for impacts to this community as a result of the proposed project would not be expected since the modification of surface water diversions would result in the conveyance of more water in the Kern River, which is expected to benefit the Fremont cottonwood forest and associated riparian habitat within the South Fork of the Kern River, resulting in a benefit to the critical habitat areas for the southwestern willow flycatcher and

yellow-billed cuckoo. Therefore, no impact would occur to the Fremont Cottonwood forest in the critical habitat for the Southwestern willow flycatcher and western yellow-billed cuckoo.

Within the critical habitat areas, the remaining riparian habitat suitable to support these species (i.e., red willow thickets, mulefat thickets, and cattail marsh) may also provide suitable nesting and foraging habitat. There are a few areas of mulefat that occur outside of the critical habitat areas that are relatively isolated from contiguous riparian canopy, and thus would not provide suitable habitat for these species (e.g., isolated patch in Mack Pasture that is surrounded by salt grass flats and rubber rabbitbrush scrub). Mulefat patches that occur within or adjacent to Fremont cottonwood forest would provide suitable habitat and would likely benefit from conveyance of more water into the South Fork of the Kern River due to its location. A small patch of red willow thickets and a large patch of cattail marsh within the Givney Pasture on the northern portion of the Onyx Ranch, and the large patch of red willow thickets within the southern end of the Smith Ranch could be affected by the proposed project due to potential reduced water availability. A detailed discussion of the potential impacts to the southwestern willow flycatcher and yellow-billed cuckoo and their habitats is provided above. With the implementation of the proposed project, potential impacts to red willow thickets, mulefat thickets, and cattail marsh within the critical habitat for the southwestern willow flycatcher and western yellow-billed cuckoo would have the potential to occur. The incorporation of Mitigation Measure BIO-1 would reduce the impacts to designated critical habitat for these species to a less than significant level.

Mitigation Measures

BIO-1: <u>Assessment and Monitoring Program:</u> A qualified biologist shall prepare and implement a pre-project and post-project Assessment and Monitoring Program. The pre-project phase of the program shall confirm and update the existing baseline conditions and extents of the creeping rye grass turfs, red willow thickets, cattail marsh, mulefat thickets, and sandbar willow thickets within the potential impact area. The post-project phase of the program shall be developed to systematically monitor the condition of each of the aforementioned sensitive natural communities and riparian habitats located within the potential impact area to determine whether each sensitive natural community and/or riparian habitat is experiencing a level of disturbance as a result of the project implementation and operational activities.

For the Assessment and Monitoring Program, the physical condition of each sensitive natural community and riparian habitat shall be documented during both the pre-project and post-project monitoring activities. Documentation shall include, but is not limited to: GPS mapping to monitor community extents, qualitative and quantitative vegetation analysis (including native and non-native cover), and annual reporting. Vegetation analysis methods, including determination of the level of site disturbance, shall be conducted in accordance with accepted industry standards, such as the CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment (Rapid Assessment) and Relevé methods (CDFW, 2019b). Post-project monitoring activities shall continue for a period of 5 years, to be initiated one year following implementation of the project. Pre-project surveys and post-project monitoring documentation shall be submitted to and retained at the RRBWSD administrative office.

The CDFW-CNPS Rapid Assessment/Relevé method of vegetation sampling includes the following standards for classifying disturbances from the reduction or elimination of surface water diversion (Disturbance Code 14) and other disturbances within the potential impact area:

- Light: less than 33% of the stand is impacted.
- Moderate: between 33% and 66% of the stand is impacted.
- Heavy: more than 66% of the stand is impacted.

If the assessment and monitoring program determines a Light, Moderate, or Heavy Disturbance (as defined in the CDFW-CNPS Rapid Assessment/Relevé methods) in the potentially impacted sensitive natural communities and/or riparian habitats identified, the area of impact shall be quantified through comparison with the established pre-project baseline conditions. For purposes of comparing post-project implementation conditions after the 5-year monitoring period with the pre-project baseline conditions, the impacts characterized as Light, Moderate, or Heavy Disturbance shall include:

- Light: less than 33% of sample plots averaged over the 5-year monitoring period show a 20% or greater reduction in absolute native cover of the sensitive natural community and/or riparian habitat
- Moderate: between 33% and 66% of sample plots averaged over the 5-year monitoring period show a 20% or greater reduction in absolute native cover of the sensitive natural community and/or riparian habitat
- Heavy: more than 66% of sample plots averaged over the 5-year monitoring period show a 20% or greater reduction in absolute native cover of the sensitive natural community and/or riparian habitat

If the monitoring biologist determines that extraneous factors (i.e., drought, non-project-related anthropogenic influences, other uncontrollable factors) could have adversely influenced absolute native cover of the sensitive natural community and/or riparian habitat during the 5-year monitoring period, the monitoring period may be extended at the monitoring biologist's discretion to account for these factors.

At the conclusion of the monitoring period, impacts evaluated in terms of Light, Moderate, or Heavy Disturbance shall be mitigated as described below.

Mitigation Options at Conclusion of 5-Year Monitoring Period: For impacts to creeping rye grass turfs, red willow thickets, cattail marsh, mulefat thickets, or sandbar willow thickets, the RRBWSD shall provide one or a combination of the following mitigation options unless the habitat is occupied by tri-colored blackbird (which would be mitigated in accordance with BIO-2):

1. No mitigation required for Light Disturbance.
2. On- and/or off-site preservation, creation, restoration, and/or enhancement of sensitive natural communities or riparian habitat at a ratio no less than 1:1 for Moderate Disturbance impacts, and no less than 2:1 for Heavy Disturbance impacts. A habitat mitigation plan (HMP) shall be developed to include information on site selection, grading and site preparation, seeding and planting

plans, irrigation, maintenance and monitoring activities, success criteria, adaptive management/contingency measures, and provisions for site preservation and long-term management. The HMP shall focus on the preservation, creation, restoration, and/or enhancement of equivalent habitats within suitable habitat areas of the project site and/or off-site.

3. The purchase of mitigation credits from an approved mitigation bank at a ratio of no less than 1:1 for Moderate Disturbance and no less than 2:1 for Heavy Disturbance.

BIO-2: Prior to implementation of the proposed project, a qualified biologist shall conduct surveys for the tri-colored blackbird throughout the cattail marsh, mulefat thickets, sandbar willow thickets, and tamarisk thickets within the potential impact area, and submit a report to the RRBWSD of survey findings. The report shall be submitted to and retained at the RRBWSD administrative office. If tri-colored blackbirds are not detected within the suitable breeding habitat, no further action is necessary.

If tri-colored blackbirds are observed nesting within the potential impact area, for a period of 5 years, an annual focused survey shall be conducted for the tri-colored blackbird within the areas of occupied habitat to monitor for the continued use of the occupied habitat for nesting. The quality and quantity of the occupied habitat also shall be monitored in accordance with the Assessment and Monitoring Program identified in Mitigation Measure BIO-1. The annual survey and monitoring data shall be submitted for a period of 5 years and retained at the RRBWSD administrative office.

If the annual focused surveys reveal the nesting colony is no longer utilizing occupied habitat and there is a decline in the occupied habitat quality based on disturbance levels defined in Mitigation Measure BIO-1 or decline in quantity from the pre-project baseline conditions, the tri-colored blackbird nesting habitat shall be replaced at a ratio of 2:1. The replacement habitat shall be suitable to support tri-colored blackbird breeding habitat with similar nesting and foraging habitat functions as is provided by the existing habitat.

BIO-3: Prior to implementation of the proposed project, a qualified biologist/botanist shall conduct a focused special-status plant survey throughout the creeping rye grass turfs for alkali mariposa lily during the appropriate blooming period (April - June) to determine the presence/absence of the species. If the species is detected, the population shall be mapped and demarcated. If through the implementation of Mitigation Measure BIO-1 (post-project Assessment and Monitoring Program) it is determined that the creeping rye grass turfs are declining or being reduced as a result of the project implementation and may result in reduction in the alkali mariposa lily, one or a combination of the following methods shall be implemented:

1. Onsite and/or off-site translocation of surviving alkali mariposa lily bulbs to suitable habitat preserved through a conservation easement. Translocation shall occur at the end of the dormant season (summer) and prior to the forecast of initial fall rains.
2. Seed collection and propagation for at least two-years old bulbs to be planted prior to the forecast of initial fall rains into suitable habitat preserved through a conservation easement.
3. Payment into a mitigation bank or through an established in-lieu fee program specific to the conservation of alkali mariposa lily.

The selected method shall be incorporated into the pre-project and post-project Assessment and Monitoring Program required by Mitigation Measure BIO-1. Survey and monitoring data shall be submitted to and retained by the RRBWSD administrative office.

Significance Determination

Less than Significant Impact with Mitigation

Impact Summary

- The proposed project would result in no impact to the Fremont cottonwood forest within the potential impact area as a result of the proposed project since additional flow in the South Fork of the Kern River would likely benefit this community and improve the overall condition of the Fremont cottonwood forest on the project site and in the downstream areas.
- The southwestern willow flycatcher, western yellow-billed cuckoo, least Bell's vireo, yellow-breasted chat, and yellow warbler would benefit from the proposed project through the provision of higher quality contiguous breeding and foraging habitat within the Fremont cottonwood forest. The implementation of the proposed project would result in a less than significant impact to habitat for the southwestern willow flycatcher, western yellow-billed cuckoo, least Bell's vireo, yellow-breasted chat, and yellow warbler.
- With the implementation of the proposed project, the changes in the diversions of surface water from the South Fork of the Kern River would: reduce or eliminate the flow in some agricultural ditches and the resulting on-site marsh habitats adjacent to the fields; and/or result in drier conditions with the transition of irrigated fields and pastures to non-irrigated pastures and native vegetation on the project site. These changes to the project site could result in potential significant impacts to the suitable breeding and foraging habitat for the tri-colored blackbird and Kern red-winged blackbird. Incorporation of Mitigation Measures BIO-1 and BIO-2 would reduce this potential significant impact to a less than significant level.
- With implementation of the proposed project, no changes to the upland habitat that is suitable for Crotch bumble bee, California legless lizard, loggerhead shrike, pallid bat, and Townsend's big eared bat would occur and no impact to these special-status species would be anticipated.
- Conveyance of more water into the South Fork of the Kern River as part of the proposed project would be a benefit to Loggerhead shrike, Kern Plateau salamander, Cooper's hawk, and summer tanager and their habitat. The proposed project would result in no changes to nesting habitat for golden eagle and extensive foraging habitat for that species would remain. Therefore, potential impacts to these special-status species would be less than significant.
- The California androsace, Kern River evening-primrose, Kern County evening-primrose, white pygmy poppy, Kern Canyon clarkia, rose-flowered larkspur, limestone dudleya, Tracy's eriastrum, and Onyx Peak bedstraw do not occur within riparian or wetland communities. As a result, no impact to these nine special-status plant species would occur with implementation of the proposed project.
- With implementation of the proposed project, the reduction in the water flowing along the Hillside Ditch and the reduction in irrigation levels in the Landers I and II Tracts and the Unnamed Agricultural Tracts located in the Givney Pasture may have an adverse effect on populations of alkali mariposa lily. Therefore, the implementation of the proposed project has

the potential to result in a potential significant impact to the alkali mariposa lily. Incorporation of Mitigation Measures BIO-1 and BIO-3 would reduce this impact to a less than significant level.

- The Fremont cottonwood forest within the potential impact area provides is included in the USFWS designated critical habitat for the Southwestern willow flycatcher and western yellow-billed cuckoo. However, the potential for impacts to this community as a result of the proposed project would not be expected since the modification of surface water diversions would result in the conveyance of more water in the South Fork of the Kern River, which is expected to benefit the Fremont cottonwood forest and associated riparian habitat, resulting in a benefit to the critical habitat areas for the southwestern willow flycatcher and yellow-billed cuckoo. Therefore, no impact would occur to the Fremont Cottonwood forest in the critical habitat for the Southwestern willow flycatcher and western yellow-billed cuckoo.
- With the implementation of the proposed project, potential impacts to red willow thickets, mulefat thickets, and cattail marsh within the critical habitat for the southwestern willow flycatcher and western yellow-billed cuckoo would have the potential to occur. The incorporation of Mitigation Measure BIO-1 would reduce the impacts to designated critical habitat for these species to a less than significant level.

Sensitive Natural Communities or Riparian Habitats

Potential Impact BIO-2: Would the proposed project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Four CDFW-designated sensitive natural communities occur within the study area: Joshua tree woodland, Fremont cottonwood forest, creeping rye grass turfs, and red willow thickets. Joshua tree woodland is an upland community that is not dependent on surface water flows and is not situated in any of the agricultural tracts within the study area. Therefore, this sensitive natural community is not within the potential impact area. With implementation of the proposed project, no impacts are anticipated to this upland community.

Within the potential impact area, 70.4 acres of Fremont cottonwood forest, 399.4 acres of creeping rye grass turfs, and 11.4 acres of red willow thickets were assessed to determine the potential for these CDFW-designated sensitive natural communities to be affected by the reduction of surface water availability as a result of the proposed project.

In addition to the sensitive natural communities identified above, three riparian habitats occur within the potential impact area: cattail marsh, mulefat thickets, and sandbar willow thickets. A total of approximately 19.0 acres of cattail marsh, 8.0 acres of mulefat thickets, and 5.0 acres of sandbar willow thickets were assessed to determine their potential to be affected by the reduction of water availability as a result of the proposed project.

With implementation of the proposed project, groundwater levels during low groundwater conditions are predicted to increase in some portions of the South Fork Valley and to decrease in

others. This would include: an increase in groundwater levels of up to approximately 4.1 feet off-site about 1 mile from the Isabella Reservoir; and a decrease of approximately -5.9 feet at the Onyx Ranch Headquarters located at the Landers I Tract on the project site. Only two wells (both located within the project site along the northern side of the South Fork Valley) would experience an estimated groundwater level decrease of up to 5 or more feet. All other wells, including those for the local community water systems, would experience temporary seasonal groundwater level decreases of less than 5 feet and may experience an increase in groundwater levels in areas father away from the project site and closer to Isabella Reservoir. Given the seasonal variation of groundwater levels throughout the Kern River Valley Groundwater Basin that are on the order of tens of feet, the groundwater level decreases as a result of implementation of the proposed project would be expected to result in less than significant impacts to the sensitive natural communities and riparian habitats within the study area.

The potential development of, on an as needed basis, up to 12 shallow, low-volume wells powered by solar facilities and accompanying water tanks would be sited in disturbed areas on the project site that are outside of sensitive natural communities and riparian habitats. Therefore, the installation and operation of the wells would result in no impacts to sensitive natural communities or riparian habitats.

The following provides an assessment of the potential impacts to sensitive natural communities and riparian habitats as a result of changes to diversion of surface water to the project site with implementation of the proposed project.

Fremont Cottonwood Forest

The quantity of water currently available to the approximately 70.4 acres of Fremont cottonwood forest within the potential impact area would change as a result of the proposed reduction in flow within the Hillside, Landers, Mack, Nicoll and Pruitt agricultural ditches and a reduction or elimination of irrigation within the Landers I, Nicoll, Smith, and Unnamed agricultural Tracts.

As cited in the *Hydrogeological Evaluation of the Onyx Ranch Project* prepared by Thomas Harder & Co, which is provided in Appendix E Hydrogeological Technical Report to this Draft EIR , the proposed project may result in a decrease of groundwater levels of up to approximately 15.6 feet beneath the project site; however, this would occur during wet/rainy periods when groundwater levels typically are at their highest. Surface vegetation and natural communities are most affected and constrained by periods of low groundwater levels, which typically occur in late autumn or early winter, just before the beginning of the rainy season.

Fremont cottonwood trees are known to have taproots up to approximately seven feet deep (Stromberg, 2013). This suggests that while groundwater levels may fall below the accepted root growth limit for cottonwood trees on a periodic basis, and sensitive individuals (e.g., young saplings, declining trees) may decline as a result, it is not expected that the community as a whole would be significantly affected. In addition, any decrease in surface flow within the agricultural ditches and the decrease in irrigation in the agricultural tracts as a result of the proposed project would result in the conveyance of more water into the South Fork of the Kern River, which supports the majority of Fremont cottonwood forest in the potential impact area as shown in

Figure 3.6-2. As such, the additional flow in the South Fork of the Kern River would likely benefit this community and improve the overall condition of the Fremont cottonwood forest within the potential impact area and the South Fork Valley. Therefore, with implementation of the proposed project, the potential impacts to Fremont cottonwood forest would be less than significant.

Other Sensitive Natural Communities and Riparian Habitats

The quantity of water currently available to the other sensitive natural communities (i.e., creeping rye grass turfs and red willow thickets) and riparian habitats (i.e., cattail marsh, mulefat thickets, and sandbar willow thickets) could change as a result of the reduction in flow within the Hillside, Mack, Nicoll, Pruitt, Landers, and Smith agricultural ditches, and the reduction or elimination of irrigation within the Landers I and II, Smith, and Unnamed agricultural Tracts.

The agricultural tracts and fields receive water intermittently via the ditches as described above in Table 3.6-4 and otherwise depend on seasonal precipitation and available groundwater to some extent. Therefore, the reduction in surface water as a result of the proposed project would have a limited effect on these other sensitive natural communities and riparian habitats. Furthermore, as noted above, any water diverted away from these sensitive natural communities and riparian habitats would be conveyed toward the South Fork of the Kern River, benefiting portions of each community located along the South Fork of the Kern River. However, depending on its proximity to the affected irrigation source, topography, and/or the health of individuals within each community, the reduction in water availability may cause the sensitive natural communities and riparian habitats within the potential impact area to decline, resulting in a potentially significant impact. A detailed analysis of these other sensitive natural communities and riparian habitats and the potential impacts is provided below.

Creeping Rye Grass Turfs

The pastures and fields located within the most northwest and southwest portions of the Onyx Ranch support a total of 399.4 acres of creeping rye grass turfs that may be affected by the proposed project, including Givney Pasture in the Landers I tract, Mack Pasture in the Landers II tract, and fields in the Nicoll tract. The Givney Pasture likely receives its hydrology from a combination of runoff from the agricultural tracts (Landers I) fed by the Landers Ditch (the proposed project would reduce the flow rate by 75 percent), runoff from Cottonwood Ditch (which would not change under the proposed project), natural drainage from the Sierra Mountains to the north, and groundwater. The proposed project would have potential to result in significant impacts to 277.5 acres of creeping rye grass turfs within the Givney Pasture. Mack Ditch would continue to be used to transport well water to the Boone Field. However, from March to June, intermittent flows currently diverted from the South Fork Kern River to Mack Ditch would discontinue to Mack Fields and Mack Pasture. Therefore, the implementation of the proposed project would have a potential significant impact to 75.9 acres of creeping rye grass turfs within the Mack Pasture. The proposed project would have potential to result in significant impacts to 45.0 acres of creeping rye grass turfs within Nicoll tract due to the reduced flow rate of approximately 50% along Nicoll Ditch. Incorporation of Mitigation Measure BIO-1 would reduce

this potential significant impact to these sensitive natural communities to a less than significant level.

Red Willow Thickets

A total of 11.4 acres of red willow thickets may be affected by the proposed project. Red willow thickets are present within the Givney Pasture located on the Onyx Ranch and within the southern end of the Smith Ranch on the project site. The reduction of surface flow in the Landers Ditch flow rate by 75 percent (as summarized above) could affect 0.4 acre of red willow thickets within the Givney Pasture, and the Smith Ditch would have a 33 percent reduction in flow rate which could affect 4.3 acres of red willow thickets within the southern end of the Smith Ranch. Smith Tract would continue to be irrigated by non-RRBWSD co-owners of the Smith Ranch property; therefore, no impacts are anticipated to the 6.7 acres of red willow thickets within Smith Tract. Therefore, implementation of the proposed project would have a potential significant impact to 4.7 acres of red willow thickets. Incorporation of Mitigation Measure BIO-1 would reduce this potential significant impact to this natural community to a less than significant level.

Cattail Marsh

A total of 19.0 acres of cattail marsh may be affected by the proposed project. Small patches of cattail marshes occur intermittently along several ditches, including the Landers Ditch and the Scodie Ditch and within the Givney Pasture, all located on the Onyx Ranch. No change is proposed to the flow rate for Scodie Ditch; however, the Landers Ditch flow rate would be reduced by 75 percent. The reduction in flow rate in the Landers Ditch may also affect the Givney Pasture. Therefore, implementation of the proposed project would have a potential significant impact to approximately 19.0 acres of cattail marsh. Incorporation of Mitigation Measure BIO-1 would reduce this potential significant impact to this riparian habitat to a less than significant level.

Mulefat Thickets

A total of 8.0 acres of mulefat thickets may be affected by the proposed project. Mulefat thickets are interspersed within the Fremont cottonwood forest along the South Fork of the Kern River channel and are also present intermittently along the Cottonwood Ditch, the Landers Ditch, the Nicoll Ditch, and the Pruitt Ditch. No change is proposed to the flow rate for the Cottonwood Ditch. However, the flow rates could be reduced by 75 percent for the Landers Ditch and 50 percent for Nicoll Ditch. Additionally, the flow rate would cease in the Pruitt Ditch, potentially impacting mulefat thickets within Nicoll Ditch and Pruitt Ditch and within Landers I, Landers II, Scodie, and Unnamed agricultural tracts. Therefore, the implementation of the proposed project would have a potential significant impact to 8.0 acres of mulefat thickets. Incorporation of Mitigation Measure BIO-1 would reduce this potential significant impact to this riparian habitat to a less than significant level.

Sandbar Willow Thickets

A total of 5.0 acres of sandbar willow thickets may be affected by the proposed project. Sandbar willow thickets can be found in patches along portions of the Mack Ditch and the Nicoll Ditch within the Onyx Ranch. With the proposed project, the Mack Ditch would continue to be used to

transport well water to the Boone Field. However, from March to June, intermittent flows currently diverted from the South Fork Kern River to Mack Ditch would discontinue to Mack Fields and Mack Pasture, and the flow rate would be reduced by 50 percent at Nicoll Ditch. Therefore, the implementation of the proposed project would have a potential significant impact to 4.4 acres and 0.6 acre of sandbar willow thickets along Mack Ditch and Nicoll Ditch, respectively. Incorporation of Mitigation Measure BIO-1 would reduce this potential significant impact to this riparian habitat to a less than significant level.

Mitigation Measures

Implementation of Mitigation Measure BIO-1would apply.

Significance Determination

Less than Significant Impact with Mitigation

Impact Summary

- Joshua tree woodland is an upland community that is not dependent on surface water flows and is not situated in any of the agricultural tracts within the study area. Therefore, this sensitive natural community is not within the potential impact area. With implementation of the proposed project, no impacts are anticipated to this upland community.
- With implementation of the proposed project, the additional flow in the South Fork of the Kern River that would occur would likely benefit the Fremont cottonwood forest sensitive natural community and improve the overall condition of the community within the potential impact area and the South Fork Valley. Therefore, with implementation of the proposed project, the potential impacts to Fremont cottonwood forest would be less than significant.
- Implementation of the proposed project would result in modifications to the timing and amount of surface water diverted from the South Fork of the Kern River and flow through the ditches on the project site. This would reduce or eliminate the irrigation of the fields within the potential impact area with the exception of Boone Field. Therefore, the proposed project would have potential significant impacts to the following sensitive natural communities and riparian habitats associated with the ditches and fields within the potential impact area: 399.4 acres of creeping rye grass turfs; 4.7 acres of red willow thicket; 19.0 acres of cattail marsh; 8.0 acres of mulefat thicket; and 5.0 acres of sandbar willow thickets. Incorporation of Mitigation Measure BIO-1 would reduce the potential significant impacts to these sensitive natural communities and riparian habitats to a less than significant level.

Aquatic Resources - Wetlands

Potential Impact BIO-3: Would the proposed project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

A formal aquatic resources delineation survey or jurisdictional delineation was not conducted as part of the analysis provided in the BTR and, therefore, the information from a formal delineation is not included in this section. However, based on vegetation mapping, the potential impact area

may support approximately 667.6 acres of riparian habitat, which may include federal and/or State-protected wetlands. Within the riparian habitat, there is approximately 154.4 acres of salt grass flats which can occur in wetland habitats.

As discussed above in the analysis of Potential Impact BIO-2, implementation of the proposed project would result in the conveyance of more water in the South Fork of the Kern River relative to existing conditions; thus, there would be a benefit to the South Fork of the Kern River by reducing surface water diversions and allowing more natural river flows to remain within the main river channel to support the extensive Fremont cottonwood forest and associated riparian habitats of the South Fork of the Kern River. However, the reduction or elimination of surface water diversions within the agricultural ditches and the reduction of applied irrigation water to fields on the project site would potentially reduce some riparian habitat within the portions of the potential impact area that would be adjacent to the South Fork of the Kern River that is supported by these man-made diversions. Therefore, implementation of the proposed project has the potential to affect the 667.6 acres of riparian habitats that occur within the potential impact area that may include federal or State-protected wetlands. These aquatic habitats consist of: 70.4 acres of Fremont cottonwood forest, 399.4 acres of creeping rye grass turfs, 154.4 acres of salt grass flats, 11.4 acres of red willow thickets, 19.0 acres of cattail marsh, 8.0 acres of mulefat thickets, and 5.0 acres of sandbar willow thickets.

As concluded above in the analysis of Potential Impact BIO-2, the potential impacts to Fremont cottonwood forest would be less than significant.

Additionally, as concluded in the analysis of Potential Impact BIO-2, the implementation of the proposed project would have potential significant impacts to creeping rye grass turfs, red willow thickets, cattail marsh, mulefat thickets, and sandbar willow thickets. Incorporation of Mitigation Measure BIO-1 would reduce the potential significant impacts to these riparian habitats to a less than significant level.

The implementation of the proposed project has the potential to affect 154.4 acres of salt grass flats located with the potential impact area. Salt grass flats can be found along portions of the Hillside Ditch, as well as Landers I, Landers II, and Nicoll Tracts. With the proposed project, flow rates would be reduced by approximately 50 percent for the Hillside Ditch, approximately 75 percent in the Landers Ditch, and approximately 50 percent in the Nicoll Ditch. Therefore, implementation of the proposed project would have a potential significant impact to 2.8 acres of salt grass flats along the Hillside Ditch, 5.7 acres in the Landers I Tract, 143.6 acres in Landers II Tract, and 2.3 acres in Nicoll Tract. Incorporation of Mitigation Measure BIO-4 would reduce this potential significant impact to this riparian habitat to a less than significant level.

As indicated above, federal and State-protected wetlands have the potential to occur within the riparian habitats totaling 667.6 acres identified in the potential impact area. Therefore, implementation of the proposed project has the potential to result in a significant impact to federal or State-protected wetlands that may occur within these habitats. Incorporation of Mitigation Measures BIO-1 and BIO-4 would reduce the potential significant impact to wetlands to a less than significant level.

The potential development of, on an as needed basis, up to 12 shallow, low-volume wells powered by solar facilities and accompanying water tanks would be sited in disturbed areas on the project site that are outside of sensitive natural communities, riparian habitats, and any potential wetlands. Therefore, the installation and operation of the wells would result in no impacts to riparian habitats or wetlands.

Based on the nature of the proposed project activities (i.e., discontinuing water diversion to the agricultural ditches), permits are not required from the USACE pursuant to Section 404 of the Clean Water Act, since these agricultural ditches are not considered "waters of the U.S." and there would be no proposed discharge of dredged material or fill into "waters of the U.S." within the South Fork of the Kern River.

Similarly, permits are not required from the RWQCB pursuant to Section 401 of the Clean Water Act or the Porter-Cologne Water Quality Control Act, since there would be no proposed discharge of dredged material or fill into "waters of the State," nor is there proposed discharge of pollutants or contaminants to "waters of the State."

Additionally, activities as a result of the proposed project would not result in regulated activities subject to CFWC Section 1600 et seq. as these artificial agricultural irrigation ditches are not a river, stream, or lake and there would be no proposed diversion of the natural flow of any river, stream, or lake; instead, the proposed project would maintain natural flows within the South Fork of the Kern River.

Mitigation Measures

Mitigation Measure BIO-1 and/or Mitigation Measure BIO-2 would apply to red willow thickets, cattail marsh, mulefat thickets, sandbar willow thickets, and creeping rye grass turfs.

> **BIO-4:** The Assessment and Monitoring Program and mitigation requirements outlined in Mitigation Measure BIO-1 shall apply to salt grass flats within the potential impact area.

Significance Determination

Less than Significant Impact with Mitigation

Impact Summary

- Implementation of the proposed project would provide a benefit to the South Fork of the Kern River by allowing more water to remain within the main river channel to support the existing Fremont cottonwood forest and associated riparian habitats of the river. Therefore, the proposed project would have a less than significant impact to the 70.4 acres of Fremont cottonwood forest within the potential impact area.
- Implementation of the proposed project would result in modification to the timing and amount of surface water diverted from the South Fork of the Kern River and flowing through ditches on the project site and would reduce or eliminate irrigation of the fields within the potential impact area with the exception of Boone Field. The proposed project would potentially reduce some riparian habitat within the portions of the potential impact area that would be adjacent to the South Fork of the Kern River that is supported by the man-made

diversions. Implementation of the proposed project would have potential significant impacts to 399.4 acres of creeping rye grass turfs, 154.4 acres of salt grass flats, 4.7 acres of red willow thickets, 19.0 acres of cattail marsh, 8.0 acres of mulefat thickets, and 5.0 acres of sandbar willow thickets. Incorporation of Mitigation Measure BIO-1 and Mitigation Measure BIO-4 would reduce the potential significant impacts to these riparian habitats that may contain federal or State-protected wetlands to a less than significant level.

- Implementation of the proposed project would result in the installation and operation, on an as needed basis, of up to 12 wells operated by solar facilities and associates tanks that would be sited in disturbed areas on the project site. No impacts to riparian habitats or wetlands would occur.

Wildlife Corridors

Potential Impact BIO-4: Would the proposed project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

The South Fork of the Kern River is an area of importance for wildlife movement and provides a linkage between Lake Isabella (Isabella Reservoir) and the southern Sierra Nevada (Penrod et al., 2001). The greater Kern River Valley serves as a resting stop for migrating birds along the Pacific Flyway and is known to be utilized by various other species of fish and wildlife for both local and regional migration (USFWS, 2019b). Additionally, a small southern portion of the study area (outside of the potential impact area) is identified as part of a wildlife connectivity area by the California Essential Habitat Connectivity Project (Spencer et al., 2010); however, since it is outside of the potential impact area, the proposed project would have no direct impact to this designated wildlife connectivity area.

The South Fork of the Kern River provides an extensive water source and riparian woodland and scrub habitats amid the more xeric upland woodland and scrub habitats of the southern Sierra Nevada foothills and the Kern River Valley. Thus, the South Fork of the Kern River is not only an important resource for wildlife to find water and food, but also contains riparian vegetation that provides habitat for nesting and breeding, cover from predators, and connectivity to other adjacent habitat areas that are important for local and regional wildlife movement, including nearby conservation areas (i.e., U.S. Forest Service South Fork Wildlife Area to the west, Audubon California's Kern River Preserve to the west, and Canebrake Ecological Reserve to the west, south, and east). As previously mentioned, it also supports breeding and foraging habitat for special-status species, such as the federal and state-listed southwestern willow flycatcher and western yellow-billed cuckoo.

Implementation of the proposed project would result in the conveyance of more water in the Kern River downstream of the points of diversion to the Smith Ranch and the Onyx Ranch relative to existing conditions; thus, there would be a benefit to the South Fork of the Kern River by reducing surface water diversions and allowing more water to remain within the main river

channel to support the extensive Fremont cottonwood forest and associated riparian habitats of the South Fork of the Kern River. The reduction or elimination of surface water diversions within the agricultural ditches and the reduction of applied irrigation water to fields would potentially reduce some riparian habitats adjacent to the Kern River that is supported by these man-made diversions; however, the potential impacts related to the loss of or decline of these riparian habitats would be reduced to a less than significant level with incorporation of Mitigation Measure BIO-1 .With the incorporation of this mitigation measure, the extensive habitat provided throughout the South Fork of the Kern would provide ample habitat and resources for continued wildlife movement locally and regionally. Therefore, potential impacts to wildlife movement would be less than significant.

Since the study area provides a variety of habitats to support numerous bird species and the Kern River Valley serves as a resting stop for migrating birds along the Pacific Flyway, the installation, of up to 12 shallow, low-volume wells operated by soar facilities and the associated 2,000 to 4,000 gallon water tank would have the potential to result in an effect to nesting migratory birds if ground-disturbance for installation occurs during the nesting season. The installation of the wells would be scheduled outside of the nesting bird season. Additionally, due to the very limited disturbance footprint, installation of the well components would be negligible and would not inhibit regional or local movement through the area. Therefore, the potential impacts to wildlife movement would be less than significant.

Mitigation Measures

Implementation of Mitigation Measure BIO-1.

Significance Determination

Less than Significant Impact with Mitigation

Impact Summary

- A small southern portion of the study area, located outside of the potential impact area, is identified as part of a wildlife connectivity area by the California Essential Habitat Connectivity Project. However, since it is outside of the potential impact area, the proposed project would have no direct impact to this designated wildlife connectivity area.
- Implementation of the proposed project would be a benefit to the South Fork of the Kern River by allowing more water to remain within the main river channel to support the extensive Fremont cottonwood forest and associated riparian habitats of the river. However, the proposed project would result in the reduction or elimination of surface water diversions within the agricultural ditches and the reduction of applied irrigation water to fields would potentially reduce some riparian habitats adjacent to the Kern River that is supported by these man-made diversions. The potential impacts related to the loss of or decline of these riparian habitats would be reduced to a less than significant level with incorporation of Mitigation Measure BIO-1. With this mitigation measure, the extensive riparian habitat provided throughout the South Fork of the Kern would provide ample habitat and resources for continued wildlife movement locally and regionally. Therefore, potential impacts to wildlife movement would be less than significant.
- With the implementation of the proposed project, the installation of the shallow, low-volume wells would be scheduled outside of the nesting bird season. Due to the very limited

disturbance footprint, installation of the well components would be negligible and would not inhibit regional or local movement through the area. Potential impacts to wildlife movement would be less than significant.

Potential Cumulative Impacts

This section presents an analysis of the cumulative effects of the proposed project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively considerable impacts. As discussed above in Section 3.6.3 Impact Analysis and Mitigation Measures, the implementation of the proposed project would have a less than significant impact with incorporation of mitigation measures.

Cumulative projects are listed on Table 3-2 in Section 3.2 Cumulative Impacts; the locations are shown on Figure 3-1. Note that many of the cumulative projects are located outside of the Kern River Valley, downstream of the Isabella Dam. Given that the proposed project would result in the addition of water to the South Fork of the Kern River, there would be no reduction in water supply that is currently made available to habitats downstream of the Isabella Dam. Therefore, there would be no cumulative impacts to biological resources downstream of the Isabella Dam.

The cumulative projects located within the biological cumulative setting upstream of the Isabella Dam include Cumulative Project A, Isabella Lake Dam Safety Modification Project, Cumulative Project B, Tricolored Blackbird Voluntary Local Program (VLP), Cumulative Project C, Upper Taylor Meadow Gully Repair Project, and Cumulative Project D, Weldon Regional Water District. Cumulative Project A, which is currently under construction, would improve the existing dam structure and facilities to ensure dam stability. According to the Final Supplemental Environmental Assessment for the Isabella Lake Dam Safety Modification Project, the project area for the dam construction is composed primarily of agricultural, ornamental, non-native, ruderal vegetation, and residential land uses. There is no suitable habitat in the immediate vicinity of the Cumulative Project A that would support special status species, and there is no critical habitat located within the project area. Therefore, the proposed project would not result in a cumulative impact to biological resources when considered together with Cumulative Project A.

Cumulative Project B, Tricolored Blackbird VLP provides take authorization to the farmers and ranchers who enroll and implement management practices to delay harvest and allow tricolored blackbird colonies to complete their nesting and fledging cycle. The proposed project would not be expected to result in take authorization for the tri-colored blackbird and, with implementation of Mitigation Measures BIO-1 and BIO-2, the impacts to breeding and nesting habitat for tri-colored blackbird would be reduced to less than significant. Therefore, the proposed project would not result in a cumulative impact to tri-colored blackbird or its habitat when considered together with Cumulative Project B. Cumulative Project B would not be anticipated to result in impacts to other designated and sensitive species, natural communities and riparian habitats, wetlands, or regional and local wildlife corridors. Therefore, the proposed project would not result in a cumulative impact to biological resources when considered together with Cumulative Project B.

Cumulative Project C, the Upper Taylor Meadow Gully Repair Project, would improve hydrologic function, improve conditions so overbank flows can access the entire meadow, and enhance meadow vegetative and aquatic species while maintaining existing land uses. Cumulative Project C would not be anticipated to result in significant impacts to sensitive species, natural communities and riparian habitats, wetlands, or regional and local wildlife corridors. Therefore, the proposed project would not result in a cumulative impact to biological resources when considered together with Cumulative Project C.

Cumulative Project D, Weldon Regional Water District, would install new physical facilities including groundwater wells, pipelines, booster pump stations, storage tanks and reservoirs, and a new office in the community of Weldon. The only potentially significant impacts to biological resources associated with Cumulative Project D would be to wetlands due to installation of a proposed groundwater well in an area south of SR 178 between Sierra Way and Fay Ranch Road, and to migratory or nesting birds during construction of new facilities if such activities occur during the nesting season (Tom Dodson & Associates, 2020). Both impacts would be reduced to less than significant levels with implementation of mitigation measures, as required by the MND adopted for Cumulative Project D (Tom Dodson & Associates, 2020). The proposed project's significant impacts to riparian habitats that may contain wetlands would be reduced to a less than significant level with incorporation of Mitigation Measures BIO-1 and BIO-4. The proposed project's potential significant impact to wildlife movement or corridors would be reduced to a less than significant level with incorporation of Mitigation Measure BIO-1. Therefore, the proposed project would not result in a cumulative impact to biological resources when considered together with Cumulative Project D.

In conclusion, the proposed project's incremental impacts to biological resources would not be cumulatively considerable.

Mitigation Measures

Implementation of Mitigation Measures BIO-1, BIO-2, and BIO-4.

Significance Determination

Less than Significant with Mitigation

Impact Summary

- With implementation of the proposed project, the potential impacts to biological resources would be less than significant or reduced to a less than significant impact level with incorporation of Mitigation Measures BIO-1, BIO-2, and BIO-4. The proposed project's contribution to cumulative impacts to biological resources would not be cumulatively considerable and the proposed project, considered together with Cumulative Projects A, B, C, and D, would not result in cumulative significant impacts to biological resources.

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3.7 Cultural Resources

This section addresses the potential impacts related to cultural resources associated with implementation of the proposed project. This section includes: a description of existing cultural resources on the project site and in the adjacent area in the Kern River Valley; a summary of applicable regulations related to cultural resources; and an evaluation of the potential for the proposed project to result in environmental impacts related to cultural resources on the project site. In addition, an evaluation of the potential cumulative impacts is provided.

The NOP and Initial Study prepared for the proposed project indicated that the Draft EIR would analyze the potential for significant impacts related to cultural resources if the proposed project would:

- Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- Disturb any human remains, including those interred outside of formal cemeteries.

The CEQA Guidelines were revised on December 28, 2018, which resulted in moving the thresholds of significance for paleontological resources from the Cultural Resources environmental topic to the Geology and Soils environmental topic. As a result, the analysis of potential impacts related to paleontological resources is provided in Section 3.8 Geology and Soils of this Draft EIR. The analysis of potential impacts to historical resources, archaeological resources, and human remains is provided below in Section 3.7.3 Impact Analysis and Mitigation Measures.

Public comments that were received during the NOP public review period resulted in no addition to the scope of the Draft EIR related to the analysis of cultural resources.

The RRBWSD contracted with ASM Affiliates to describe the cultural resources setting for the proposed project. Unless otherwise specifically cited, the setting information and analysis in this section is based on the *Cultural Resources Review, Onyx Ranch South Fork Valley Water Project,* a confidential report prepared by ASM Affiliates and dated May 2020, on file at the RRBWSD offices.

3.7.1 Environmental Setting

Location and Setting on the Project Site

The 4,109-acre project site is located in northeastern Kern County, in the Kern River Valley, within the South Fork Valley (see Figures 2-1 and 2-2 in Chapter 2 Project Description of this Draft EIR). The project site is located approximately 5 miles from the eastern boundary of the

Isabella Reservoir along the South Fork of the Kern River. The majority of the project site, consisting of approximately 3,418 acres, is located within lands collectively known as the Onyx Ranch. The remaining approximately 691 acres are parcels within the Smith Ranch, of which the RRBWSD owns one-third interest.

Pre-Contact Setting

The Kern River Valley region, including the South Fork Valley, has received minimal archaeological attention compared to other areas of the State. In part, this is because the majority of California archaeological work has concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (Moratto, 1984). Based on previous archaeological research in the Kern River Valley (and the southern Sierra Nevada in general), the Pre-Contact Period appears to exhibit similarities to the archaeological record in the western Mojave Desert/Great Basin according to Schiffman and Garfinkel (1981), Moratto (1984), and Cuevas (2002). The Pre-Contact Period Setting is summarized below.

Lamont Phase (6,000 to 3,200 YBP)

Little, if any, evidence for early occupation or use of the southern Sierra Nevada has so far been identified. Occasional discoveries of Early Archaic, referred to in this region as the Lamont Phase (6000 to 3200 years before present (YBP)), include projectile points that suggest at least occasional use of the mountains for hunting. These dart points are similar to the Pinto series commonly found on the desert, potentially demonstrating cultural connections with these lowland populations. Although the archaeological record is not yet clear, small camps may have been occupied in the South Fork Valley during this period.

Canebrake Phase (3200 to 1350 YBP)

Population appears to have increased during the subsequent Canebrake Phase (3200 to 1350 YBP). According to Cuevas (2002:26), pine nut cache sites at higher elevations first appear during this period, with Moratto (1984:333) noting the establishment of camps near pinyon groves. Sierra Concave Base projectile points, essentially equivalent to Humboldt points in the Great Basin, are the primary diagnostic from this time period.

Sawtooth Phase (1350 to 650 YBP)

The Sawtooth Phase (1350 to 650 YBP) is the chronological equivalent of the Rose Spring Period in the Great Basin and, as in that region, it experienced the transition from the atlatl and dart to the bow and arrow. Sites dating to this period are common. Ornaments appear for the first time, including *Olivella* shell beads, indicating trade connections with the coast.

Chimney Phase (650 YBP to Historic Contact)

The final time period, the Chimney Phase (650 YBP to Historic Contact), reflects the immediately pre-contact/ethnographic Tubatulabal cultural pattern. This included a general hunting and gathering subsistence system, as described below.

Ethnographic Setting

The project site falls within the traditional territory of the Tubatulabal tribe. The Tubatulabal are Uto-Aztecan speakers, thus having cultural and linguistic connections with Shoshone and Kawaiisu groups in the deserts to the east and mountains to the south, respectively. Unlike these Great Basin tribes, Tubatulabal language was not part of the Numic branch of Uto-Aztecan but instead constituted its own branch, Tubatulabic (Kroeber, 1925; Voegelin, 1938). This suggests that they have been in place, and linguistically separated, from these language-relatives for quite some time, perhaps 5000 years (Lamb, 1958).

Reflecting their geographical and linguistic position between the Native Californian and Great Basin peoples, the Tubatulabal reflected a combination of both cultural patterns. Their mythology and religion were primarily Great Basin in tenor (Voegelin, 1938), with an emphasis on individual shamanistic ceremonies rather than periodic rituals. Their subsistence practices, however, combined emphases on the pinyon pine, like their Great Basin relatives, with the acorn, like the Yokuts to the west. In fact, the name Tubatulabal means “pine nut eaters” and was used by their Yokuts neighbors.

The Tubatulabal were loosely organized into three bands, the Pahkanapil on the South Fork of the Kern River, the Palagewan on the North Fork of the Kern River, and the Bankalachi on the western side of the Kern River Valley (Smith 1978). These bands were aggregations of small hamlets, with each hamlet containing two to six households of extended families. Although the Pahkanapil band was the larger of the bands, total Tubatulabal population prior to contact is estimated at only 300 to 500 people (Voegelin, 1938).

Voegelin recorded two Tubatulabal hamlets in the vicinity of the project location. The first is *Omomip*, name untranslated, which she mapped at two nearby locations. The first location is in the hills above the South Fork of the Kern River, whereas the second is a current tribal allotment, on the north bank of the South Fork Valley floor, against the mountain slope. It is in the vicinity of the historical Onyx Ranch headquarters and appears to have been initially associated with wage labor on the ranch by tribal members (according to Powers [1987:51], Tubatulabal families provided several generations of cowboys to the ranch). As a federal allotment, it is outside of the project site. Judging from the historical circumstances, these duplicated hamlet names appear to represent a shift in the settlement location (the traditional location in the foothills to the current location on the allotment) by most, but not all of its occupants, to better accommodate employment on the ranch.

The second hamlet is *Yowolup*, Red Dirt Place, at a spring at the South Fork Valley edge, west of the current location of the community of Onyx. It was unoccupied in 1932, but was estimated to have about 35 occupants historically. It has not been relocated though it appears to have been northeast and outside of the project site.

By about 1870, most of the remaining Tubatulabal were living and farming in the South Fork Valley, with many tribal members working for the Euro-American farmers and ranchers that were settling in the area. The Dawes Severalty Act of 1887 was passed with the intention of promoting private ownership of small farms by tribal members (Clemmer and Stewart, 1986). In 1893, the

Tubatulabal were awarded a series of allotments as a result of this act, many of which were named for the families that received them. These allotments were held in trust, restricting how the occupants could use them; perhaps the greatest of which is no right to build permanent structures on the property. As a result of this historical event, the Tubatulabal fall within the unusual (though not unique) position of not having full status as a "federally recognized tribe" yet; nonetheless, retaining a kind of recognition that allows them to receive some, but not all, forms of tribal assistance from the Bureau of Indian Affairs.

Historical Setting

The initial Euro-American incursion into the Kern River Valley region occurred when Joseph Reddeford Walker crossed through, from west to east, during his 1833 – 1834 expedition. Walker Pass, at the east end of the South Fork Valley, is named for the route that he "discovered" during this first trip. He returned, going the opposite direction, in 1843 and, in 1845, he led the third Fremont expedition through the Kern River Valley (Walker, 1971).

The discovery of gold in northern California in 1848 resulted in a dramatic increase of population, consisting in good part of fortune seekers and gold miners, who began to scour other parts of the State. The Kern River Gold Rush in the late 1850s brought the first significant Euro-American population into this mountainous area. This was centered on the North Fork of the Kern River and, though initially involving placer deposits, hard-rock mining had begun by 1854 (Walker, 1971). Population throughout the area grew rapidly with this rush, with new immigrants ranching in the San Joaquin Valley to supply the miners and mining towns.

Joseph V. Roberts was one of the early settlers to establish residency on the South Fork in 1860. Roberts was born in Ohio in 1825 and fought in the Mexican War in 1846. He came to California in the 1850s and, unlike other settlers from the east, was more interested in ranching than mining. Roberts married a Tubatulabal woman and stayed through the 1860s (Walker, 1971). He and subsequent settlers irrigated the land from the South Fork of the Kern River to grow small crops on their property.

In 1861, William Scodie settled on the site of what would become the Onyx Post Office. Scodie would later be recognized as the founder of Onyx. He established a store, constructed of adobe, in 1861. Scodie was born in Prussia in 1827. He came to California in 1850 and ran a hotel in Keyesville before settling in Onyx (Powers, 1971).

In 1863, John Nicoll, Thomas H. Smith, and George Clancey established farms along the South Fork of the Kern River in the Onyx area and dug ditches for irrigating their land. Flooding in 1862 changed the river course and widened the channel (Powers, 1987; DWR, 1929). William Wallace Landers purchased land in Onyx in 1871. Six years later he moved his herd to the area and established the Onyx Ranch as his headquarters (DWR, 1929; Powers, 1987). By 1878, the Onyx area had a post office and stores and a small community of farmers and ranchers (Powers, 1987).

William Wallace Landers was born in 1827 in Texas, came to California in 1850, and ranched in Visalia until 1870 when he moved his headquarters to the South Fork Valley and purchased Onyx

Ranch. In 1872, Landers dug the Landers Ditch to bring water from the South Fork of the Kern River to the fields adjacent to his ranch headquarters. Each year thereafter, he expanded his herd range east and south across the Mojave Desert, east of the South Fork Valley (Powers, 1971). Landers ran his cattle on uncontrolled range land on the Mojave Desert, extending from Little Lake to Antelope Valley to Victorville. In the 1890s, the government took control of the desert lands. In 1923, Landers died and his fee land was purchased by Jack Doyle, a famous fight promoter (Powers, 1987). By 1932, the Onyx Ranch was 28,000 acres total, including land in the South Fork Valley and on the desert floor (Powers, 1987). Onyx Ranch was purchased by Oscar Rudnick and Art Alexander in 1938 (Stoecklein, 2000).

Rudnick emigrated from Lithuania in 1906 when he was fourteen years old. In his early years, he worked as a traveling salesman in California and then became a butcher. He owned a grocery store in Los Angeles until 1919 when he moved to Bakersfield to ranch. Rudnick bought out Alexander when he retired in 1955. Rudnick died in 1959 and his business continued through his sons. By 1987, the Onyx Ranch grew to 153,000 acres plus 153,000 acres of leased range land (Powers, 1987).

The Weldon area, a short distance to the west, was established in 1865 when H.D. Stramler settled approximately one mile west of what would become the Weldon Post Office. In 1867 and 1868, more settlers came to the area to build ditches and irrigate the land. Ten new farms/ranches were established, with the Miller Ditch dug by H. T. Miller who, otherwise, does not appear in the historical records. These ditches were established by “squatter’s rights” (DWR, 1929).

By 1929, this area of the South Fork Valley had twenty-seven ditches along the river; eight on the north side and nineteen on the south. The majority of the ditches were individually owned by ranchers, although some ditches were maintained by small groups of farmers or ranchers. The ditches consisted of shallow, earthen-dug depressions with temporary brush and sand dams to divert the water from the South Fork of the Kern River. The length of the ditches ranged from one to seven miles long. A spillway was typically installed below the point of diversion to regulate the flow of water in the ditch. Crops grown in the area included alfalfa and grain but most of the land was used for pasture (DWR, 1929).

In 2009, the Rudnick Estates Trust sold the Onyx Ranch to Renewable Resources, Inc. Renewable Resources attempted to entitle 500-acres within the South Fork of the Kern River Valley as a 60-megawatt solar facility in 2010. In 2013, the RRBWSD purchased approximately 3,400 acres of the historical Onyx Ranch located in the South Fork Valley, including the previously proposed solar facility land.

The Onyx Ranch water conveyance system accreted over time reflects the efforts of individual farmers and ranchers to access water from the South Fork of the Kern River. It did not comprise an integrated water conveyance system until the project site was acquired by RRBWSD in 2013. Ownership of these (and other) irrigation ditches on the project site is varied and complex, with some ditches now owned by the RRBWSD and some ditches owned by others where the RRBWSD has clear written easements or prescriptive rights to use. Following the acquisition of the 3,400-acre Onyx Ranch, the RRBWSD has continued with existing tenants for agricultural

use (farming and ranching) with the existing ditches used to irrigate crops and pastures. The RRBWSD and their tenants have maintained the ditches on the project site.

Cumulative Setting

As discussed in Section 3.2 Cumulative Impacts Methodology, the geographic area addressed in the discussion of cumulative impacts varies based on the environmental resource topic being analyzed. The geographic area of the analysis of the potential cumulative impacts of the proposed project and cumulative projects related to cultural resources is limited to the Kern River Valley, as described above. This is because impacts relative to cultural resources are generally considered in the context of the environmental and cultural setting. For example, the effect of project-related ground disturbance to archaeological resources would tend to be limited to the localized area of a project and could be considered cumulative if resources were to be impacted as a result of two or more nearby projects.

3.7.2 Regulatory Framework

Federal

Section 106 of the National Historic Preservation Act

Archaeological resources are protected through the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470f), and its implementing regulation, Protection of Historic Properties (36 Code of Federal Regulations [CFR] Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Prior to implementing an "undertaking" (e.g., issuing a federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation and the State Historic Preservation Office (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register of Historic Places (National Register). As indicated in Section 101(d)(6)(A) of the NHPA, properties of traditional religious and cultural importance to a tribe are eligible for inclusion in the National Register. Under the NHPA, a resource is considered significant if it meets the National Register listing criteria at 36 CFR 60.4.

National Register of Historic Places

The National Register was established by the NHPA of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (36 CFR 60.2). The National Register recognizes both historic-period and prehistoric archaeological properties that are significant at the national, State, and local levels.

To be eligible for listing in the National Register, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures,

and objects of potential significance must meet one or more of the following four established criteria (U.S. Department of the Interior, 2002):

A. Are associated with events that have made a significant contribution to the broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for National Register listing (U.S. Department of the Interior, 2002).

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior, 2002). The National Register recognizes seven qualities that, in various combinations, define integrity. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

State of California

California Office of Historic Preservation

The State implements the NHPA through its statewide comprehensive cultural resources surveys and preservation programs. The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level. The OHP also maintains the California Historic Resources Inventory. The SHPO is an appointed official who implements historic preservation programs within the State's jurisdictions.

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the State and is codified at PRC Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment. The CEQA Guidelines (Section 15064.5) recognize that a historical resource includes: (1) a resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (California Register); (2) a resource included in a local register of historical resources, as defined in PRC Section

5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record. The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be an historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of CEQA Section 21084.1 and CEQA Guidelines Section 15064.5 apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired) in the significance of an historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (CEQA Guidelines Sections 15064.5(b)(1), 15064.5(b)(4)).

If an archaeological site does not meet the criteria for a historical resource contained in the CEQA Guidelines, then the site may be treated in accordance with the provisions of Section 21083, which is a unique archaeological resource. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in Section 21083.2, then the site is to be treated in accordance with the provisions of Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required.

The CEQA Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (CEQA Guidelines Section 15064.5(c)(4)).

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility for the California Register are based upon the National Register criteria (PRC Section 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a prehistoric or historical-period property must be significant at the local, State, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must meet one of the criteria of significance described above, retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource, and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally determined eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register);
- Individual historical resources;
- Historical resources contributing to historic districts; and,
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Health and Safety Code Section 7050.5

California Health and Safety Code Section 7050.5 requires that, in the event human remains are discovered, the County Coroner be contacted to determine the nature of the remains. In the event the remains are determined to be Native American in origin, the Coroner is required to contact the Native American Heritage Commission (NAHC) within 24 hours to relinquish jurisdiction.

California Public Resources Code Section 5097.98

California PRC Section 5097.98, as amended by Assembly Bill 2641, provides procedures in the event human remains of Native American origin are discovered during project implementation. PRC Section 5097.98 requires that no further disturbances occur in the immediate vicinity of the discovery, that the discovery is adequately protected according to generally accepted cultural and archaeological standards, and that further activities take into account the possibility of multiple burials. PRC Section 5097.98 further requires the NAHC, upon notification by a County Coroner, designate and notify a Most Likely Descendant (MLD) regarding the discovery of Native American human remains. Once the MLD has been granted access to the site by the landowner and inspected the discovery, the MLD then has 48 hours to provide recommendations to the landowner for the treatment of the human remains and any associated grave goods.

In the event that no descendant is identified, or the descendant fails to make a recommendation for disposition, or if the land owner rejects the recommendation of the descendant, the landowner may, with appropriate dignity, reinter the remains and burial items on the property in a location that will not be subject to further disturbance.

Assembly Bill 52

Assembly Bill (AB) 52 (Chapter 532, Statutes of 2014) requires lead agencies to consider the effects of projects on tribal cultural resources and to conduct consultation with federally and non-federally recognized Native American Tribes early in the environmental planning process. AB 52 applies specifically to projects for which a Notice of Preparation (NOP) or a notice of Negative Declaration or Mitigated Negative Declaration (MND) will be filed on or after July 1, 2015.

The goal of AB 52 is to include California Tribes in determining whether a project may result in a significant impact to tribal cultural resources that may be undocumented or known only to the Tribe and its members. This assembly bill specifies that a project that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. AB 52 defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe” that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources (PRC Section 21074 (a)(1)).

AB 52 requires that prior to determining whether a Negative Declaration (ND), MND, or Environmental Impact Report (EIR) is prepared for a project, the lead agency must consult with California Native American Tribes, defined as those identified on the contact list maintained by

the NAHC, who are traditionally and culturally affiliated with the geographic area of the proposed project, and who have requested such consultation in writing to the lead agency.

AB 52 outlines the required procedures concerning consultation (PRC Section 21080.3.1(d) and (e)), including the initiation and conclusion of consultation. Consultation should be initiated by a lead agency within 14 days of determining that an application for a project is complete or that a decision by a public agency to undertake a project. The lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American Tribes that have requested notice. At the very least the notice should consist of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American Tribe has 30 days to request consultation pursuant to this section. The lead agency shall begin the consultation process within 30 days of receiving a California Native American Tribe's request for consultation. According to PRC Section 21080.3.2(b), consultation is considered concluded when either the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

Local

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, policies, and implementation measures of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the Kern River Valley Specific Plan (KRVSP) area, which was addressed in the KRVSP adopted by Kern County in 2011. The KRVSP one elements that includes goal, policy, and implementation measures related to cultural resources within the Kern River Valley. The applicable element and its goal, policy, and implementation measures are as follows:

Land Use Element

The Land Use Element discusses established and future development patterns within the Kern River Valley; sets forth goals, policies, and implementation measures to guide decision-making; and provides a land use plan to direct growth to desired areas where infrastructure and services can be provided while minimizing potential impact on natural resources. The Land Use Element identifies a goal, policy, and implementation measures to protect and preserve historic and cultural resources in the Kern River Valley. The applicable goal, policy, and implementation measure are as follows:

Goal 2.1.2: Protect historical and cultural resources and sites within the Kern River Valley.

Policy 2.1.10: Promote the preservation of cultural and historic resources which provide ties to the past.

Implementation 2.1.1: The Kern County Planning and Community Development Department shall work with local Native American groups and historic organizations to inventory a specific list of historic resources and sites utilizing community input. The list of historic resources and sites shall be protected to the greatest extent possible. New discretionary projects shall incorporate protective measures for those historic resources and sites identified.

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009). The Land Use, Open Space, and Conservation Element of the General Plan provides for the conservation of Kern County's agricultural and natural resources including cultural resources (Kern County, 2009). The applicable goal, policy and implementation measures are as follows:

Land Use, Open Space and Conservation Element

The Land Use, Open Space, and Conservation Element identifies a goal, policy, and implementation measures to promote the preservation of cultural and historic resources. The applicable goal, policy, and implementation measures are as follows:

Goals: General Provisions: Ensure that the County can accommodate anticipated future growth and development while maintaining a safe and healthful environment and a prosperous economy by preserving valuable natural resources, guiding development away from hazardous areas, and assuring the provision of adequate public services

Policy 25. The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measure K. Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

Implementation Measure L. The County shall address archaeological and historical resources for discretionary projects in accordance with the California Environmental Quality Act (CEQA).

3.7.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to page 3.7-1 above for a summary of the environmental issues included in this Draft EIR for the analysis of cultural resources. This Draft EIR assumes that the implementation of the proposed project would have a significant impact related to cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.
- Disturb any human remains, including those outside of formal cemeteries.

Section 3.7.2 Regulatory Framework, State of California provided above, discusses in detail the requirements of the PRC, CEQA, and the CEQA Guidelines related to cultural resources including: the definition of historical resources and archeological resources; the processes used to determine the substantial adverse change in the significance of a historical resource or archeological resource that may have a significant effect on the environment; and the requirements and methods that can be used to mitigate identified significant impacts to cultural resources. Additionally, the discussion above addresses the requirements provided in the California Health and Safety Code and the California Public Resources Code in the event human remains are discovered during implementation of a proposed project and recommendations for disposition according to accepted County regulations and generally accepted cultural and archeological standards.

Methodology

Area of Potential Effect

For the purpose of this CEQA analysis, the project Area of Potential Effect (APE) was defined as areas within the project site that consists of: the earthen agricultural ditches; the South Fork of the Kern River channel and floodplain; and locations where up to 12 shallow, low-volume wells powered by solar facilities with the associated 2,000 to 4,000 gallon water tanks would be added on an as needed basis, sited within previously disturbed areas adjacent to existing dirt roads to allow for vehicle access for well installation and maintenance without disturbing existing fields, pastures, and other resources, including cultural resources, on the project site.. Therefore, the project APE is a smaller area within the overall project site. Additionally, as discussed in greater detail below, the project site and, therefore the project APE, is an alluvial river bottom and floodplain that prehistorically experienced frequent inundation that resulted in the disturbance of soils and the ground surfaces over time.

Cultural Resources Archival Research

A cultural resources records search was conducted at the California Historic Resources Information System (CHRIS), Southern San Joaquin Valley Information Center (SSJVIC) housed at California State University, Bakersfield. The SSJVIC records search found that: 24 survey reports have been conducted within a 0.5-mile radius of the project site; and 26 survey reports have been conducted within the project site. As a result of these surveys, 24 resources (21 recorded and 3 unrecorded) have been found with 0.5-mile of the project site and 19 resources (17 recorded and 2 unrecorded) have been found on the project site.

The 19 resources found on the project site consist of nine historic built structures/features and nine archeological sites (four historic in age and six prehistoric in age). The historic resources include six historic ditches: Historic Ditch (P-15-013671); Miller Ditch (P-15-018209); Hillside Ditches (P-15-018210 and P-15-019039); Landers Ditch (not recorded); and Prince Ditch (not recorded). The remaining three historic resources consist of the Grant Homestead (P-15-013794), the Onyx Ranch Complex (P-15-017841), and Kelso Valley Road (P-15-017740). The nine archaeological resources include: one historical cemetery (P-15-000099); two historic refuse dumps (P-15-013791 and P-15-013793); two prehistoric milling stations (P-15-000105 and P-15-

000106); one prehistoric lithic scatter (P-15-013792); two prehistoric sites with rock art (P-15-002427 and P-15-0024280); and one isolated millingstone. There is one archeological resource, consisting of a historical cemetery (P-15-013673), located to the south and separated from the project site by SR 178.

Of the six historic ditches, only three, the Miller Ditch (P-15-18209), the Landers Ditch (not recorded); and the Prince Ditch (not recorded), have been previously evaluated for listing in the National Register and through concurrence with the SHPO were determined not eligible. Additionally, the Hillside Ditches (P-15-018210) have been recommended not eligible for listing in the National Register.

The single isolated millingstone lacks historical context and is not eligible for listing in the California Register.

Map Research

In addition to the SSJVIC records search, historical 1908, 1912, 1922, 1934, 1946, 1951, 1955, 1960, 1966, 1975, 1981, and 1986 Onyx and Weldon U.S.G.S. topographical quadrangles were examined to identify potential additional historic features within the project site. Observed historical structures, including ranch complexes and ditches, correspond to the recorded sites listed above. No additional structures were observed.

Geomorphic Analysis

The project site is located in the southern Sierra Nevada Mountains, within the relatively wide (approximately 1 mile north-south) alluvial South Fork Valley, surrounded by steep mountain slopes. The proposed project components would occur on the South Fork Valley floor, which is an alluvial river bottom and floodplain that prehistorically experienced frequent inundation. Although primarily sandy alluvium, the project site can be considered a high energy environment. This conclusion is supported by the fact that the river bottom contains large (vehicle-sized) boulders and smaller cobbles just a few miles upstream of the project site. It is thus poorly suited for more than ephemeral (hunting, fishing, and gathering) use, with villages and camps located on higher ground, such as the foothills immediately abutting the South Fork Valley floor.

This last inference is supported by the distribution of recorded sites across the project site. Villages and camps are located at the juncture of the steep, rocky slopes and the South Fork Valley floor, near springs, rather than on the Valley floor itself. Based on these factors and conditions, the South Fork Valley floor is considered to have a low prehistoric archaeological sensitivity, with little to no potential for subsurface archaeological materials. Low prehistoric archaeological sensitivity for the South Fork Valley floor is further supported by the soils mapping of the County (Meyer et al, 2010). This shows the location to have historic-modern soils, reflecting the active hydrological history of the project site and surrounding area, and thus the lack of taphonomic conditions that would promote site preservation and burial.

Impact Analysis

Historical Resources

Potential Impact CUL-1: Would the proposed project cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?

Subsection Methodology above discusses the findings of the cultural resources archival research, including the nine historical resources identified on the project site.

The nine historical resources, consisting of six historic agricultural ditches, two homestead/ranch complexes, and one historic road, are located within or adjacent to the existing fields and pastures on the project site, within the flat areas of the South Fork Valley floor. Physical changes to these historic resources would be avoided during the implementation of the proposed project. The six historic ditches would continue to be maintained for water conveyance purposes and, although the implementation of the proposed project would reduce the run time and flow through some of the ditches (see Table 2-5 in Chapter 2 Project Description of this Draft EIR), none of the ditches would be modified (i.e., not filled in, not improved). Additionally, all nine historical resources would be avoided during the proposed transition of the currently irrigated agricultural fields and pastures to non-irrigated pastures and native vegetation, and during the siting and installation of up to 12 shallow, low-volume wells powered by solar facilities and their accompanying aboveground water tanks. Therefore, no impacts to these nine historical resources (six historic agricultural ditches, two homestead/ranch complexes, and one historic road) would be anticipated with implementation of the proposed project.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- With implementation of the proposed project, physical changes to the nine historical resources on the project site would be avoided during the proposed transition of irrigated agricultural fields and pastures to non-irrigated pastures and native vegetation, and during the siting and installation of up to 12 shallow, low-volume wells powered by solar facilities and their accompanying aboveground water tanks. Therefore, no impacts to these nine historical resources (six historic agricultural ditches, two homestead/ranch complexes, and one historic road) would be anticipated with implementation of the proposed project. The proposed project would not cause a substantial adverse change in the significance of a historical resource.

Archaeological Resources

Potential Impact CUL-2: Would the proposed project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

Subsection Methodology above discusses the findings of the cultural resources archival research, including the 10 archeological resources identified on the project site.

Five of the nine archaeological resources, consisting of one historical cemetery, two prehistoric milling stations, and two prehistoric sites with rock art, are located on the margins within the project site, south of Highway 178 on the slopes and hillsides above the South Fork Valley floor. These five archaeological resources would not be affected by the proposed project because the proposed transition of the fields and pastures and the installation of up to 12 shallow, low-volume wells powered by solar facilities and their accompanying aboveground water tanks would avoid the locations of these archeological resources. Therefore, no impacts to these five archaeological resources (one historical cemetery, two prehistoric milling stations, and two prehistoric sites with rock art) would be anticipated with implementation of the proposed project.

As an isolated artifact, the isolated millingstone lacks historical context and therefore is ineligible for listing in the California Register and does not typically qualify as an historical resource or unique archaeological resource under CEQA. Therefore, there would be no impact to an archaeological resource associated with this isolated millingstone.

The remaining three archaeological resources (two historic refuse dumps and one prehistoric lithic scatter) are located within or adjacent to the fields and pastures on the project site, in flat areas of the South Fork Valley floor. The two historic refuse dumps are located within an existing non-irrigated pasture. This pasture would remain as a non-irrigated pasture and would not be affected by the pasture transition activities associated with the proposed project. However, should there be a need to install wells in this pasture, the installation of the proposed shallow, low-volume wells could have the potential to affect the two historic refuse dumps if ground disturbance occurs within the boundaries of these known resources. Nevertheless, the shallow, low-volume wells and accompanying water tanks would need to be sited within previously disturbed areas adjacent to existing dirt roads to allow for vehicle access for well installation and maintenance without disturbing existing fields and other resources on the project site. Therefore, the location of wells based on these siting criteria would not happen in the non-irrigated pasture where the two historic refuse dumps occur. Therefore, the potential impacts to these two archeological resources (two historic refuse dumps) would be less than significant.

The third archaeological resource, a prehistoric sparse lithic scatter, is situated within an irrigated field that is proposed for transition to a non-irrigated pasture with implementation of the proposed project. The agricultural field has been plowed regularly over the years and the proposed field conversion activities would be less impactful than the past agricultural plowing. As a result, this archeological resource would not be affected by the pasture transition activities associated with the proposed project. However, since this resource is located near an existing dirt road, if this area is selected as a potential well location, there would be the potential for the prehistoric sparse lithic

scatter to be affected by well installation activities, including drilling of a proposed shallow, low-volume well in a disturbed area adjacent to the road. Therefore, there is the potential for the proposed project to result in a significant impact to this archeological resource (prehistoric lithic scatter). Incorporation of Mitigation Measure CUL-1 would reduce this impact to a less than significant level.

A geomorphic analysis that was conducted, as well as the distribution of known archaeological resources across the project site based on landform, indicates that the potential for buried archaeological resources is low within the high-energy environment of the South Fork Valley floor. Nonetheless, ground disturbing activities associated with shallow, the low-volume well installation, particularly drilling, would have the potential to cause a substantial adverse change in the significance of unknown archaeological resources qualifying as unique archaeological resources under CEQA Section 15064.5, should they be encountered. Therefore, implementation of the proposed project would have the potential to result in a significant impact from the unanticipated discovery of archaeological resources during the installation of up to 12 shallow, low-volume wells on the project site. Incorporation of Mitigation Measure CUL-2 would reduce the potential impacts from the unanticipated discovery of archaeological resources to a less than significant level.

Mitigation Measures

CUL-1: <u>Retention of Qualified Archaeologist and Avoidance of Prehistoric Sparse Lithic Scatter (P-15-013792).</u> The RRBWSD shall retain a Qualified Archaeologist that meets the minimum professional qualifications standards (PQS) set forth by the Secretary of the Interior (SOI) (codified in 36 Code of Federal Regulations [CFR] Part 61; 48 FR 44738-44739) to oversee the construction monitoring activities for the cultural resources work associated with the proposed project. Prior to the siting of any shallow, low-volume well components in or adjacent to the agricultural field where the prehistoric sparse lithic scatter (P-15-013792) occurs, the Qualified Archeologist shall map the prehistoric sparse lithic scatter location with a buffer around the site perimeter. The map shall be used to determine the area of avoidance for the prehistoric sparse lithic scatter (P-15-013792) during any activities associated with the drilling and construction of the shallow, low-volume wells (including well pad location, materials and equipment staging area, and the dirt access road to be used). The map of the prehistoric sparse lithic scatter (P-15-013792) with the buffer area shall be included in the confidential cultural resources report to be retained on file at the RRBWSD administrative office.

CUL- 2: <u>Archaeological Monitoring and Unanticipated Discoveries.</u> All ground disturbing activities associated with the installation of the shallow, low-volume wells shall be monitored by an archaeological monitor working under the direction of the Qualified Archaeologist. In the event of the unanticipated discovery of archaeological materials, the contractor shall immediately cease all work activities at the well site and within 100 feet of the discovery until it is evaluated by the Qualified Archaeologist. Construction shall not resume until the Qualified Archaeologist has conferred with the RRBWSD and the appropriate Native American representatives (if the find is of Native American origin) on the significance of the resource as an historical resource or as a unique archaeological resource. Based on the determination of the significance of the discovery, the RRBWSD shall implement a strategy for avoidance and preservation in place. A Treatment Plan to implement the avoidance and preservation in place shall be

prepared and, after approval by the RRBWSD, shall be implemented under the direction of the Qualified Archaeologist. The Treatment Plan and associated documentation shall be retained at the RRBWSD administrative office.

Significance Determination

Less than Significant Impact with Mitigation

Impact Summary

- With implementation of the proposed project, there would be no impacts to six archaeological resources on the project site (two historical cemeteries, two prehistoric milling stations, and two prehistoric sites with rock art) because the resources are located on the margins of the project site, south of Highway 178 on the slopes and hillsides above the South Fork Valley floor. With implementation of the proposed project, there would be no impact to the isolated millingstone located on the project site because it does not qualify as a unique archaeological resource under CEQA.
- With implementation of the proposed project, the two historic refuse dumps located within an existing non-irrigated pasture would not be affected by the pasture transition activities associated with the proposed project. However, the installation of the proposed shallow, low-volume wells could have the potential to affect the two historic refuse dumps if ground disturbance occurs within the boundaries of these known resources. Nevertheless, based on siting criteria that wells be located in previously disturbed areas adjacent to existing dirt roads for access, the proposed shallow, low-volume wells would not be located in the non-irrigated pasture that includes the two historic refuse dumps. Therefore, the potential impacts to these two archeological resources (two historic refuse dumps) would be less than significant.
- With implementation of the proposed project, the prehistoric lithic scatter located within an irrigated field that is proposed for transition to a non-irrigated pasture would not be affected by the pasture transition activities. However, since this resource is located near an existing dirt road, if this area is selected as a potential well location, there would be the potential for the prehistoric sparse lithic scatter to be affected by well installation activities, including drilling of a proposed shallow, low-volume well in a disturbed area adjacent to the road. Therefore, there is the potential for the proposed project to result in a significant impact to this archeological resource (prehistoric lithic scatter). Incorporation of Mitigation Measure CUL-1 would reduce this impact to a less than significant level.
- With implementation of the proposed project, the ground disturbing activities associated with well installation would have the potential to cause a substantial adverse change in the significance of unknown archaeological resources qualifying as unique archaeological resources under CEQA Section 15064.5, should they be encountered. Therefore, the proposed project would have the potential to result in a significant impact from the unanticipated discovery of archaeological resources during the installation of up to 12 shallow, low-volume wells on the project site. Incorporation of Mitigation Measure CUL-2 would reduce the potential impacts from the unanticipated discovery of archaeological resources to a less than significant level.

Human Remains

Potential Impact CUL-3: Would the proposed project disturb any human remains, including those outside of formal cemeteries?

The project site includes one known formal cemetery (P-15-000099) located on the margins within the project site. The cemetery on the project site is south of Highway 178 on the slopes and hillsides above the South Fork Valley floor. Additionally, there is one known formal cemetery (P-15-013673), located to the south and separated from the project site by SR 178. As discussed above for Potential Impact CUL-2, the proposed project would have no impact to these two cemeteries. No additional human burials are known on the project site.

The geomorphic analysis, as well as the distribution of known archaeological resources across the project site based on landform, indicates the potential for buried archaeological resources is low within the high-energy environment of the South Fork Valley floor. Nonetheless, ground disturbing activities associated with installation of the shallow, low-volume solar wells and field conversion activities have the potential to disturb unknown human remains, specifically human remains outside of a formal cemetery. This would be considered a significant impact. Incorporation of Mitigation Measure CUL-3 would reduce the potential impacts to human remains to a less than significant level.

Mitigation Measure

> **CUL-3: Human Remains Discovery.** If human remains are encountered, all work in the vicinity (within 100 feet) of the find shall cease and the County Coroner shall be contacted in accordance with PRC Section 5097.98 and Health and Safety Code Section 7050.5. If the County Coroner determines that the remains are Native American in origin, the Native American Heritage Commission (NAHC) shall be notified in accordance with Health and Safety Code Section 7050.5, subdivision (c), and PRC Section 5097.98 (as amended by AB 2641). The NAHC shall designate a Most Likely Descendent (MLD) for the remains per PRC Section 5097.98. Until RRBWSD has conferred with the MLD, the immediate vicinity where the discovery occurred shall not be disturbed by further activity and shall be adequately protected according to generally accepted cultural or archaeological standards or practices, taking into account the possibility of multiple burials.

Significance Determination

Less than Significant Impact with Mitigation

Impact Summary

- With implementation of the proposed project, the ground disturbing activities associated with installation of the shallow, low-volume solar wells and field conversion activities have the potential to disturb unknown human remains, specifically human remains outside of a formal cemetery. This would be considered a significant impact. Incorporation of Mitigation Measure CUL-3 would reduce the potential impacts to human remains to a less than significant level.

Potential Cumulative Impacts

A cumulative impacts analysis of cultural resources, including archeological and historical resources as well as human remains, evaluates whether impacts of a proposed project and related cumulative projects, when taken as a whole, would be considerable or would compound or increase environmental impacts on cultural resources. The cumulative projects to be considered in the analysis of cumulative impacts are listed in Table 3-1 and shown on Figure 3-1 in Section 3.2 Cumulative Impacts Methodology. The only cumulative projects that could have impacts to cultural resources and that, combined with the proposed project, could result in cumulatively considerable impacts, are Cumulative Project C, Upper Taylor Meadow Gully Repair Project, and Cumulative Project D, Weldon Regional Water District. All other projects are located too far away to result in cumulatively considerable impacts.

As discussed above, the proposed project would avoid all previously-recorded historical resources and no impacts to these would be anticipated. For this reason, the proposed project's contribution to cumulative impacts to historical resources under CEQA would not be cumulatively considerable, and the proposed project, considered together with cumulative projects, would not result in cumulative significant impacts on historical resources in the immediate vicinity.

Impacts related to archaeological resources qualifying as historical resources or unique archaeological resources under CEQA are typically due to alteration or destruction of archaeological resources caused by ground disturbing activities. In association with CEQA review, and depending on the depth of excavation and sensitivity of the respective cumulative project sites, mitigation measures including avoidance and preservation in place or other treatment would be required for cumulative projects, such as Cumulative Project C and Cumulative Project D, that have the potential to cause significant impacts to archaeological resources qualifying as historical or unique archaeological resources under CEQA. As with the proposed project, such measures, if implemented, would reduce project level significant impacts of the cumulative projects such as Cumulative Project C and Cumulative Project D to a less than significant level. For example, Cumulative Project D includes the installation of a proposed new storage tank south of SR 178 between Paul's Place Drive and Kelso Valley Road. This project component has the potential to impact archaeological resources, and the CEQA document adopted for Cumulative Project D includes mitigation measures for avoidance, preservation in place, or treatment to reduce impacts to archaeological resources to less than significant levels (Tom Dodson & Associates, 2020). With implementation of Mitigation Measures CUL-1 and CUL-2, the proposed project's contribution to cumulative impacts to archaeological resources under CEQA would not be cumulatively considerable, and the proposed project, considered together with cumulative projects, would not result in cumulative significant impacts on archaeological resources in the immediate vicinity.

Similarly, the potential for cumulative projects to cause significant impact with respect to human remains is low, but if human remains are encountered, compliance with State law and prescribed mitigation would ensure that any such impacts would be reduced to a less significant level. As a result of the implementation of Mitigation Measure CUL-3 as well as State law compliance, no cumulative impacts with respect to human remains would occur, and the proposed project would not result in any incremental contribution to cumulative impacts.

Mitigation Measures

Implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3.

Significance Determination

Less than Significant Impact with Mitigation

Impact Summary

- The proposed project is required to implement Mitigation Measures CUL-1 and CUL-2 for archaeological resources, and to comply with CUL-3 consistent with State regulatory measures for the protection of human remains. Similar measures would be required for cumulative projects to mitigate potential impacts to cultural resources. Therefore, when considered together with cumulative projects, the proposed project's contribution to cumulative impacts to historical resources, archaeological resources, and human remains would not be cumulatively considerable. Cumulative impacts on historical resources, archaeological resources, and human remains would be less than significant with mitigation.

3.7.4 References

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3.8 Geology and Soils

This section addresses the potential impacts related to geology, soils, and paleontological resources associated with implementation of the proposed project. This section includes: a description of the existing conditions related to geologic hazards, soil conditions, and paleontological resources on the project site; a summary of applicable regulations related to geologic hazards, soil conditions, and paleontological resources; and an evaluation of the potential for the proposed project to result in environmental impacts related to the geologic hazards, soil conditions, and paleontological resources on the project site and in the surrounding study area. In addition, an evaluation of the potential cumulative impacts is provided.

The NOP and Initial Study prepared for the proposed project indicated that the Draft EIR would analyze the potential for significant impacts related to geology and soils if the proposed project would:

- Result substantial soil erosion or the loss of top soil.
- Be located on a geologic unit or soil that is unstable or that could become unstable as a result of the proposed project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

The analysis of these potential impacts is provided below in Section 3.8.3 Impact Analysis and Mitigation Measures.

The NOP and Initial Study determined that the proposed project would have no impact or a less than significant impact related to geology and soils for the following issues:

- Expose people or structures to potentially substantial adverse effects, including the risk of loss, injury, or death involving the rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.
- Expose people or structures to potentially substantial adverse effects, including the risk of loss, injury strong seismic ground shaking.
- Expose people or structures to potentially substantial adverse effects involving seismic-related ground failures, including liquefaction.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available or the disposal of waste water.

With the exceptions discussed below, these issues are not discussed further in this Draft EIR (see Section 3.1 Format of the Environmental Impact Analysis and Appendix A, Public Participation Process, for more information).

With the 2019 earthquakes in and surrounding the community of Ridgecrest, including the Kern River Valley, and recent research on the Kern Canyon Fault, the analysis of potential for

significant impacts associated with the rupture of a known earthquake fault on the project site, strong seismic ground shaking, and seismic-induced ground failures have been added back into the analysis provided in this section.

Public comments received during the NOP public review period related to geology resulted in the addition of the following to the scope of the Draft EIR identified in the NOP and Initial Study: discussion of the geologic formation of the South Fork Valley; and discussion of earthquakes in the vicinity and the associated hazards.

The CEQA Guidelines were revised on December 28, 2018, which resulted in moving the thresholds of significance for paleontological resources from the Cultural Resources environmental topic to the Geology and Soils environmental topic. As a result, the analysis of potential impacts related to paleontological resources is provided below in Section 3.8.3 Impact Analysis and Mitigation Measures. The NOP and Initial Study prepared for the proposed project indicated that the Draft EIR would analyze the potential for significant impacts related to paleontological resources if the proposed project would directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

3.8.1 Environmental Setting

Location and Setting on the Project Site

The project site is located in the South Fork Valley portion of the Kern River Valley in northeastern Kern County, within the Sierra Nevada Mountains south of the Kern/Tulare County boundaries. The project site is situated adjacent to and on either side of the South Fork of the Kern River. The headlands of the South Fork of the Kern River are in the Golden Trout Wilderness in the Inyo, South Sierra, and Domeland Wilderness Areas in the Sequoia National Forest. Within the South Sierra Wilderness Area, the northern portion of the South Fork of the Kern River flows through fairly open areas dominated by conifers, sage flats, and wet meadows. Downstream from this portion of the river, the South Fork flows through a deep river gorge for the remainder of the South Sierra Wilderness. The South Fork of the Kern River, together with the North Fork, form the major upstream tributaries of the Kern River and converge at the Isabella Reservoir located approximately 5 miles west of the western project site boundary (see Figures 2-1 and 2-2 in Chapter 2 Project Description of this Draft EIR). Below the Isabella Dam, the Kern River flows through the Kern River Canyon along the southern edge of the Greenhorn Mountains, emerging from the mountains at the eastern boundary of the City of Bakersfield.

The ground surface elevations on the approximately 4,109-acre project site ranges from 2,640 to 3,320 feet above sea level (amsl). The topography on the project site generally slopes towards the west and southwest. The project site has a combination of: vacant areas with steep slopes and rocky terrain generally located along the outer portions of the project site; relatively level areas with agricultural fields, ditches, and limited development; and the riverbed and banks of the South Fork of the Kern River that traverses through the property. Precipitation and surface runoff drain southwesterly from the Onyx area to the Weldon area, along the South Fork of the Kern River and then to Isabella Reservoir (refer to Figure 2-2). Isabella Reservoir outflow occurs via

controlled releases at the Isabella Dam to the Lower Kern River, as described in Section 3.11 Hydrology and Water Quality of this Draft EIR.

Regional Geology

In order to provide a regional context for the geological setting of the project site, a larger Geological Study Area has been defined. The Geological Study Area, including the project site, is located within the Sierra Nevada geomorphic province which extends from where the Coast Ranges, Transverse Ranges, and Mojave Desert Ranges meet in southern California, to the Cascade Ranges in northern California (see Figures 3.8-1 and 3.8-2).[1] The Sierra Nevada is a northwest-trending mountain range that is approximately 400 miles long and 40 to 80 miles wide, with a broad region of foothills along the western slope and steep mountainous terrain descending to valley floors along the eastern front (California Geologic Survey, 2002; Thomas Harder & Co., 2015). The local Greenhorn Mountains, Piute Mountains, and Scodie Mountains geographically shape the Kern River Valley (see Figure 3.8-1) (Kern County, 2011a). The geology of the Kern River Valley is in large part underlain by pre-Tertiary[2] crystalline rocks composed mainly of granitic rocks of the Sierra Nevada granitoid batholith of Mesozoic age[3] and roof pendants of older metasedimentary rocks. These crystalline rocks are overlain by Tertiary gravel, volcanic, sedimentary rocks, alluvium and colluvium as slope wash, and talus mantling the slopes. The Kern River Valley, which includes the South Fork Valley, is underlain by Quaternary[4] to Holocene[5] age alluvial deposits (Smith-Gutcher and Associates, Inc., 2010).

Local Geology

The Kern River Valley is situated near the edge of the "Pacific Ring of Fire" on the North American tectonic plate and northeast of the "Big Bend" of the San Andreas Fault system. The areas in and around the Kern River Valley are characterized by complex and active faulting (Kern County, 2011b). The Geological Study Area is located within a seismically active region as shown on Figure 3.8-2. Several known active faults[6] are within proximity of the Geological Study Area (California Geologic Survey, 2018). The White Wolf Fault, trending from southwest to northeast between Mettler and Caliente, is southwest of the Geological Study Area. North of Caliente is the Breckenridge Fault, which forms the western boundary of Walker Basin, trending northward toward Havilah, just south of the Kern River Valley. From there, the Kern Canyon Fault, runs in a north-south direction through the community of Lake Isabella, the Isabella Dam, and the Isabella Reservoir to the community of Kernville and the North Kern River Valley and beyond. Outside of the Geological Study Area, the Sierra Nevada Frontal Fault runs along the eastern base of the Sierra Nevada and the Garlock Fault runs along the southeast base of the Tehachapi Mountains, southeast of the Kern River Valley (Thomas Harder & Co., 2015).

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1 Geomorphic provinces are large regions that display common characteristic landforms and geologic structures which are governed by tectonics.

2 Tertiary time is from 1.6 million to 65 million years before present time.

3 The Mesozoic age is from 65 million to 245 million years before present time.

4 Quaternary time is from the present to 1.6 million years before present time.

5 Holocene time is from 11,700 years to 1.6 million years before present time.

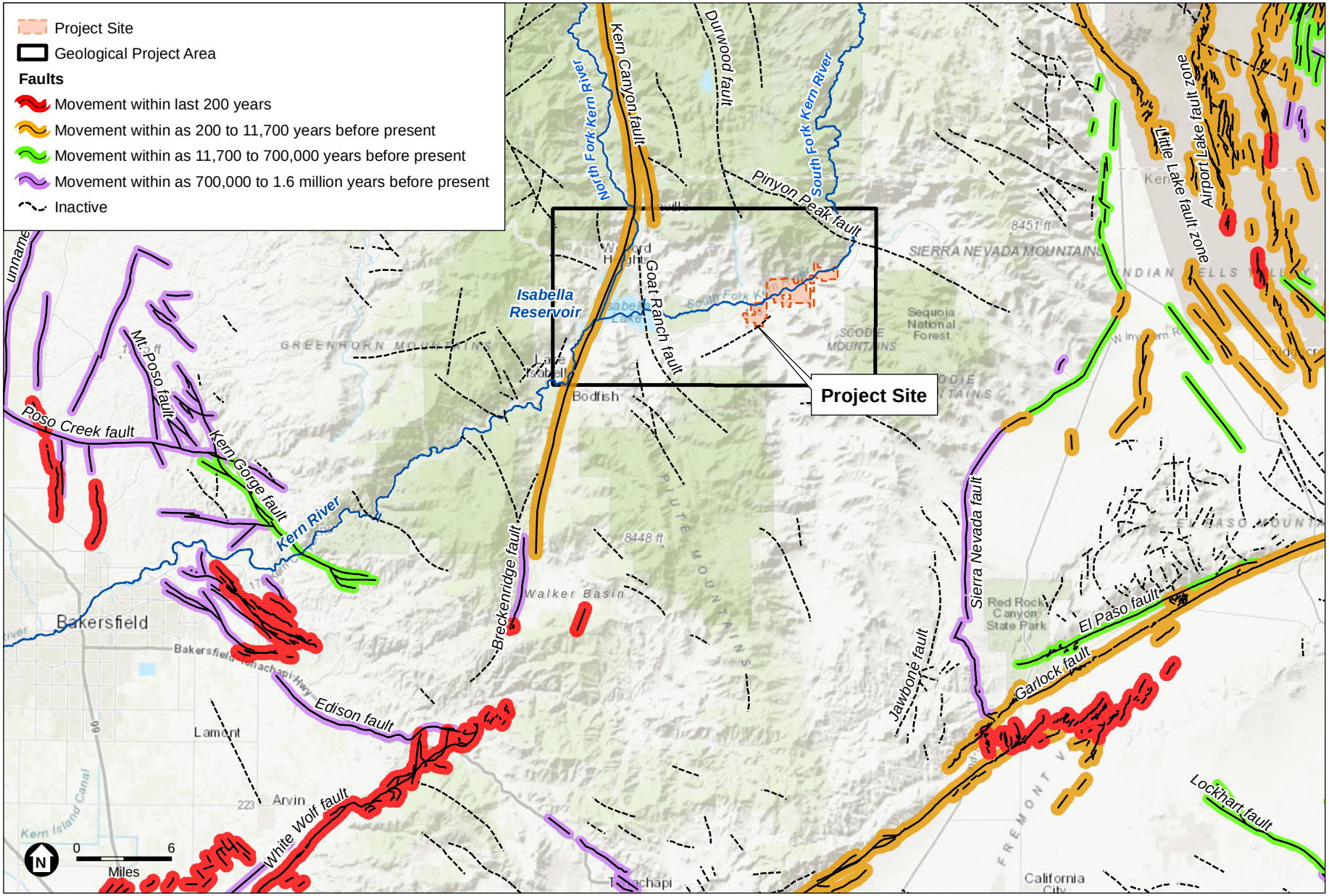
6 The California Geological Survey has defined active faults as faults that have experienced surface displacement within Holocene time (about the last 11,700 years).

SOURCE: ESRI, 2019

Onyx Ranch South Fork Valley Water Project

Figure 3.8-1
Regional Geology

ESA



SOURCE: ESRI, 2019; Kern County, 2018; CGS, 2010

Onyx Ranch South Fork Valley Water Project

Figure 3.8-2
Regional Faults

ESA

Only one active fault, the Kern Canyon Fault, is located within the westernmost portion of the Geological Study Area. About 22 miles east of the Geological Study Area, the active Airport Lake Fault Zone and active Little Lake Fault Zone, both located further east of the Sierra Nevada Frontal Fault, experienced fault movement and earthquakes in 2019. The Kern Canyon, Airport Lake, and Little Lake Faults are described in more detail below in Section Faults and Seismicity.

There is a history of earthquakes within the Kern River Valley. The 7.3 magnitude Kern County earthquake in 1952 occurred along the White Wolf Fault. The Walker Pass 6.3 magnitude earthquake occurred in the Scodie Mountains in 1946 near the Sierra Nevada Frontal Fault (Kern County, 2011b). As discussed in more detail below, most recently, numerous earthquakes occurred on the Airport Lake Fault Zone and active Little Lake Fault Zone, with maximum magnitudes of 7.1 on July 5, 2019 and 6.4 on July 4, 2019 (Southern California Seismic Network, 2019).

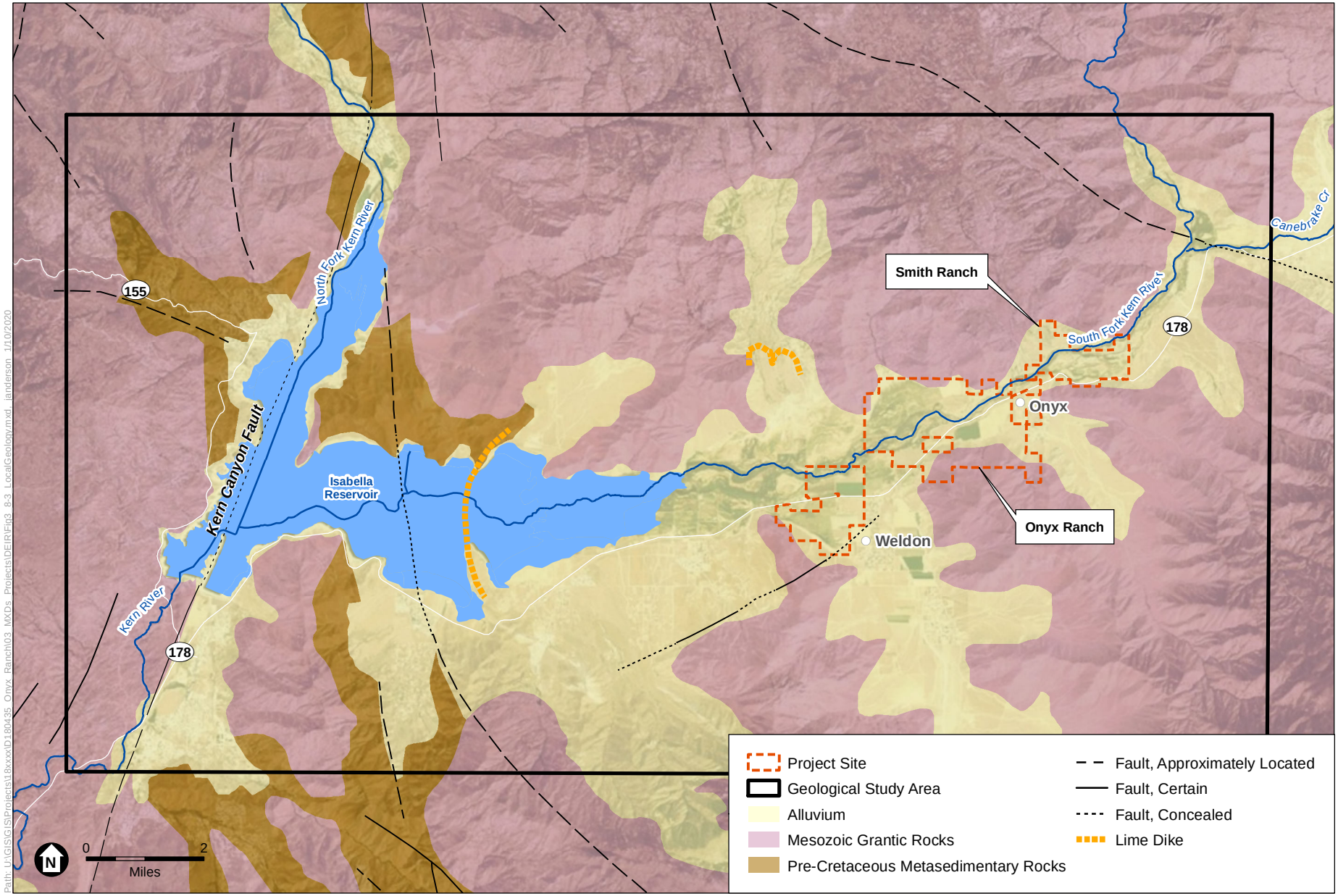
The Geological Study Area is located within the southern portion of the Sierra Nevada Mountains where the geology is characterized primarily by igneous and metamorphic crystalline rocks of various ages ranging from early Paleozoic age (600 million years before present) to middle/late Mesozoic age (100 to 80 million years before present). Primary geologic units that have been mapped within the Geological Study Area include the following from oldest to youngest (see Figure 3.8-3):

- **Mesozoic granite:** Cretaceous metasedimentary rocks including quartzite, phyllite, schist, marble, gneiss, and metavolcanic rocks (145 million years ago to 100.5 million years ago) (USGS, 2018).
- **Mesozoic granodiorite:** Mesozoic granitic rock consisting primarily of the Isabella Granodiorite (100.5 million years ago to 66 million years ago).
- **Quaternary alluvium:** Late Pleistocene and Holocene (recent) alluvium that overlies the bedrock in the South Fork Valley. The alluvium consists primarily of sand and gravel with localized lenses and layers of silt and clay (1.8 million years ago to present) (Smith-Gutcher and Associates, 2010).

Additionally, an outcrop of early Mesozoic metasedimentary rock composed of marble (metamorphosed limestone) occurs north and south of the South Fork of the Kern River within the Isabella Reservoir (Thomas Harder & Co., 2015) (see Figure 3.8-3). This outcrop has been referred to locally as the "lime dyke." Early descriptions of the dyke suggest that it extends beneath the alluvial surface across the South Fork Valley and creates a groundwater flow barrier. Its impact on groundwater flow was suggested from surfacing groundwater in the river channel in the vicinity of the dyke during low stream flow conditions and a noticeable steepening of the groundwater gradient in this area from groundwater contour maps.

Local Soil Conditions

The soil types within the project site are made up primarily of sandy loams, coarse sands and gravel, riverwash materials, and rock outcrops. Sandy loams and course sands and gravel primarily exist on flat agricultural lands with 0 to 15 percent slopes; while gravelly, riverwash, and rock outcrop associations primarily occur closer to the South Fork of the Kern River and along foothills with up to 30 to 60 percent slopes.



SOURCE: Mapbox; Kern County, 2018; Harder, 2018; CGS, 2010

Onyx Ranch South Fork Valley Water Project

Figure 3.8-3

Geologic Units in Project Area

ESA

Regional and Local Seismic Activity

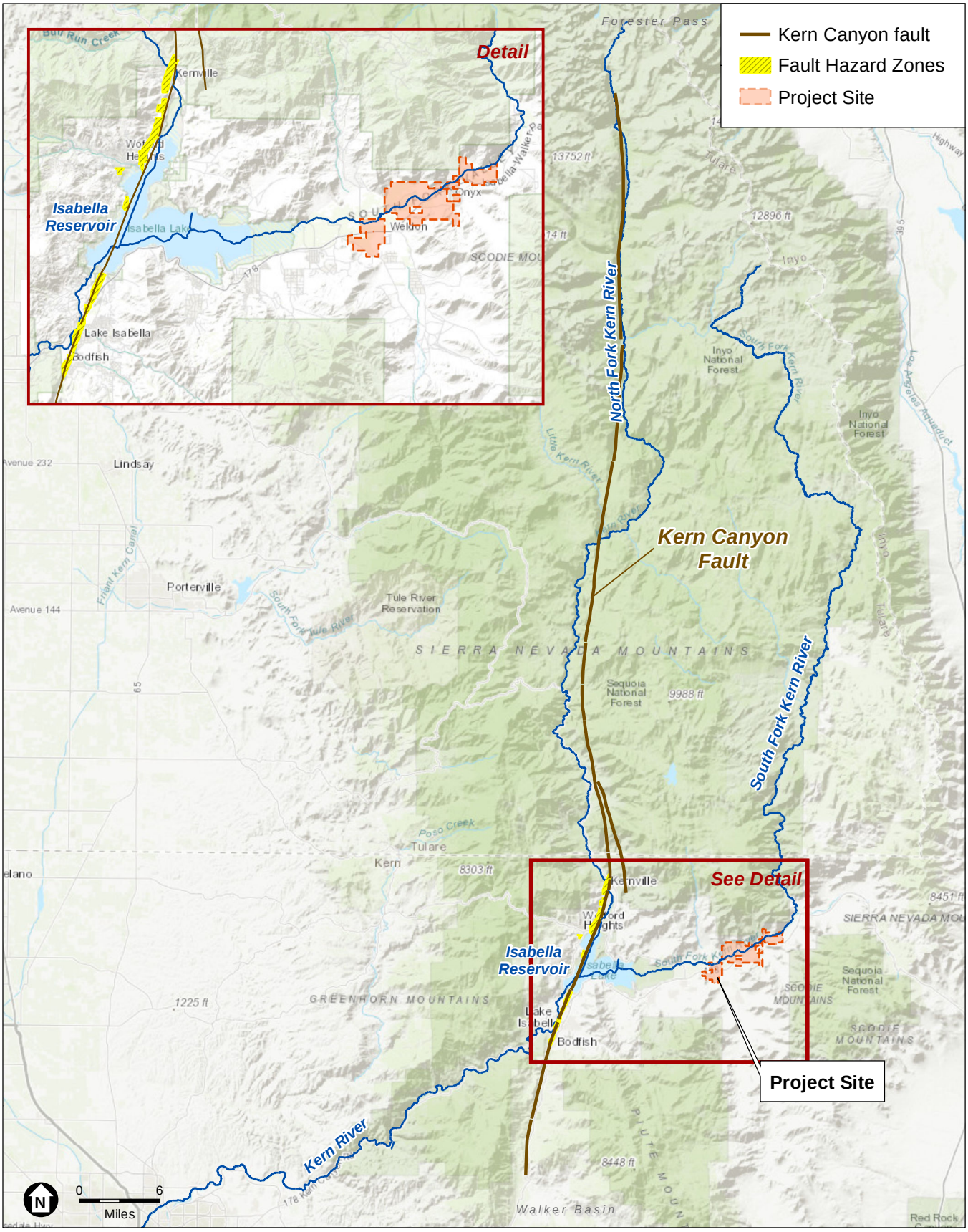
As described above, the Geological Study Area is in a seismically active area. There is a history of earthquakes regionally, within the Kern River Valley. However, there have been no notable earthquakes with epicenters located within the South Fork Valley (Kern County, 2011b). The California geological Survey (CGS) defines an active fault as one that has had surface displacement within Holocene time (within the last 11,700 years) (CGS, 2007). A potentially active fault is defined as a fault that has shown evidence of surface displacement during the Quaternary period (the last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. This definition does not mean that a fault lacking evidence of surface displacement is necessarily inactive. The term "sufficiently active" is also sometimes used to describe a fault if there is some evidence that Holocene displacement has occurred on one or more of its segments or branches.

The closest active fault that has been mapped within the Geological Study Area is the Kern Canyon Fault located approximately 9 miles west of the project site (Kelson, Keith I., David T. Simpson, Ronn S. Rose, David C. Serafini, 2010). The Kern Canyon Fault extends from Walker Basin north to Forester Pass between the Kern River and the Kings River, for a distance of approximately 91 miles and trends approximately north-south across the western end of Isabella Reservoir (see Figure 3.8-4). Although not currently included on the list of Alquist-Priolo active faults by the CGS, the recent research cited above has revealed this fault is active with earthquakes occurring as recently as between 2,000 and 5,000 years ago and has a slip rate estimated to be about 0.2 to 0.4 millimeters per year (0.008 to 0.016 inch per year). The project site is not located in the Kern Canyon Fault Hazard Zone, as illustrated on Figure 3.8-4 (C.C. Brossy; K.I. Kelson; C.B. Amos; J.N. Baldwin; B. Kozlowicz; D. Simpson; M.G. Ticci; A.T. Lutz; O. Kozaci; A. Streig; R. Turner; R. Rose, 2012).

The Airport Lake Fault Zone and Little Lake Fault Zone, located about 22 miles east of the project site, are fault zones with a number of fault traces, as shown on Figure 3.8-2 (Southern California Seismic Network, 2019). As previously noted, numerous earthquakes occurred in the Ridgecrest area on faults within these fault zones with maximum magnitudes of 7.1 on July 5, 2019, and 6.4 on July 4, 2019. Very strong ground shaking occurred over a 40-kilometer wide (25-mile) region near the epicenter that included the City of Ridgecrest. Ground shaking was also experienced in the Kern River Valley. Additionally, ground shaking was widely felt, with light to moderate ground shaking in Los Angeles and weak shaking in the San Francisco Bay Area as well as ground shaking felt as far east as Phoenix and as far north as Sacramento.

Seismic Hazards

The project site could be affected by a major earthquake along the seismically-active or potentially-active Kern Canyon Fault, the Little Lake/Airport Lake Faults, or other more distant faults. Seismically-induced hazards include fault rupture, strong ground shaking, liquefaction and lateral spreading, landslides, and settlement as described below.



SOURCE: ESRI; Kern County; CGS

Onyx Ranch South Fork Valley Water Project

Figure 3.8-4
Kern Canyon Fault

ESA

Fault Rupture and Strong Ground Shaking

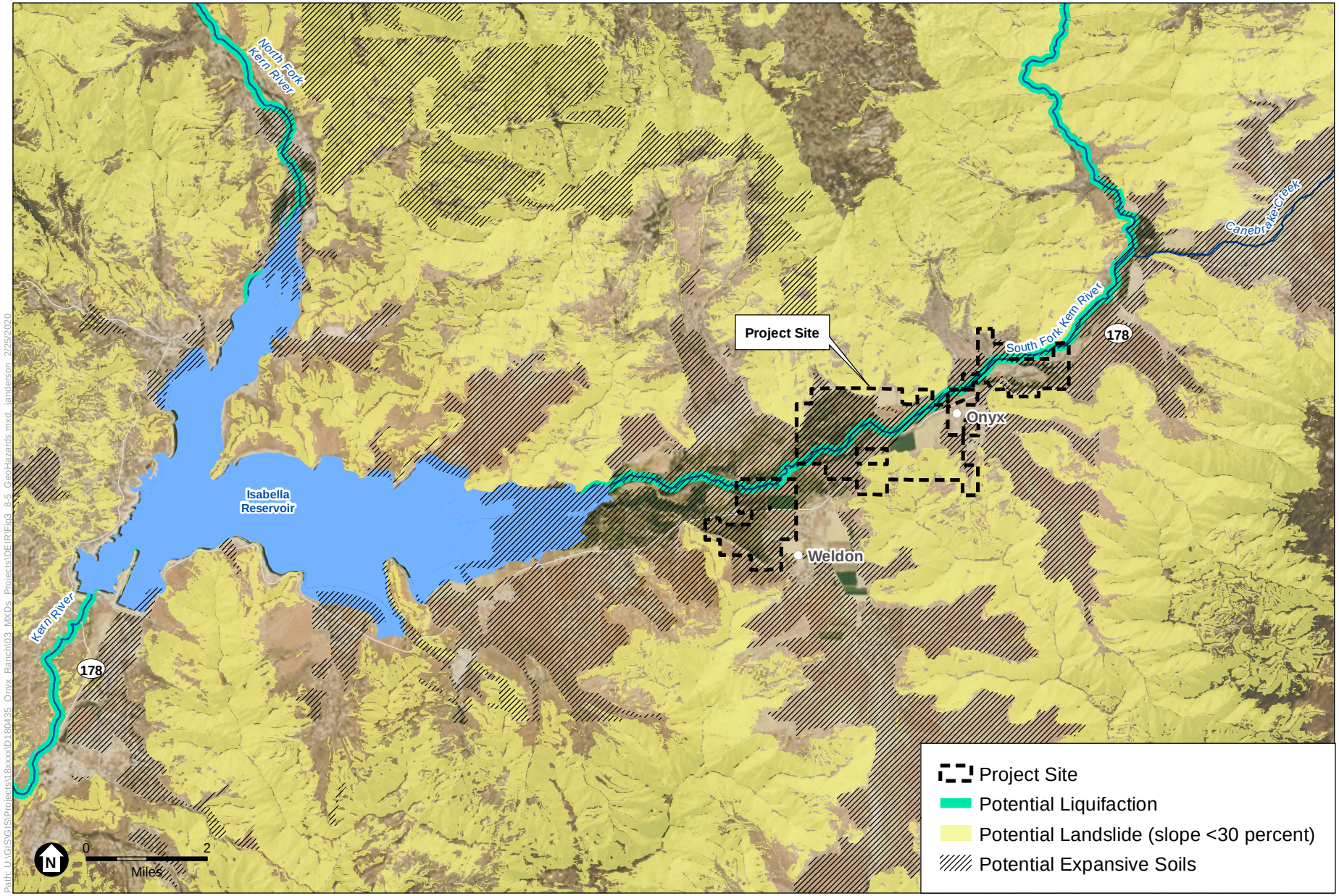
As previously discussed, the project site is not crossed by known active or potentially active faults. However, the project site may be subjected to seismic shaking from the active Kern Canyon Fault located 9 miles to the west, the Airport Lake Fault, Little Lake Fault located 22 miles to the east, or other more distant faults. The strength of ground shaking depends on the size of an earthquake, the distance from the fault, the type of fault, and the response of the geologic materials at the project site. The Kern Canyon Fault is estimated to be capable of earthquakes of up to 6.5 to 7.5 magnitude (Kelson, Keith I., David T. Simpson, Ronn S. Rose, David C. Serafini, 2010). The Airport Lake/Little Fault Zones had numerous earthquakes in 2019 with maximum magnitudes of 7.1 and 6.4 (Southern California Seismic Network, 2019). The 2019 earthquakes that caused strong ground shaking in the Kern River Valley which resulted in road closures due to rockslides on SR 178 through the Kern River Valley.

Liquefaction, Lateral Spreading, and Settlement

Soil liquefaction is a phenomenon whereby unconsolidated saturated soils lose cohesion and behave closer to a fluid as a result of severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking can result in ground failure. Secondary ground failures associated with liquefaction include lateral spreading or flowing of stream banks or fills, sand boils, and subsidence. Areas characterized by water-saturated, cohesion-less, and granular soils are most susceptible to liquefaction and usually at depths of less than 50 feet, especially in areas with a shallow water table. As shown on Figure 3.8-5, the area along the South Fork of the Kern River within the Geological Study Area and project site is susceptible to liquefaction.

Lateral spreading is a phenomenon where large blocks of intact, non-liquefied soil move downslope on a liquefied substrate of relatively large aerial extent. The mass moves toward an unconfined area, such as a descending slope or stream-cut bluff, and is known to move on slope gradients as gentle as one degree. Lateral spreading may occur as a result of an earthquake, with the amount of spreading depending on the earthquake magnitude, distance of earthquake from the site, slope height and angle, the thickness of liquefiable soil, and the gradation characteristics of the soil. Hazards related to lateral spreading during a seismic event have the potential to occur within the Geological Study Area and project site.

Granular soils tend to densify when subjected to shear strains induced by ground shaking during earthquakes. Strong ground shaking can cause settlement by allowing sediment particles to become more tightly packed, thereby reducing pore space. Unconsolidated, loosely packed granular alluvial deposits are especially susceptible to this phenomenon. Hazards resulting from seismically induced settlement have the potential to occur within the Geological Study Area and project site.



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SOURCE: Mapbox; Kern County; USGS; USDA

Onyx Ranch South Fork Valley Water Project

Figure 3.8-5

Geologic Hazards in the Project Area

ESA

Landslides

Slope failures, commonly referred to as landslides, include many phenomena that involve the downslope displacement and movement of material, either triggered by static (i.e., gravity) or dynamic (i.e., earthquake) forces. Slope stability can depend on several complex variables, including the geology, structure, and the amount of groundwater present, as well as external processes such as climate, topography, slope geometry, and human activity. Landslides can occur on slopes of 15 percent or less, but the probability is greater on steeper slopes that exhibit old landslide features such as scarps, slanted vegetation, and transverse ridges. Landslides typically occur within slide-prone geologic units that contain excessive amounts of water or are located on steep slopes, or where planes of weakness are parallel to the slope angle. Landslides are not to be confused with minor slope failures (slumps), which are usually limited to the topsoil zone and can occur on slopes composed of almost any geologic material. Landslides can cause damage to structures both above and below the slide mass. Structures above the slide area are typically damaged by undermining of foundations. Areas below a slide mass can be damaged by being overridden and crushed by the failed slope material.

Given the character of the bedrock and terrain in the mountainous portions of the Geological Study Area along the foothills, hazards associated with rock fall, as well as seismically induced landslides, have the potential to occur. The majority of the alluvial basins in the Geological Study Area are in gently sloping areas (less than 30 percent grade) and the majority of the steep slope areas (greater than 30 percent grade) are in areas of exposed granite and metamorphic bedrock (Thomas Harder & Co., 2015). Landslides are more likely to occur within and along steep slope areas. The majority of the project site, where the agricultural fields are located, are relatively flat and have low susceptibility to landslides. However, the areas along the foothills of the Sierra Nevada Mountains along the northern edges and southern portion of the project site are susceptible to landslides (see Figure 3.8-5).

Geologic Hazards

Subsidence

Subsidence is the gradual lowering of the land surface due to compaction of underlying materials. Subsidence can occur as a result of the extraction of groundwater or oil, which can cause subsurface clay layers to compress and lower the overlying land surface. No data regarding subsidence in the Geological Study Area was found. In areas underlain by bedrock or very shallow alluvium, the dense nature of the bedrock surrounding the alluviated valleys makes the potential for ground subsidence very low to negligible. Sandy and gravelly alluvial units, such as within the project site area, are typically less susceptible to subsidence because the sand and gravel grains provide a skeletal structure that is less susceptible to volume changes with the removal of water. However, given the fact that groundwater depths have historically fluctuated fairly dramatically, the possibility for subsidence to occur cannot be ruled out in the deep alleviated valleys, such as areas within the project site (Kern County, 2011b).

Erosion

Soil erosion is the detachment and movement of soil materials through natural processes or human activities. Natural processes include water, landslide, fire, flood, and wind. Man-made

causes include irresponsible grading and other construction practices, use of off-road vehicles, and agricultural production practices such as tillage. Specifically, tillage can break down soil aggregate and expose soil to the elements of water and wind, which can indirectly cause erosion. Tillage also can cause erosion directly by moving soil down a slope to lower areas of an agricultural field. In complex topographies, such as agricultural lands along foothills that have areas with greater slopes, tillage-induced erosion can ultimately remove surface soil from knolls and deposit soils in depressions (swales) at the bottom of slopes. Gravity causes soil to be moved downslope by agricultural machinery. Soil is thrown farther downslope when tilling in the downslope direction than is thrown uphill when tilling in the upslope direction (Sustainable Agriculture Research and Education, 2012). Erosion has potential to occur on the project site, especially when precipitation and/or wind combine with uncovered soil (Thomas Harder & Co., 2015).

Expansive Soils

Expansive soils contain significant amounts of clay particles that have the ability to give up water (shrink) or take on water (swell). When these soils shrink or swell, the change in volume can exert significant pressures on loads that are placed on them, such as loads resulting from building and structure foundations or underground utilities, and can result in structural distress and/or damage. Often, grading, site preparations, and backfill operations associated with subsurface structures can eliminate the potential for expansion. Linear extensibility and plasticity are also terms used to describe the shrink-swell potential of soils. If linear extensibility is greater than 3 percent (classified as Moderate potential), shrinking and swelling can cause damage to buildings, roads, and other structures (National Resources Conservation Service, 2017). As shown on Figure 3.8-5, there are areas of expansive soils throughout the project site.

Paleontological Setting

Society of Vertebrate Paleontology Guidelines

The Society of Vertebrate Paleontology (SVP) has established standard guidelines (SVP, 1995, 2010) that outline professional protocols and practices for conducting paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation (SVP, 2010). Most practicing professional vertebrate paleontologists adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most state regulatory agencies with paleontological resource-specific regulations accept and use the professional standards set forth by the SVP.

As defined by the SVP (2010), significant nonrenewable paleontological resources are:

> Fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils (SVP, 2010). This is determined by rock type, past history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources," the SVP defines four categories of paleontological sensitivity (potential) for rock units: high, low, undetermined, and no potential as follows:

- **High Potential.** Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources. Rocks units classified as having high potential for producing paleontological resources include, but are not limited to, sedimentary formations and some volcaniclastic formations (e. g., ashes or tephras), and some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils (e. g., middle Holocene and older, fine-grained fluvial sandstones, argillaceous and carbonate-rich paleosols, cross-bedded point bar sandstones, fine-grained marine sandstones, etc.).
- **Low Potential.** Reports in the paleontological literature or field surveys by a qualified professional paleontologist may allow determination that some rock units have low potential for yielding significant fossils. Such rock units will be poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule, e. g. basalt flows or Recent colluvium. Rock units with low potential typically will not require impact mitigation measures to protect fossils.
- **Undetermined Potential.** Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment are considered to have undetermined potential. Further study is necessary to determine if these rock units have high or low potential to contain significant paleontological resources. A field survey by a qualified professional paleontologist to specifically determine the paleontological resource potential of these rock units is required before a paleontological resource impact mitigation program can be developed. In cases where no subsurface data are available, paleontological potential can sometimes be determined by strategically located excavations into subsurface stratigraphy.
- **No Potential.** Some rock units have no potential to contain significant paleontological resources, for instance high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require no protection nor impact mitigation measures relative to paleontological resources.

For geologic units with high potential, full-time monitoring is generally recommended during any project-related ground disturbance. For geologic units with low potential, protection or salvage efforts would not generally be required. For geologic units with undetermined potential, field surveys by a qualified vertebrate paleontologist should be conducted to specifically determine the paleontologic potential of the rock units present within a study area.

Geologic Units & Paleontological Literature Review

As discussed in the Local Geology subsection above, the geologic units within the project site consist of granite, granodiorite, marble, and alluvium. The granite, granodiorite, and marble are igneous and metamorphic rocks and do not contain fossils. Note that the alluvium is composed of the geologic materials eroded and washed into the valley, which are the previously listed igneous and metamorphic rocks that would not contain fossils. In addition, the uppermost layers of the alluvium on the project site would be expected to be of Holocene age, and the shallower horizons are unlikely to be old enough to contain fossil remains, which the SVP defines as over 5,000 years old (SVP, 2010). The erosion of rocks from the surrounding mountains annually adds new sediments to the Kern River Valley, with the previously discussed flooding depositing new sediment in the valley. Over the last 5,000 years, this deposition has likely deposited tens of feet of sediment. The shallow alluvial alluvium would not contain significant paleontological resources. Finally, a paleontological records search for the project site was conducted by ESA at the Natural History Museum of Los Angeles County (LACM) records on August 1, 2019. The purpose of the museum records search was to: (1) determine whether any previously recorded fossil localities occur in the project site; (2) assess the potential for disturbance of these localities during construction; and (3) evaluate the paleontological sensitivity within the project site and vicinity. A. The results indicated no fossil localities are known to exist within the project site. The closest significant fossil vertebrate remains have been found approximately 40 to 50 miles away from the project site and produced fossil specimens of mammoth.

Cumulative Setting

As discussed in Section 3.2 Cumulative Impacts Methodology, the geographic area addressed in the discussion of cumulative impacts varies based on the environmental resource topic being analyzed. The geographic area of the analysis of the potential cumulative impacts of the proposed project and cumulative projects related to geology, soils, and paleontological resources is limited to the Geological Study Area as depicted in Figure 3.8-3 and described above. This is because impacts relative to geologic hazards, soil conditions, and paleontological resources are generally site-specific. For example, the effect of soil erosion would tend to be limited to the localized area of a project and could only be cumulative if soil erosion occurred as the result of two or more adjacent projects that spatially overlapped.

The timeframe during which the proposed project could contribute to cumulative geologic hazards includes the implementation and operational phases. For the proposed project, the operational phase is permanent. Similar to the geographic limitation discussed above, it should be noted that effects relative to geology, soils, and paleontological resources are generally time-specific. The effects related to geology, soils, and paleontological resource could only be cumulative if two or more geology, soils, or paleontological resource effects occurred at the same time.

3.8.2 Regulatory Framework

State of California

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting in structures for human occupancy. In accordance with this act, the State Geologist established regulatory zones, called "earthquake fault zones," around the surface traces of active faults and has published maps showing these zones. Within these zones, buildings for human occupancy cannot be constructed across the surface trace of active faults and must be set back from the fault (generally 50 feet). Each earthquake fault zone extends approximately 200 to 500 feet on either side of the mapped fault trace because many active faults are complex and consist of more than one branch that may experience ground surface rupture. The act does not apply to the project site since no active faults cross the project site.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code, Chapter 7.8, Section 2690-2699.6) was adopted to reduce the threat to public safety and to minimize the loss of life and property by identifying and mitigating ground failure caused by strong earthquakes, namely liquefaction and slope failure. The Seismic Hazards Mapping Act requires the State Geologist to delineate seismic hazard zones, also known as "zones of required investigation," where regional information suggests that the probability of a hazard requiring mitigation is adequate to warrant a site-specific investigation. The fact that a site lies outside a zone of required investigation does not necessarily mean that the site is free from seismic or other geologic hazards. Where a project, as defined by the act, has any structures for human occupancy, or any subdivision of land that contemplates the eventual construction of structures for human occupancy is within a zone of required investigation, lead agencies must apply minimum criteria for project approval. The most basic criteria for project approval are that the owner/developer adequately demonstrates that seismic hazards at the site have been evaluated in a geotechnical investigation, that appropriate mitigation measures have been proposed, and that the lead agency has independently reviewed the adequacy of the hazard evaluation and proposed mitigation measures. Both the geotechnical report and the independent review must be performed by a certified engineering geologist or registered civil engineer. The project site is not designated by the State as a Seismic Hazard Zone for liquefaction or landslides.

Public Resources Code Section 5097.5 and Section 30244

Paleontological resources are limited nonrenewable resources of scientific, cultural, and educational value that are afforded protection under State laws and regulations. State requirements for paleontological resource management are included in Public Resources Code Section 5097.5 and Section 30244. These statutes prohibit the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, define the removal of paleontological sites or features as a misdemeanor, and require reasonable mitigation of adverse impacts to paleontological resources from developments on public lands (state, county, city, district).

Local

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, policies, and implementation measures of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the Kern River Valley Specific Plan (KRVSP) area, which was addressed in the KRVSP adopted by Kern County in 2011. The KRVSP consists of elements that include goals and policies related to the geology and seismic hazards, and public safety within the Kern River Valley. The applicable element and the goals and polices are as follows:

Public Safety Element

The KRVSP Public Safety Element addresses natural and man-made hazards, including flooding and dam inundation, shallow groundwater, and seismic and geologic hazards, and ways to minimize their impact on the community. The Public Safety Element provides the following applicable goals and policies related to geology and soils:

Flooding and Dam Inundation

Goal 6.2.1: Prevent loss of life, reduce personal injuries and property damage, and minimize economic loss resulting from flood hazard, and dam inundation conditions.

Policy 6.2.2: Prohibit incompatible uses in primary floodway areas.

Policy 6.2.3: Minimize the alteration of primary floodways, stream channels, and natural protective barriers that accommodate or channel floodwaters.

Policy 6.2.6: Minimize the potential for damage from floods by protecting and restoring the natural water storage and conveyance functions of primary floodways giving preference wherever possible to nonstructural surface water management methods.

Shallow Groundwater

Goal 6.3.1: Ensure public health and safety risks associated with shallow groundwater have been minimized to the greatest extent possible as well as protect the groundwater quality.

Policy 6.3.2: This Plan's Physical and Environmental Constraints Map shall provide the most up to date information on the location of shallow groundwater areas. Subsequent shallow groundwater studies performed by a qualified hydrologist shall be incorporated within this map.

Seismic and Geologic Hazards

Goal 6.4.1: Minimize the potential damage to structures and loss of life that could result from geologic hazards.

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions

affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009).

The General Plan Land Use Map provides the following Physical and Environmental Constraints map codes related to geology and soils:

- Map Code 2.1 (Seismic Hazard) - Alquist-Priolo Special Study Zone and other recently active fault zones.
- Map Code 2.2 (Landslide) - Areas of down slope ground movement identified on the Kern County Seismic Hazard Atlas.
- Map Code 2.3 (Shallow Groundwater) - Groundwater within 15 feet of the land surface is delineated on the Kern County Seismic Hazard Atlas.
- Map Code 2.4 (Steep Slope) - Land with an average slope of 30 percent or steeper.

Safety Element

Safety Element of the County General Plan describes potential geologic hazards to the County's citizens including: fault rupture, ground shaking, ground failure, slope instability and landslides, land subsidence, clay soils, liquefaction, and erosion. According to the Safety Element, various areas within the project site would be located within locally-designated seismic hazard zones for liquefaction and landslides (see Figure 3.8-5). The applicable goals and policy, and implementation measures are as follows:

Geologic Hazards

Goal 1: Minimize injuries and loss of life and reduce property damage.

Goal 4: Create an awareness of the residents in Kern County through the dissemination of information about geologic, fire, and flood safety hazards.

Policy 4.2, 1: That the County's program of identification, mapping, and evaluating the geologic, fire, flood safety hazard areas, and significant concentrations of hydrogen sulfide in oil field areas, presently under way by various County departments, be continued.

Implementation Measure 4.2, F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by FEMA, shall be used as a source document for preparation of environmental documents pursuant to CEQA, evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats of public safety.

Implementation Measure 4.5, C: Develop and maintain maps, at an appropriate scale, showing the location of all geologic hazards, including active faults, Alquist-Priolo Earthquake Fault Zones, 100-year flood hazard boundary, the extent of projected dam failure inundation and time arcs, depth of inundation, land subsidence, slope failure and earthquake induced landslides, high groundwater, and liquefaction potential.

Land Use, Open Space, and Conservation Element

The Land Use, Open Space, and Conservation Element of the Kern County General Plan recognizes paleontological resources under General Provision 1.10.3: "Archeological, Paleontological, Cultural, and Historical Preservation" (Kern County, 2008). The applicable policy and implementation measure are as follows:

Archaeological, Paleontological, Cultural, and Historical Preservation

> **Policy 25:** The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.
>
> > **Implementation Measure M**: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

3.8.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to pages 3.8-1 and 3.8-2 above for a summary of the environmental issues and significance criteria included in this Draft EIR for the analysis of geology, soils, and paleontological resources. This Draft EIR assumes that the implementation of the proposed project would have a significant impact related to geology, soils, and paleontological resources if it would:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - 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 based on other substantial evidence of a known fault. Refer to Division of Mines and Geology Special Publication 42.
  - Strong seismic ground shaking.
  - Seismic-related ground failure, including liquefaction, lateral spreading, and landslides.
- Result in substantial soil erosion or the loss of topsoil.
- 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.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Methodology

This environmental analysis related to geology, soils, and paleontological resources is based on the following information: the definition of the proposed project provided above in Chapter 2, Project Description; a review of available documents (reports and maps) including a Paleontological Resources Assessment Report prepared by ESA for the proposed project (ESA, 2019); and the regulatory requirements summarized above in Section 3.8.2, Regulatory Framework. The analysis of the potential effects of the proposed project related to geology, soils, and paleontological resources is discussed in the Impact Analysis provided below.

Impact Analysis

Fault Rupture

Potential Impact GEO-1: Would the proposed project directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death, involving the rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo earthquake Fault Zone Map?

There are no known active earthquake faults, as delineated on the most recent Alquist-Priolo Earthquake Fault Zone maps, within the project site. Additionally, the proposed project would not result in the construction of new habitable structures or facilities on the project site. Therefore, the proposed project would not directly or indirectly cause adverse effects, including the risk of loss, injury, or death, on the project site due to rupture of a known earthquake fault.

As described above in Section 3.8.1 Environmental Setting, the Kern Canyon Fault, located within the westernmost portion of the Geological Study Area, passes through the Isabella Reservoir and Isabella Dam 9 miles west of the project site. The active Airport Lake Fault Zone and Little Lake Fault Zone are 22 miles east of the project site and experienced numerous earthquakes in 2019. A seismic event on these faults could trigger or lead to seismic hazards occurring within the project site; however, fault rupture would not occur on the project site due to the distance from these faults. Therefore, the proposed project would not directly or indirectly cause adverse effects, including the risk of loss, injury, or death, on the project site due to rupture on the Kern Canyon Fault, the Airport Lake Fault, and Little Lake Fault.

With implementation of the proposed project, surface water currently diverted for irrigation on the project site would remain in the South Fork of the Kern River and flow downstream to the Isabella Reservoir. The Kern Canyon Fault passes through Isabella Reservoir and Dam as part of the existing condition. The proposed project would not affect the existing risk of rupture of the Kern Canyon Fault. As part of the proposed project, Project Element 5 provides for the management of the surface water that would remain in the South Fork of the Kern River and flow into the Isabella Reservoir. The outflow from the Isabella Reservoir occurs via controlled releases at the Isabella Dam to the Lower Kern River. The outflow from and water levels in Isabella Reservoir are managed by the Kern River Watermaster in accordance with the Isabella Reservoir Water Control Manual. The proposed project would require coordination with the Kern River Watermaster, Kern River Interests, and USACE to facilitate the movement of the water associated with the water rights for the project site through the Isabella Dam, or alternatively, secure temporary storage of the water in the Isabella Reservoir for later release to the downstream RRBWSD service area. At no time would the water level in the Isabella Reservoir rise above the reservoir management levels associated with the Isabella Reservoir Water Control Manual. Therefore, the proposed project would not directly or indirectly cause adverse effects involving the rupture of the Kern Canyon Fault. In addition, due to the distance of the project site from the Airport Lake Fault Zone and Little Lake Fault Zone, the proposed project would have no effect on the existing risk of rupture of the Airport Lake Fault and Little Lake Fault. Therefore, the proposed project would not directly or indirectly cause adverse effects as a result of rupture of the Airport Lake Fault and Little Lake Fault.

The implementation of the proposed project would not cause potential substantial adverse effects, including the risk of loss, injury, or death, involving rupture of a known earthquake fault. Impacts would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- Implementation of the proposed project would not locate any new habitable structures or facilities on an active fault and would not include actions that would trigger surface rupture or fault movement. There would be no change in the potential risk of loss, injury, or death involving rupture of a known earthquake fault due to implementation and operation of the proposed project. Impacts would be less than significant.
- Implementation of the proposed project would not result in a change to the water surface elevation or volume of water stored at Isabella Reservoir in accordance with the Water Control Manual. There would be no change in the potential risk of loss, injury, or death involving rupture of the Kern Canyon fault that passes through Isabella Reservoir and Dam due to implementation and operation of the proposed project. Impacts would be less than significant.

Seismic Shaking

Potential Impact GEO-2: Would the proposed project directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death, involving strong seismic ground shaking?

As described above in Section 3.8.1 Environmental Setting, the Kern Canyon Fault, located within the westernmost portion of the Geological Study Area, passes through the Isabella Reservoir and Dam 9 miles west of the project site. The active Airport Lake Fault Zone and Little Lake Fault Zone are 22 miles east of the project site and have experienced numerous earthquakes in 2019. A seismic event on these faults, as well as others discussed in Section 3.8.1 above, could result in strong seismic ground shaking within the project site.

The proposed project would not result in the expansion of the footprint of the existing irrigation ditches or changes to the water diversion structures on the project site. The proposed project would not introduce additional people or new habitable structures or facilities on the project site. Therefore, the implementation of the proposed project would not cause potential adverse effects, including the risk of loss, injury, or death, involving strong ground shaking on the project site. The impacts would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- Implementation of the proposed project would not introduce additional people or new habitable structures or facilities on the project site. Therefore, implementation of the proposed project would not cause potential adverse effects relative to seismic shaking, including the risk of loss, injury, or death. Impacts would be less than significant.

Seismic-Related Ground Failures

Potential Impact GEO-3: Would the proposed project directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death, involving seismic-related ground failure, including liquefaction, lateral spreading, and landslides strong seismic ground shaking?

As described above in Section 3.8.1 Environmental Setting, some portions of the Geological Study Area may be susceptible to seismic-related landslides, liquefaction, and lateral spreading. A seismic event could trigger or lead to these hazards occurring on the project site.

Liquefaction and Lateral Spreading

Liquefaction and lateral spreading of soil units could be triggered by a seismic event that shakes sandy soils within an area with high groundwater (i.e., depth to groundwater of less than 50 feet). The project site is in an area of sandy soils and the depth to groundwater is relatively shallow in areas close to the South Fork of the Kern River. As discussed in Chapter 2.0 Project Description, surface water that would no longer be diverted for irrigation use on the Onyx Ranch and the Smith Ranch as a result of the proposed project and would continue to flow downstream in the South Fork of the Kern River. As discussed in Section 3.11 Hydrology and Water Quality, localized groundwater levels on and adjacent to the project site would experience increases of up to about 2.9 feet and decreases up to about 15.6 feet, depending on season, location, and groundwater conditions. This decrease in groundwater levels would reduce the potential for liquefaction and lateral spreading because a smaller amount of shallow soils would be saturated. Groundwater levels in areas closer to and adjacent to Isabella Reservoir would increase due to the increase of water in the South Fork of the Kern River percolating into soil and alluvium and into the underlying aquifer. However, the water level increases would be on the order of one to two feet. This change would be well within the existing seasonal fluctuations that are 10 to 20 feet. In addition, much of the area along the South Fork of the Kern River closer to Isabella Reservoir is within the River's floodplain and riparian forest area and does not have buildings or structures that could be damaged. Therefore, the implementation of the proposed project would not result in changes to the project site or the construction of new habitable structures or facilities that could cause potential substantial adverse effects, including the risk of loss, injury, or death, involving seismic-induced liquefaction and lateral spreading hazards. Impacts would be less than significant.

Landslides

Landslides could be triggered by a seismic event when shaking from an earthquake causes previous landslides to reactivate or triggers new landslides along planes of weakness. The majority of the project site, where the agricultural fields are located, are relatively flat with negligible susceptibility to landslides. However, the areas located next to the mountains along the northern and southern sides of the project site may be susceptible to landslides (see Figure 3.8-5). The proposed project would change the amount of irrigation on the agricultural fields and pastures, leaving more water in the South Fork of the Kern River downstream of the project site. The proposed project does not include activities or elements that would affect the portions of the project site that are close to the mountains that are susceptible to landslides. The proposed project would not change the existing potential for seismic events to trigger landslides, such as grading the toe or head of a landslide-susceptible area, or adding irrigation water at the head of a landslide-susceptible area. The proposed project would not cause potential substantial adverse effects, including the risk of loss, injury, or death, involving seismic-induced landslides. Impacts would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The proposed project would not construct any new structures that would expose people or property to seismic-induced ground failures including landslides, liquefaction, or lateral spreading. Impacts would be less than significant.
- The proposed project would not change existing conditions for areas within the project site that have potential for landslide to occur. Impacts would be less than significant.
- The proposed project would not include actions that could trigger landslides, liquefaction, or lateral spreading. Impacts would be less than significant.

Soil Erosion

Potential Impact GEO-4: Would the proposed project result in substantial soil erosion or loss of topsoil?

With implementation of the proposed project, the project site would continue to be actively used for agriculture and cattle grazing. The proposed project would convert the existing irrigated fields and pastures to non-irrigated fields and pastures and, consistent with the existing conditions, would use similar farm equipment and techniques for seeding and managing the fields. The proposed project would maintain ground cover on the existing fields, which would continue to stabilize soils and prevent soil erosion during and after the transition to non-irrigated fields and pastures. In addition, the transition to non-irrigated fields and pastures would result in reduced

agricultural activities such as tilling, which would reduce the exposure of bare or disturbed soil to erosion from wind and rain.

After the proposed transition to non-irrigated fields and pastures, the project site would generally be drier. As described in Table 2-5 in Chapter 2 Project Description, five ditches (Smith Ditch, Mack Ditch, Landers Ditch, Nicoll Ditch, and Hillside Ditch) would experience a reduction in run time and/or a reduction in flow rate. One ditch, the Pruitt Ditch, would cease to be used and would become dry except during a rain event. Therefore, the proposed project has the potential to expose the soils in non-irrigated fields and unused ditches to soil erosion from runoff and wind and/or result in the loss of topsoil.

As stated in Chapter 2 Project Description, during the implementation and on-going operational activities for the proposed project, potential fugitive dust emissions would be suppressed per the Eastern Kern Air Pollution Control District (EKAPCD) Rule 402: Fugitive Dust. As explained in Section 3.5 Air Quality, Rule 402 applies to specified bulk storage, earthmoving, construction and demolition, and man-made conditions resulting in wind erosion, and includes the following requirements:

- A person shall not cause or allow emissions of fugitive dust from any active operation to remain visible in the atmosphere beyond the property line of the emission source.
- A person shall utilize one or more Reasonably Available Control Measures (RACM) or Bulk Material Control Measures (BMCM) to minimize fugitive dust emissions from each source type that is part of any active operation, including unpaved roadways.
- No person shall conduct a large operation without filing for and obtaining an approved fugitive dust emission control plan. Large operation is defined as "Any construction activity on any site involving 10 or more contiguous acres of disturbed surface area, or any earthmoving activity exceeding a daily volume of 10,000 cubic yards, or relocating more than 2,500 cubic yards per day of bulk materials at least three days per year."
- EKAPCD may require on-site PM_{10} monitoring for any large operation that causes downwind PM_{10} ambient concentrations to increase more than 50 micrograms per cubic meter above upwind concentrations as determined by utilizing high-volume particulate matter samplers, or other EPA-approved equivalent method(s).

Additionally, as described in Chapter 2 Project Description, above, the proposed project would be compatible with the KRVSP Conservation Element Air Quality Policies 5.5.1 through 5.5.3, which require enforcement of implementation measures to suppress fugitive dust. The proposed project would also occur in compliance with KRVSP Conservation Element Air Quality Implementation Measure 5.5-1 that requires fugitive dust control during active agriculture activities, water ditch maintenance, harvesting activities, and maintenance of fallow land. If water would be required to manage dust and achieve dust suppression on the project site, the RRBWSD would use either groundwater or a portion of the diverted flow consistent with the proposed project.

As surface water diversions to the Onyx Ranch and the Smith Ranch are reduced or ceased and the water remains in the South Fork of the Kern River, there is the potential for the finer soils along the South Fork of the Kern River within the project site and on the downstream properties

to experience soil erosion. However, as described in Section 3.11 Hydrology and Water Quality of this Draft EIR, the additional project-related flow would be within the normal range of variability that typically occur in the South Fork of the Kern River and the Lower Kern River. (See Section 3.11 Hydrology and Water Quality of this Draft EIR for additional information on the change in the flow rates and hydrology in the Kern River downstream of the project site due to the implementation of the proposed project.) Therefore, since the increase in flows would not significantly alter the flow volume of the surface water in the South Fork of the Kern River and Lower Kern River, the proposed project would not result in increased soil erosion compared to the existing conditions. Impacts would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The proposed project would maintain vegetative cover on the fields and pastures on the project site, which would stabilize soils and prevent erosion and loss of topsoil. In addition, EKAPCD Rule 402 and KRVSP Conservation Element Air Quality Policies and Implementation Measures would require implementation of fugitive dust control on the project site. Impacts related to soil erosion and loss of topsoil would be less than significant.
- The proposed project would result in an increase in flow in the South Fork of the Kern River and Lower Kern River, adjacent to and downstream of the project site. Since the increase in flows would not significantly alter the flow volume of the surface water in the South Fork of the Kern River and Lower Kern River, the proposed project would not result in increased soil erosion compared to the existing conditions. Impacts related to soil erosion would be less than significant.

Geologic Instability

Potential Impact GEO-5: Would the proposed project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

As described above in Section 3.8.1 Environmental Setting, some portions of the Geological Study Area may be susceptible to landslides, subsidence, or collapse. Changes to groundwater levels could trigger or lead to these hazards occurring within the project site.

Landslides

As described above in Section 3.8.1 Environmental Setting, the project site is primarily underlain by bedrock or sandy to gravelly alluvial soils. As stated above, the majority of the project site, where the agricultural fields are located, are relatively flat and have a negligible susceptibility to landslides. The areas along the foothills of the Sierra Nevada Mountains along the northern and southern edges of the project site may be susceptible to landslides (see Figure 3.8-5). The

proposed project would affect the agricultural fields and the channel and floodplain of the South Fork of the Kern River in the areas of the project site that are flat, transitioning to non-irrigated fields and pastures and generally resulting in lower groundwater levels (see Figures 3.11-5 and 3.11-6 in Section 3.11 Hydrology and Water Quality). The proposed project would not affect groundwater levels in the foothill areas of the project site where the landslide-susceptible areas are located. The proposed project would not result in any application of irrigation water in the foothill areas of the project site that could disturb a landslide-susceptible area. The proposed project does not include activities or elements that would affect the portions of the project site that are in the foothills and that are susceptible to landslides. The proposed project would not induce landslides or affect the existing potential for landslides to occur in the foothill portions of the project site. Impacts would be less than significant.

Subsidence and Collapse

Subsidence can occur as a result of the extraction of groundwater, which can cause subsurface clay layers to compress and lower the overlying land surface. The alluvial units beneath the project site are mostly composed of sand and gravel, which provides a skeletal structure less susceptible to subsidence or collapse than clay units. In addition, as discussed in Section 3.11 Hydrology and Water Quality of this Draft EIR, the proposed project is predicted to result in a net increase of groundwater in storage across the Hydrological Study Area as compared to the existing conditions. The proposed project would result in a beneficial effect by reducing the loss of groundwater storage in the aquifer by approximately 18,224 acre-feet over a 13-year time period across the Hydrological Study Area. However, as discussed in the Model Results in Section 3.11 Hydrology and Water Quality of this Draft EIR, groundwater levels are predicted to temporarily increase in some portions of the Hydrological Study Area and decrease in others, depending on the groundwater conditions (high versus low). Localized groundwater levels on and adjacent to the project site would experience increases of up to about 2.9 feet and decreases up to about 15.6 feet, depending on the season, location, and precipitation conditions. Groundwater levels in areas closer to and adjacent to Isabella Reservoir would temporarily increase due to the increased amount of water in the South Fork of the Kern River percolating into the soil and alluvium and into the underlying aquifer. As discussed in Section 3.11 Hydrology and Water Quality, these fluctuations in groundwater levels are well within the existing local seasonal fluctuations on the order of 10 to 20 feet and thus are not anticipated to result in subsidence or collapse of soil units within the Hydrological Study Area. Therefore, based on geologic characteristics of the project site and the small fluctuations in groundwater levels that would result from the proposed project, subsidence would not be anticipated. Impacts would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The proposed project does not include activities or elements that would affect the portions of the project site that are in the foothills and that are susceptible to landslides. The proposed project would not induce landslides or affect the existing potential for landslides to occur in the foothill portions of the project site. Impacts would be less than significant.
- The proposed project would result in negligible fluctuations in groundwater levels in alluvial soils units that are less susceptible to subsidence. As such, the potential impacts to subsidence would be less than significant.
- The proposed project would not include actions that could trigger landslides, subsidence, or collapse. Impacts would be less than significant.

Paleontological Resources

Potential Impact GEO-6: Would the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Paleontological Resources

As described in Section 3.8.1 Environmental Setting, the project site is located on Quaternary Alluvium, a category of surficial sediments with low-to-high paleontological resource sensitivity that can preserve fossils in deeper layers. The proposed shallow, low-volume solar-powered wells would be 20 to 50 feet deep and could reach older deeper alluvial sediments. Therefore, implementation of the solar wells is the only project-related activity that could impact significant paleontological resources. As discussed in Section 3.8.1 above, the review of the scientific literature and geologic mapping, as well as the records search from LACM, were used to assign paleontological sensitivities following the guidelines of the SVP (1995, 2010) to the geologic units present at the surface and subsurface of the proposed project site.

It is assumed that drilling to a depth of 20 to 50 feet would be required for the proposed shallow, low-volume wells provided as a part of the proposed project. As stated above, the exact depth at which the alluvium becomes old enough to preserve fossils (i.e., >5,000 years old) is unknown at the proposed project site. Recent discoveries in California have shown that Pleistocene soils (paleosols) are sometimes preserved beneath surface sediments, and these can produce vertebrate fossils, especially microvertebrate fossils. Most instances of these have been found in Riverside and San Bernardino Counties (Raum et al., 2014; Stewart and Hakel, 2016, 2017; Stewart et al., 2012). A more recent discovery has shown an instance of this in Kern County (Stewart and Hakel, 2019). Fossil soils can be developed on river terraces (Stewart et al., 2012) and it is assumed that terraces of the South Fork of the Kern River are present on the proposed project site. Even if fossil soils are not found in the subsurface, the Quaternary Alluvium could produce microvertebrate fossils.

The surficial sediments of the proposed project identified as younger Quaternary alluvium are assigned low paleontological sensitivity, as they are too young to preserve fossils. However, the Late Holocene – Pleistocene older alluvium, present at an undetermined depth in the subsurface of the proposed project, has high paleontological sensitivity. The proposed project would

develop, on an as needed basis, up to 12 shallow, low volume wells powered by solar facilities. Each well location would have a 2,000 to 4,000 gallon aboveground tank for water storage for use during weather conditions when the solar power for well pumping does not operate. The water tank would be on the ground and connect by an aboveground pipe to a livestock trough. The wells would be installed adjacent to an existing dirt road or in an already disturbed area on the project site. The shallow, low-volume wells would be 6 inches in diameter. Depending on the depth of each well (20 to 50 feet in depth), the drilling activity could have the potential to result in a significant impact to paleontological resources. Incorporation of Mitigation Measure GEO-1 would reduce the potential impacts to paleontological resources to a less than significant level.

Unique Geologic Features

The project site is located within the southern portion of the Sierra Nevada Mountains, along the South Fork of the Kern River, and adjacent to landforms that form the base of the Sierra Nevada Mountains. The project site is located in the alluvial area of the South Fork of the Kern River. The KRVSP states that there are no geologic features in the Specific Plan Area, which includes the project site, that have been designated as unique (Kern County, 2011b). Therefore, no impacts to unique geological features would occur.

Mitigation Measures

The following mitigation measures would reduce the potential impacts to unique paleontological resources on the project site to a less than significant level:

> **GEO-1:** Prior to the start of drilling activities for each new shallow, low-volume well on the project site that would occur in an area with older alluvium, a Qualified Paleontologist meeting the Society of Vertebrate Paleontology (SVP) Standards (Qualified Paleontologist) shall be retained by the RRBWSD. The Qualified Paleontologist shall be responsible for oversight of: monitoring activities during well drilling activities; sediment sampling, and collection, identification; and final disposition of identified fossils. The steps to be taken are as follows:
>
> - The paleontological resources monitoring shall be conducted for all ground-disturbing activities for well drilling at depths greater than 5 feet. The monitoring shall be performed by a qualified paleontological monitor under the direction of the Qualified Paleontologist. The monitor shall recover sediment samples from each 5-foot interval and prepare a daily log detailing the type of drilling activities, soils observed at various depths, and any discoveries recovered.
> - The sediment samples recovered from each 5-foot interval shall be screened onsite or elsewhere and the resulting concentrate shall be sorted using a binocular microscope. Any significant fossils collected shall be prepared to the point of identification and curated into an accredited repository with retrievable storage. If caliche materials are recovered from the sediment samples, a radiocarbon date shall be obtained.
> - The Qualified Paleontologist shall prepare a final monitoring and mitigation report for submittal to the RRBWSD in order to document the results of the monitoring effort and any discoveries. If there are significant discoveries, fossil locality information and final disposition shall be included with the final report that will be submitted to the appropriate repository and the RRBWSD.

Significance Determination

Less Than Significant Impact with Mitigation

Impact Summary

- The proposed project would install a maximum of up to 12 shallow, low-volume wells powered by solar facilities on an as needed basis. Depending on the depth of each well, the drilling activity could have the potential to result in a significant impact to paleontological resources. Impacts to paleontological resources would be reduced to a less than significant level with implementation of Mitigation Measure GEO-1.
- The proposed project would not be located in an area with unique geologic resources. No impact to unique geologic landforms would occur.

Potential Cumulative Impacts

Cumulative impacts associated with geology, soils, and paleontological resources could occur if two or more geology and soil hazards and/or impacts to paleontological resources occurred at the same time in the immediate vicinity of each other. The cumulative projects to be considered in the analysis of cumulative impacts are listed in Table 3-1 and shown on Figure 3-1 in Section 3.0 Environmental Setting, Impacts, and Mitigation Measures. The only cumulative projects that could have impacts to geology, soils, and paleontological resources and that, combined with the proposed project, and could result in cumulatively considerable impacts, are Cumulative Project C, Upper Taylor Meadow Gully Repair Project and Project D, Weldon Regional Water District. All other projects are located too far away to result in cumulatively considerable impacts.

As described above, implementation of the proposed project would not substantially disturb soils or result in a significant increase in erosion or the loss of topsoil. In addition, the project site has areas with potentially unstable soils; however, the proposed project would not include any improvements or physical changes that would significantly increase the potential for unstable soil conditions or cause landslides, subsidence or collapse or liquefaction and lateral spreading. Construction of the proposed project has the potential to impact paleontological resources, but implementation of Mitigation Measure GEO-1 would reduce impacts to paleontological resources to less than significant.

Cumulative Project C would be subject to similar seismic, erosional, and unstable geologic soils hazards as the proposed project. Cumulative Project C is located about 5 miles north of the project site and the path of drainage from the cumulative site to the project site would be even farther. Impacts associated with geology and soils are site-specific and only affect the site itself and the immediately adjacent areas. Given the distance of Cumulative Project C from the proposed project site, the impacts associated with geology and soils during a seismic event for Cumulative Project C and the proposed project would not combine to create cumulatively considerable impacts.

As described above, the potential significant impacts of the proposed project related to paleontological resources during construction activities for the shallow, low volume wells would

be reduced to a less than significant level with implementation of Mitigation Measure GEO-1. Similar to the proposed project, Cumulative Project C, Upper Taylor Meadow Gully Repair Project, is located within the Sierra Nevada Mountains. The geologic units would be igneous and possibly metamorphic, none of which would contain paleontological resources. In addition, the sediments at Upper Taylor Meadow would be derived from the surrounding igneous rocks, none of which would contain paleontological resources. Finally, the Gully Repair Project would rework shallow sediments that would be less than 5,000 years old and would be too young to contain significant paleontological resources. Therefore, Cumulative Project C and the proposed project would not combine to create cumulatively considerable impacts.

Cumulative Project D also would be subject to similar seismic, erosional, and unstable geologic soils hazards as the proposed project, given its location adjacent to the project site in the unincorporated community of Weldon in the South Fork Valley. Cumulative Project D would be required to implement best management practices to mitigate soil erosion and potential adverse effects associated with fault rupture and ground shaking during design and construction of the proposed water infrastructure components (Tom Dodson & Associates, 2020). In addition, undisturbed areas within the boundaries of the proposed Water District service area are determined to have low to high subsurface archaeological sensitivity, and therefore mitigation for unanticipated discoveries of paleontological resources would be required to reduce impacts to less than significant levels (Tom Dodson & Associates, 2020). With implementation of such mitigation, Cumulative Project D and the proposed project would not combine to create cumulatively considerable impacts.

Mitigation Measures

Implementation of Mitigation Measure GEO-1.

Significance Determination

Less Than Significant Impact with Mitigation

Impact Summary

- Neither the proposed project, nor the cumulative projects, would have significant impacts to existing geology or soils. Potential impacts of the proposed project related to paleontological resources during construction activities for the shallow, low volume wells would be reduced to a less than significant level with implementation of Mitigation Measure GEO-1. As such, when considered together with the cumulative projects, the proposed project would not result in cumulatively considerable impacts.

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3.9 Greenhouse Gas Emissions

This section addresses the potential impacts related to greenhouse gas (GHG) emissions associated with implementation of the proposed project. This section includes: a description of the existing GHG conditions in the air basin within which the project site is located; a summary of applicable regulations related to GHGs; and an evaluation of the potential for the proposed project to result in impacts to GHG emissions. In addition, an evaluation of the potential cumulative impacts is provided.

The NOP and Initial Study determined that the proposed project would have a less than significant impact related to GHG emissions for the following issues:

- The generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

However, in considering public comments received on the NOP and Initial Study (see Appendix A, Public Participation Process), these issues related to GHG emissions have been added back to the scope of the Draft EIR and are evaluated in this section.

3.9.1 Environmental Setting

Greenhouse Gases

GHGs are those compounds in the earth's atmosphere that play a critical role in determining temperature near the earth's surface. More specifically, these gases allow high-frequency shortwave solar radiation to enter the earth's atmosphere, but retain some of the low frequency infrared energy which is radiated back from the earth towards space, resulting in a warming of the atmosphere. Not all GHGs possess the same ability to induce climate change; as a result, GHG contributions are commonly quantified in the units of carbon dioxide equivalents (CO_2e). Mass emissions are calculated by converting pollutant specific emissions to CO_2e emissions by applying the proper global warming potential (GWP) value. The GWP measures how much energy the emission of 1 ton of a gas will absorb relative to the emission of 1 ton of CO_2. CO_2 as the reference gas has a GWP of 1. CH_4 has a GWP of 25 which means it absorbs 25 times the amount of energy per ton than CO_2. These GWP ratios are available from the Intergovernmental Panel on Climate Change (IPCC). By applying the GWP ratios, CO_2e emissions can be tabulated in metric tons per year. Typically, the GWP ratio corresponding to the warming potential of carbon dioxide (CO_2) over a 100-year period is used as a baseline. The State of California uses the GWPs from the IPCC Fourth Assessment Report (AR4) in the official State GHG emissions inventory (IPCC, 2007). Prior to the 2014 reporting year, the State used GWPs from the IPCC Second Assessment Report (SAR). Compounds that are regulated as GHGs are discussed below.

- Carbon Dioxide (CO_2). CO_2 is the most abundant GHG in the atmosphere and is primarily generated from fossil fuel combustion from stationary and mobile sources. CO_2 is the reference gas (GWP of 1) for determining the GWPs of other GHGs.
- Methane (CH_4). CH_4 is emitted from biogenic sources (i.e., resulting from the activity of living organisms), incomplete combustion in forest fires, landfills, manure management, and leaks in natural gas pipelines. The GWP of CH_4 is 21 in the IPCC SAR, and 25 in the IPCC AR4.
- Nitrous Oxide (N_2O). N_2O produced by human-related sources including agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuel, adipic acid production, and nitric acid production. The GWP of N_2O is 310 in the IPCC SAR and 298 in the IPCC AR4.
- Hydrofluorocarbons (HFCs). HFCs are fluorinated compounds consisting of hydrogen, carbon, and fluorine. They are typically used as refrigerants in both stationary refrigeration and mobile air conditioning systems. The GWPs of HFCs ranges from 140 for HFC-152a to 11,700 for HFC-23 in the IPCC SAR and 124 for HFC-152a to 14,800 for HFC-23 in the IPCC AR4.
- Perfluorocarbons (PFCs). PFCs are fluorinated compounds consisting of carbon and fluorine. They are primarily created as a byproduct of aluminum production and semiconductor manufacturing. The GWPs of PFCs range from 6,500 to 9,200 in the IPCC SAR and 7,390 to 17,700 in the IPCC AR4.
- Sulfur Hexafluoride (SF_6). SF_6 is a fluorinated compound consisting of sulfur and fluoride. It is a colorless, odorless, nontoxic, nonflammable gas. It is most commonly used as an electrical insulator in high voltage equipment that transmits and distributes electricity. SF_6 has a GWP of 23,900 in the IPCC SAR and 22,800 in the IPCC AR4.

Effects of Climate Change

The scientific community's understanding of the fundamental processes responsible for global climate change has improved over the past decade, and its predictive capabilities are advancing. However, there remain significant scientific uncertainties in, for example, predictions of local effects of climate change, occurrence, frequency, and magnitude of extreme weather events, effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of the Earth's climate system and inability to accurately model it, the uncertainty surrounding climate change may never be completely eliminated. Nonetheless, the IPCC's *Fifth Assessment Report, Summary for Policy Makers* states that, "it is *extremely likely* that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcings together" (IPCC, 2014). The National Academy of Sciences concluded that 97 to 98 percent of the climate researchers most actively publishing in the field support the tenets of the IPCC in that climate change is very likely caused by human (i.e., anthropogenic) activity (Anderegg, 2010).

According to CARB, the potential impacts in California due to global climate change may include: loss in snow pack; sea level rise; more extreme heat days per year; more high ozone days; more large forest fires; more drought years; increased erosion of California's coastlines and

sea water intrusion into the Sacramento and San Joaquin Deltas and associated levee systems; and increased pest infestation (CalEPA, 2006). Below is a summary of some of the potential effects that could be experienced as a result of global warming and climate change.

Temperature

In 2009, the California Natural Resources Agency (CNRA) published the *California Climate Adaptation Strategy* as a response to the Governor's Executive Order S-13-2008 (CNRA, 2009). In 2014, CNRA rebranded the first update of the 2009 adaptation strategy as the *Safeguarding California Plan*. In 2016, the CNRA released *Safeguarding California: Implementation Action Plans* in accordance with Executive Order B-30-15 (CNRA, 2014). *Safeguarding California* lists specific recommendations for State and local agencies to best adapt to the anticipated risks posed by a changing climate. In accordance with the 2009 *California Climate Adaptation Strategy*, in 2011, the California Energy Commission (CEC) developed the Cal-Adapt website on potential future climate change scenarios and impacts that would be beneficial for local decision makers (CEC, 2019). The data on the Cal-Adapt website are comprised of the average values (i.e., temperature, sea level rise, snowpack) from a variety of scenarios and models and are meant to illustrate how the climate may change based on a variety of different potential social and economic factors. According to the Cal-Adapt website, the portion of the Kern County, in which the project site is located, could result in an average increase in temperature of approximately 8 to 13 percent (approximately 6.2 to 9.7°F) by 2070-2099, compared to the baseline 1961-1990 period (CEC, 2019).

Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California and make it more difficult for the State to achieve air quality standards. Climate change may increase the concentration of ground-level ozone in particular, which can cause breathing problems, aggravate lung diseases such as asthma, emphysema, chronic bronchitis, and cause chronic obstructive pulmonary disease (COPD), but the magnitude of the effect, and therefore, its indirect effects, are uncertain. Emissions from wildfires can lead to excessive levels of particulate matter, ozone, and volatile organic compounds (Kenward, 2013). Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the State (CalEPA, 2013).

Air quality in Kern County is expected to worsen with increased climate change. Kern County has been designated as a non-attainment area for ozone and PM10 and increased climate change could exacerbate concentrations of these pollutants. In 2018, Riverside County only exceeded the federal ozone standard for 96 days and with increased climate changes, the number of non-attainment days is likely to trend upward.

Water Supply

Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. Studies have found that, "Considerable uncertainty about precise impacts of climate change on California hydrology and water resources will remain until we have more

precise and consistent information about how precipitation patterns, timing, and intensity will change" (Pacific Institute 2003). For example, some studies identify little change in total annual precipitation in projections for California while others show significantly more precipitation. Warmer, wetter winters would increase the amount of runoff available for groundwater recharge; however, this additional runoff would occur at a time when some groundwater basins are either being recharged at their maximum capacity or are already full. Conversely, reductions in spring runoff and higher evapotranspiration because of higher temperatures could reduce the amount of water available for recharge (Pacific Institute, 2003).

The California Department of Water Resources' *Climate Change Report, Progress on Incorporating Climate Change into Planning and Management of California's Water Resources* describes the effects of climate change on the State Water Project, the Central Valley Project, and the Sacramento-San Joaquin Delta, and concludes that "climate change will likely have a significant effect on California's future water resources…[and] future water demand" (CDWR, 2006). The report also states that "much uncertainty about future water demand [remains], especially [for] those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain." The report also states that the relationship between climate change and its potential effect on water demand is not well understood, but "[i]t is unlikely that this level of uncertainty will diminish significantly in the foreseeable future." Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows (CDWR, 2006). The Intergovernmental Panel on Climate Change (IPCC) states that "Changes in the global water cycle in response to the warming over the 21st century will not be uniform. The contrast in precipitation between wet and dry regions and between wet and dry seasons will increase, although there may be regional exceptions" (IPCC, 2013).

Agriculture

California's agricultural industry represents 11.3 percent of total U.S. agricultural revenue. Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, a changing climate presents significant risks to agriculture due to "potential changes to water quality and availability; changing precipitation patterns; extreme weather events including drought, severe storms, and floods; heat stress; decreased chill hours; shifts in pollinator lifecycles; increased risks from weeds, pest and disease; and disruptions to the transportation and energy infrastructure supporting agricultural production" (CNRA, 2014).

Ecosystem and Wildlife

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. Increased concentrations of GHGs are likely to accelerate the rate of climate change. Scientists expect that the average global surface temperature could rise by 2-11.5°F (1.1-6.4°C) by 2100, with significant regional variation (NRC, 2010). Soil moisture is likely to decline in many regions, and intense rainstorms are likely to become more frequent. Sea level could rise as much as 2 feet along most of the U. S. coastline.

Rising temperatures could have four major impacts on plants and animals: (1) timing of ecological events; (2) geographic range; (3) species' composition within communities; and (4) ecosystem processes such as carbon cycling and storage (Parmesan, 2004).

Wildfires

Wildfire models have been developed for California and used to simulate individual large fire events under a wide range of future climate, population, and development scenarios. In California, hotter and dryer conditions expected with climate change are predicted to make forests more susceptible to extreme wildfires. Wildfire simulations conducted for California's Fourth Climate Change Assessment found that, under a high GHG emissions scenario, the frequency of extreme wildfires burning over approximately 25,000 acres would increase by nearly 50 percent, and the average area burned statewide each year would increase by 77 percent, by the year 2100 (Westerling, 2018).

Existing Greenhouse Gas Conditions

Global Emissions

In 2010, worldwide human-made emissions of GHGs were approximately 49,000 million metric tons (MMT) of CO_2e annually including ongoing emissions from industrial and agricultural sources and emissions from land use changes (e.g., deforestation) (IPCC, 2014). Emissions of CO_2 from fossil fuel use and industrial processes account for 65 percent of the total while CO_2 emissions from all sources accounts for 76 percent of the total. Methane emissions account for 16 percent and N_2O emissions for 6.2 percent (IPCC, 2014). In 2017, the U.S. was the world's second largest emitter of carbon dioxide at 5,110 $MMTCO_2e$ (China was the largest emitter of carbon dioxide at 10,920 $MMTCO_2e$) (PBL, 2018).

U.S. Emissions

In 2017, the U.S. emitted about 6,457 MMT of CO_2e, 76.1 percent of which came from fossil fuel combustion. Of the major sectors nationwide, transportation accounts for the highest amount of GHG emissions (approximately 29 percent), followed by electricity (28 percent), industry (22 percent), agriculture (9 percent), commercial buildings (6 percent), and residential buildings (5 percent). Between 1990 and 2017, total U.S. GHG emissions rose by 1.3 percent, but emissions have generally decreased since peaking in 2005. Since 1990, U.S. emissions have increased at an average annual rate of 0.4 percent (USEPA, 2019).

California Greenhouse Gas Emissions Inventory

CARB compiles GHG inventories for the State. Based on the calendar year 2017 GHG inventory data (i.e., the latest year for which data are available from CARB) prepared by CARB in 2019, California emitted 429.1 million metric tons of CO_2e ($MMTCO_2e$) including emissions resulting from imported electrical power (CARB, 2019). Between 1990 and 2017, the population of California grew by approximately 9.7 million (from 29.8 to 39.5 million) (CDOF, 2019). This represents an increase of approximately 33 percent from 1990 population levels. In addition, the California economy, measured as gross State product, grew from $773 billion in 1990 to

$2.81 trillion in 2017 representing an increase of over three times the 1990 gross State product in today's dollars (CDOF, 2019). Despite the population and economic growth, CARB's 2017 statewide inventory indicated that California's net GHG emissions in 2017 were below 1990 levels, which is the 2020 GHG reduction target codified in California Health and Safety Code (HSC), Division 25.5, also known as The Global Warming Solutions Act of 2006 (AB 32). Table 3.9-1 identifies and quantifies statewide anthropogenic GHG emissions and sinks (e.g., carbon sequestration due to forest growth) in 1990 and 2017. As shown in Table 3.9-1, the transportation sector is the largest contributor to statewide GHG emissions at approximately 40 percent in 2017.

TABLE 3.9-1
STATE OF CALIFORNIA GREENHOUSE GAS EMISSIONS

Category	Total 1990 Emissions Using IPCC SAR ($MMTCO_2e$)	Percent of Total 1990 Emissions	Total 2017 Emissions using IPCC AR4 ($MMTCO_2e$)	Percent of Total 2017 Emissions
Transportation	150.7	35%	169.9	40%
Electric Power	110.6	26%	62.4	15%
Commercial	14.4	3%	15.1	4%
Residential	29.7	7%	26.0	6%
Industrial	103.0	24%	89.4	21%
Recycling and Waste[a]	—	—	8.9	2%
High GWP/Non-Specified[b]	1.3	<1%	20.0	5%
Agriculture/Forestry	23.6	6%	32.4	8%
Forestry Sinks	-6.7	—	—[c]	—[c]
Net Total (IPCC SAR)	**426.6**	**100%[e]**	—	—
Net Total (IPCC AR4) [d]	**431**	**100%[e]**	**429.1**	**100%[e]**

[a] Included in other categories for the 1990 emissions inventory.

[b] High GWP gases are not specifically called out in the 1990 emissions inventory.

[c] Revised methodology under development (not reported for 2017).

[d] CARB revised the State's 1990 level GHG emissions using GWPs from the IPCC Fourth Assessment Report (IPCC AR4).

[e] Total of individual percentages may not add up to 100% due to rounding.

SOURCES: CARB, 2007; CARB, 2019

Existing Project Site Emissions

There are currently five electric-powered groundwater wells and five solar-powered groundwater wells located at Onyx Ranch. The solar-powered wells only operate during daylight hours and are not connected to the existing electrical power grid; thus, only the electric-powered wells draw energy that is tied to GHG emissions from generation of electricity at regional power plants. Currently, operation of the five electric-powered wells results in the consumption of 1,028,556 kWhs annually, resulting in emissions of approximately 286 $MTCO_2e$ annually.

Under existing conditions, there are approximately 60 round trips per year used to transport cattle an average of 75 miles between the project site and off-site pastures. Heavy duty diesel trucks are used to transport the cattle from one pasture to another. Heavy duty diesel trucks emit CO_2 and N_2O, resulting in emissions of approximately 14 $MTCO_2e$ annually. Therefore, the total existing emissions from activities associated with agricultural activities on the project site are equal to approximately 300 $MTCO_2e$ annually.

Cumulative Setting

GHG emissions result in impacts to climate change at a global scale. According to the California Air Pollution Control Officers Association (CAPCOA), "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective" (CAPCOA, 2008). It is global GHG emissions in their aggregate that contribute to climate change, not any single source of GHG emissions alone. Since analysis of GHG emissions are inherently cumulative, the cumulative setting is identical to the environmental setting described above for the existing conditions on the project site.

3.9.2 Regulatory Framework

Federal

Vehicle Emissions Standards

In 1975, Congress enacted the Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the U.S. Pursuant to the act, the USEPA and National Highway Traffic Safety Administration (NHTSA) are responsible for establishing additional vehicle standards. In August 2012, standards were adopted for model year 2017 through 2025 for passenger cars and light-duty trucks. Under the standards, by 2025 vehicles are required to achieve 54.5 mpg (if GHG reductions are achieved exclusively through fuel economy improvements) and 163 grams of CO_2 per mile. According to the USEPA, a model year 2025 vehicle would emit one-half of the GHG emissions as compared to emissions from a model year 2010 vehicle (USEPA, 2012). California harmonized its vehicle efficiency standards through 2025 with the federal standards.

In 2017, the USEPA issued its Mid-Term Evaluation of the GHG emissions standards, finding that it would be practical and feasible for automakers to meet the model year 2022-2025 standards through a number of existing technologies. In 2018, the USEPA revised its 2017 determination, and issued a proposed rule that maintains the 2020 Corporate Average Fuel Economy (CAFE) and CO_2 standards for model years 2021 through 2026.[1] The estimated CAFE and CO_2 standards for model year 2020 are 43.7 mpg and 204 grams of CO_2 per mile for passenger cars and 31.3 mpg and 284 grams of CO_2 per mile for light trucks, projecting an overall industry average of 37 mpg, as compared to 46.7 mpg under the standards issued in 2012. In 2019, the State of California, joined by 16 other states and the District of Columbia, filed a petition challenging the USEPA's proposed rule to revise the vehicle emissions standards,

[1] Federal Register, 2018. Vol. 83, No. 165. August 24. Proposed Rules.

arguing that the USEPA had reached erroneous conclusions about the feasibility of meeting the existing standards (Amicus Brief, 2019). As of April, 9, 2019, the case was pending and oral arguments had not been scheduled. Accordingly, due to the uncertainty of future federal regulations, this analysis assumes that the existing CAFE standards will remain unchanged.

State of California

Executive Order S-3-05

In 2005, Governor Schwarzenegger announced Executive Order S-3-05, which established the following GHG emission reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels.
- By 2020, California shall reduce GHG emissions to 1990 levels.
- By 2050, California shall reduce GHG emissions to 80 percent below 1990 levels.

Executive Order B-30-15

In 2015, Executive Order B-30-15:

- Established a new interim statewide reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030.
- Ordered all State agencies with jurisdiction over sources of GHG emissions to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 reduction targets.
- Directed CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent.

California Health and Safety Code, Division 25.5 – California Global Warming Solutions Act of 2006 (AB 32)

Following the issuance of Executive Order S-3-05, in 2006, the California Global Warming Solutions Act of 2006 (passed as Assembly Bill (AB) 32 and codified in the California Health and Safety Code [HSC], Division 25.5) focuses on reducing GHG emissions in California to 1990 levels by 2020. HSC Division 25.5 defines GHGs as CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. AB 32 also tasked the CEC and CPUC with providing information, analysis, and recommendations to CARB regarding strategies to reduce GHG emissions in the energy sector.

Under HSC Division 25.5, CARB has the primary responsibility for reducing GHG emissions. CARB is required to adopt rules and regulations directing State actions that would achieve GHG emissions reductions equivalent to 1990 statewide levels by 2020.

In 2016, SB 32 and its companion bill AB 197 amend HSC Division 25.5 and establish a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and include provisions to ensure that the benefits of State climate policies reach into disadvantaged communities.

Senate Bill (SB) 1078 (Sher) (Chapter 516, Statutes of 2002), SB 107 (Simitian) (Chapter 464, Statutes of 2006), SB 100 (De León) (Chapter 312, Statutes of 2018) and Executive Order S-14-08

In 2002, the passage of SB 1078 established the Renewables Portfolio Standard (RPS), which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from eligible renewable sources by 2017. SB 107, adopted in 2006, changed the target date to 2010.

In 2008, Executive Order S-14-08 expanded the State's RPS goal to 33 percent renewable power by 2020. In 2009, Executive Order S-21-09 directed CARB (under its AB 32 authority) to enact regulations to help the State meet the 2020 goal of 33 percent renewable energy. The 33 percent by 2020 RPS goal was codified with the passage of Senate Bill X1-2. This new RPS applied to all electricity retailers in the State, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators.

CPUC and the CEC jointly implement the RPS program. The CPUC's responsibilities include: (1) determining annual procurement targets and enforcing compliance; (2) reviewing and approving each investor-owned utility's renewable energy procurement plan; (3) reviewing contracts for RPS-eligible energy; and (4) establishing the standard terms and conditions used in contracts for eligible renewable energy.

In 2018, SB 100 established that 100 percent of all electricity in California must be obtained from renewable and zero-carbon energy resources by the end of 2045. SB 100 also creates new standards for the RPS, increasing required energy from renewable sources for both investor-owned utilities and publicly-owned utilities from 50 percent to 60 percent by the end of 2030. Incrementally, these energy providers must also have a renewable energy supply of 44 percent by the end of 2024, and 52 percent by the end of 2027. The updated RPS goals are considered achievable, since many California energy providers are already meeting or exceeding the RPS goals established by SB 350.

Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

In 2004, CARB adopted an Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling to reduce public exposure to diesel particulate matter emissions (Title 13 California Code of Regulations [CCR] Section 2485). The measure applies to diesel-fueled commercial vehicles with gross vehicle weight ratings greater than 10,000 pounds that are licensed to operate on highways, regardless of where they are registered. This measure prohibits diesel-fueled commercial vehicles from idling for more than 5 minutes at any given location. While the goal of this measure is primarily to reduce public health impacts from diesel emissions,

compliance with the regulation also results in energy savings in the form of reduced fuel consumption from unnecessary idling.

Low Carbon Fuel Standard

In 2007, Executive Order S-01-07 mandated that the State: (1) establish a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020; and (2) adopt a Low Carbon Fuel Standard (LCFS) for transportation fuels in California. The overall goal of the LCFS is to lower the carbon intensity of California transportation fuel. The 2017 CARB Climate Change Scoping Plan (see below) calls for the LCFS to reduce fuel carbon intensity by at least 18 percent by 2030. In 2018, CARB extended the LCFS to 2030, making significant changes to the design and implementation of the Standard including a doubling of the carbon intensity reduction to 20 percent by 2030.

Regulation to Reduce Emissions of Diesel Particulate Matter, Nitrogen Oxides and other Criteria Air Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles

In addition to limiting exhaust from idling trucks, in 2008, CARB approved the Truck and Bus regulation to reduce NOx, PM10, and PM2.5 emissions from existing diesel vehicles operating in California (13 CCR Section 2025). The phased regulation aims to reduce emissions by requiring installation of diesel soot filters and encouraging the retirement, replacement, or retrofit of older engines with newer emission-controlled models. The phasing of this regulation has full implementation by 2023.

CARB also promulgated emission standards for off-road diesel construction equipment of greater than 25 horsepower (hp) such as bulldozers, loaders, backhoes and forklifts, as well as many other self-propelled off-road diesel vehicles. The In-Use Off-Road Diesel-Fueled Fleets regulation adopted by CARB in 2007 aims to reduce emissions by installation of diesel soot filters and encouraging the retirement, replacement, or repower of older, dirtier engines with newer emission-controlled models (13 CCR Section 2449). The compliance schedule requires full implementation by 2023 in all equipment for large and medium fleets and by 2028 for small fleets.

While the goals of these measures are primarily to reduce public health impacts from diesel emissions, compliance with the regulation has shown an increase in energy savings in the form of reduced fuel consumption from more fuel-efficient engines (Cummins, 2014).

2017 CARB Climate Change Scoping Plan

In response to SB 32 and the required 2030 GHG reduction target, CARB adopted the 2017 update to the Climate Change Scoping Plan (CARB, 2017a). In the 2017 Climate Change Scoping Plan, CARB provides the estimated projected statewide 2030 emissions under business-as-usual (BAU) conditions (that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions) and the level of reductions necessary to achieve the 2030 target of 40 percent below 1990 levels. CARB's projected statewide 2030 BAU emissions takes into account 2020 GHG reduction policies and programs. A summary of the GHG emissions

reductions required under SB 32 (HSC Division 25.5) is provided in Table 3.9-2, 2017 Estimated Greenhouse Gas Emissions Reductions Required by HSC Division 25.5.

TABLE 3.9-2
2017 ESTIMATED GREENHOUSE GAS EMISSIONS REDUCTIONS REQUIRED BY HSC DIVISION 25.5

Emissions Category	GHG Emissions ($MMTCO_2e$)
2017 Climate Change Scoping Plan	
2030 BAU Forecast ("Reference Scenario" which includes 2020 GHG reduction policies and programs)	389
2030 Emissions Target Set by HSC Division 25.5 (i.e., 40% below 1990 Level)	260
Reduction below BAU Necessary to Achieve 40% below 1990 Level by 2030	129 (33.2%) [a]

[a] 389 – 260 = 129 / 389 = 33.2%
SOURCE: CARB, 2011; CARB, 2017b; CARB, 2017a.

The 2017 Climate Change Scoping Plan outlines the strategies the State will implement to achieve the 2030 GHG reduction target. The Climate Change Scoping Plan includes the Scoping Plan Scenario, which CARB stated "is the best choice to achieve the State's climate and clean air goals" (CARB, 2017a). The Scoping Plan Scenario consists of ongoing and statutorily required programs and state-developed plans relevant to meeting the 2030 emissions goals. The cornerstone of the 2017 Scoping Plan Update is an expansion of the Cap-and-Trade Program (discussed further below) to meet the aggressive 2030 GHG emissions goal and ensure achievement of the 2030 limit set forth by E.O. B-30-15. Under the Scoping Plan Scenario, the majority of the reductions would result from continuation of the Cap-and-Trade regulation. Additional reductions are achieved from increasing use of renewable resources for electricity sector (i.e., utility providers to supply 50 percent renewable electricity by 2030), doubling the energy efficiency savings at end uses, additional reductions from the Low Carbon Fuel Standard (LCFS), implementing the short-lived GHG strategy (e.g., hydrofluorocarbons), improved vehicle, truck and freight movement emissions standards, and strategies to reduce methane emissions from agricultural and other wastes by using it to meet our energy needs. The 2017 Climate Change Scoping Plan also comprehensively addresses GHG emissions from natural and working lands of California, including the agriculture and forestry sectors.

The 2017 Climate Change Scoping Plan also discusses the role of local governments in meeting the State's GHG reductions goals because local governments have jurisdiction and land use authority related to: community-scale planning and permitting processes, local codes and actions, outreach and education programs, and municipal operations. Furthermore, local governments may have the ability to incentivize renewable energy, energy efficiency, and water efficiency measures (CARB, 2017a). The 2017 Climate Change Scoping Plan encourages local governments to adopt Climate Action Plans to address local GHG emission sources.

Senate Bill (SB) 32 and Assembly Bill (AB) 197

In 2016, SB 32 and its companion bill, AB 197, augmented AB 32 and amended HSC Division 25.5, establishing a new climate pollution reduction target of 40 percent below 1990 levels by 2030. AB 32 includes provisions to ensure the benefits of State climate policies reach into disadvantaged communities.

Senate Bill (SB) 350

SB 350 (The Clean Energy and Pollution Reduction Act of 2015, Chapter 547, Statutes of 2015) increased the RPS by requiring an increase in the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources from 33 percent to 50 percent by the end of 2030. SB 350 also requires the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in existing electricity and natural gas final end uses of retail customers by January 2030.

Senate Bill (SB) 1383

In 2016, SB 1383 required statewide reductions in short-lived climate pollutants (SLCPs) across various industry sectors. SLCPs covered under AB 1383 include methane, fluorinated gases, and black carbon; all GHGs with a much higher warming impact than carbon dioxide and with the potential to have detrimental effects on human health. SB 1383 requires the CARB to adopt a strategy to reduce methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030. The methane emission reduction goals include a 75 percent reduction in the level of statewide disposal of organic waste from 2014 levels by 2025.

Local

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, policies, and implementation measures of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the Kern River Valley Specific Plan (KRVSP) area, which was addressed in the KRVSP adopted by Kern County in 2011. The KRVSP consists of an element that includes a goal and, policies related to the air quality within the Kern River Valley. The applicable element and the goal and polices are as follows:

Conservation Element

The Conservation Element focuses on practices that can ensure the long-term survival of resources that Kern River Valley residents enjoy and cherish. The Conservation Element identifies a goal and policies related to air quality in the Kern River Valley Area. The applicable goal and policies are as follows:

Air Quality

Policy 5.5.10: Create incentives for the use of domestic and commercial solar and wind energy uses to conserve fossil fuels and improve air quality.

Solar and Wind Energy

Goal 5.6.1: Promote use of solar and wind energy in Kern River Valley.

Policy 5.6.1: Encourage the use of domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009). The following element addresses air quality.

Land Use, Open Space, and Conservation Element

The Land Use, Open Space, and Conservation Element provides a policy to maintain air quality standards within the County. The applicable policy is as follows:

Air Quality

Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision making body, as part of its deliberations, will ensure that:

1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted.
2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.

Eastern Kern Air Pollution Control District CEQA Thresholds

In March 2012, the EKAPCD adopted an addendum to its CEQA Guidelines to address GHG impacts, including quantitative thresholds for determining significance of GHG emissions for projects where EKAPCD is the CEQA lead agency.[2] A project is considered to have a significant project or cumulatively considerable impact if it exceeds the following criteria:

1. Generate 25,000 metric tons or more of CO_2e per year.
2. The above impact would be considered to be fully reduced to below the significance level if it meets one of the following conditions:

[2] Note that the EKCAPCD is not the lead agency for the proposed project.

a. The project demonstrates to EKAPCD that it is in compliance with a State GHG reduction plan such as AB 32 or future federal GHG reduction plan if it is more stringent than the State plan.

b. Project GHG emissions can be reduced by at least 20 percent below BAU through implementation of one or more of the following strategies:

- Compliance with a Best Performance Standard (BPS)
- Compliance with GHG Offset
- Compliance with an Alternative GHG Reduction Strategy

3.9.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to pages 3.9-1 above for a summary of the environmental issues and significance criteria included in this Draft EIR for the analysis of GHG emissions. This Draft EIR assumes implementation of the proposed project would have a significant impact related to GHG emissions if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The CEQA Guidelines do not establish a specific quantified threshold of significance for GHG emissions; rather, lead agencies are granted discretion to establish significance thresholds for their respective jurisdictions, including by looking to thresholds developed by other public agencies, such as air districts, or suggested by other experts, such as California Air Pollution Control Officers Association (CAPCOA), so long as any threshold chosen is supported by substantial evidence (see Section 15064.7(c)). A lead agency may also use thresholds on a case-by-case basis. (Id., subd. (b).) Each case must be analyzed in light of its own facts and circumstances.

Even in the absence of clearly defined thresholds for GHG emissions, the law requires that an agency makes a good faith effort to disclose the GHG emissions from a project and mitigate to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact. Regardless of which threshold(s) are used, the agency must support its analysis and significance determination with substantial evidence. (CEQA Guidelines, Section 15064.7.) The CEQA Guidelines recommend considering certain factors, among others, when determining the significance of a project's GHG emissions including: the extent to which the project may increase or reduce GHG emissions as compared to the existing environment; whether the project exceeds an applicable significance threshold; and extent to which the project complies with regulations or requirements adopted to implement a reduction or mitigation of GHGs.

According to CAPCOA, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective" (CAPCOA, 2008). Due to the complex physical, chemical and atmospheric mechanisms involved in global climate change,

there is no basis for concluding that a single project's increase in annual GHG emissions would cause a measurable change in global GHG emissions necessary to influence global climate change. Section 15064.4(b) of the CEQA Guidelines states that "in determining the significance of a project's greenhouse gas emissions, the lead agency should focus its analysis on the reasonable foreseeable incremental contribution of the project's emissions to the effects of climate change. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions."

In a recent document titled, *Draft Discussion: CEQA and Climate Change*, the Governor's Office of Planning and Research (OPR) has described some of the methods that a lead agency may use in selecting the appropriate threshold below which the lead agency may find an impact is less than significant (OPR, 2008). This includes:

- Efficiency Based Threshold – An efficiency metric (rather than an absolute number) would compare projects of various types, sizes, and locations equally, and determine whether a project is consistent with the State's reduction goals. For example, an efficiency metric for a residential project can be expressed on a per capita basis, and a metric for an office project can be expressed on a per employee basis.
- Compliance with State Goals and Percentage Reduction from BAU Emissions
- Consistency with Relevant Regulations, Plans, Policies, and Regulatory Programs
- Absolute Numerical/Quantitative Threshold

Although the proposed project's GHG emissions have been quantified as discussed in the Methodology section below, neither CARB, EKAPCD, nor RRBWSD has adopted quantitative project-level significance thresholds for assessing impacts related to GHG emissions applicable to the proposed project. In the absence of any adopted quantitative threshold, the determination of whether or not the proposed project would result in a cumulatively considerable contribution to the cumulative impacts of global climate change is based on the following:

- If the proposed project would conflict with (and thereby be inconsistent with) the applicable regulatory plans and policies to reduce GHG emissions, which include the emissions reduction measures included within CARB's 2017 Climate Change Scoping Plan and ES-03-05.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area of the project (CCR, Title 14, Section 15064(h)(3)). To qualify, such a plan or program must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency (CCR, Title 14, Section 15064(h)(3)). Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, [and] plans or regulations for the reduction of greenhouse gas emissions" (CCR, Title 14, Section 15064(h)(3)).

Thus, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with a program and/or other regulatory schemes to reduce GHG emissions.

Methodology

The analysis presented within this section is based on both qualitative and quantitative approaches for determining GHG emissions and impacts associated with project operation and maintenance.

Construction of Wells

During implementation of the proposed project, minor GHG emissions would result from the construction of up to 12 shallow, low-volume wells that would be powered by solar facilities to provide livestock water and improved livestock distribution for more effective use of the available forage. Each well location would have a 2,000 to 4,000 gallon aboveground tank for water storage for use during weather conditions when the solar power for well pumping does not operate. The water tank would be on the ground and connect by an aboveground pipe to a livestock trough. Although the proposed wells would be developed on an as-needed basis, as a conservative analysis for GHG emissions, it was assumed that all wells would be developed at one time. The proposed wells would be 6 inches in diameter and approximately 20 to 50 feet deep. The footprint of aboveground well components would be approximately 20 feet by 40 feet and would be placed in already disturbed areas. Construction of each well would take up to 3 days. Emissions from the construction of these 12 shallow solar wells were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2,[3] which is the most recent version of the model, for off-road construction equipment and the most recent version of the CARB on-road vehicle Emissions Factor (EMFAC2017)[4] model for on-road trips associated with hauling of extracted soils and worker trips. EMFAC2017 emission factors were used outside of CalEEMod to quantify on-road emissions as the current version of CalEEMod uses the prior EMFAC2014 version.

Field and Pasture Transitions

Implementation of the proposed project would result in field transitions from irrigated fields and pastures to non-irrigated fields and pastures. GHG emissions would result from operation of agricultural equipment such as tractors, plows, and seed drills to prepare the fields for planting and seeding. It is assumed that the current agricultural equipment used onsite within the project site would be used for the initial conversion process and then would be maintained or reduced as necessary for the sustained operation and maintenance of the non-irrigated fields and pastures. Therefore, the agricultural equipment anticipated to be used to implement field transitions would be similar to or less intensive as the existing operations because the fields and pastures would be

[3] 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 construction and operational criteria pollutant and greenhouse gas (GHG) emissions from a variety of land use projects and construction equipment and activities.

[4] EMFAC2017 is the latest emissions inventory model that calculates emissions inventories for motor vehicles operating on roads in California and reflects CARB's understanding of how vehicles travel and how much they pollute.

planted/seeded with vegetation that could persist under a natural precipitation regime. As such, the frequency and intensity of active land management to plant and irrigate the project site would be reduced; therefore, the quantification of exhaust emissions associated with agricultural equipment was not done as part of the analysis since emissions are anticipated to remain the same or decrease.

Operation and Maintenance

During operation and maintenance of the proposed project, changes to existing GHG emissions would be from a potential decrease in electrical consumption associated with groundwater well operation and a 50 percent reduction in vehicle miles traveled for cattle transport. There are currently five electric-powered wells and five solar-powered wells located on the project site. The proposed project would include up to 12 shallow, low-volume wells powered by solar facilities to provide livestock water. The proposed project would not pump groundwater to replace the loss of irrigation water; therefore, annual operation of the existing wells would decrease, with groundwater pumping for irrigation potentially occurring only for the Boone Field. Groundwater pumping would continue per existing conditions for non-irrigation purposes such as on-site houses, livestock, fire management, and dust control. The solar-powered wells only operate during daylight hours, are not connected to the existing electric power grid, and do not general GHG emissions. The five electric-powered wells are connected to the power grid and under the proposed project their use would decrease. The Pruitt well and Scodie well, which serve the Boone Field, are anticipated to remain active at current capacity; however, operation of the remaining three wells are expected to be reduced, but could operate from between 0 to 100 percent capacity. Therefore, the proposed project would reduce electricity consumption and corresponding GHG emissions associated with groundwater well operation.

Currently there are 60 annual round trips associated with cattle transport with an average of 75 miles per trip. Heavy duty diesel trucks are used to transport the cattle from one pasture to another, and such diesel truck generate GHG emissions of CO_2 and N_2O. With operation and maintenance of the proposed project, the 60 annual round trips currently used to transport cattle would be reduced to approximately 30 round trips, with the average distance traveled between pastures remaining the same. As such, there would be a 50 percent reduction in vehicle miles traveled for cattle transport, and GHG emissions from diesel vehicles similarly would be reduced relative to existing conditions.

Impact Analysis

Greenhouse Gas Emissions

Potential Impact GHG-1: Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

The proposed project would directly generate GHG emissions during the transition of irrigated fields and pastures to non-irrigated fields and pastures and routine operation and maintenance of the fields and pastures, as described above under Methodology. Three GHGs associated with the proposed project, CO_2, CH_4, and N_2O, would be emitted from on-road vehicles and off-road

agriculture equipment during field transitions and from vehicles and equipment used during routine operation and maintenance activities. However, agricultural equipment used for the proposed project is anticipated to be the same mix of equipment or potentially fewer pieces of equipment than under existing conditions. In addition, with implementation of the proposed project, the vehicle miles traveled for cattle transport would be decreased by 50 percent from existing conditions, resulting in 50 percent fewer emissions associated with vehicle miles traveled to transport livestock. Heavy duty diesel trucks emit CO_2 and N_2O, resulting in emissions of approximately 14 $MTCO_2e$ annually for cattle transport. With implementation of the proposed project, this would be reduced by 50 percent to approximately 7 $MTCO_2e$ annually.

There are currently five electric-powered groundwater wells and five solar-powered groundwater wells located at the Onyx Ranch. Solar-powered wells only operate during daylight hours and are not connected to the existing electrical power grid; thus, only the electric-powered wells draw energy that is tied to GHG emissions from generation of electricity at regional power plants. Currently, operation of the five electric-powered wells results in the consumption of 1,028,556 kWhs annually, resulting in emissions of approximately 286 $MTCO_2e$ annually. The proposed project would not pump groundwater to replace the loss of irrigation water; therefore, annual operation of the existing electric-powered wells would decrease, with groundwater pumping for irrigation potentially occurring only for the Boone Field. The Pruitt well and Scodie well, which serve the Boone Field, are anticipated to remain active at current capacity; however, operation of the remaining three wells are expected to be reduced, but could operate from between 0 to 100 percent capacity. With implementation of the proposed project, GHG emissions associated with operation of the existing electric-powered wells would range from 21 to 286 $MTCO_2e$ depending on the amount of pumping required during that year.

During installation of the proposed shallow, low-volume solar wells, GHG emissions would be generated from the construction equipment used to construct the wells. GHG emissions associated with construction of proposed shallow solar wells would result in approximately 30 $MTCO_2e$, or 1 $MTCO_2e$ annually when amortized over a 30-year project (see Appendix B, Air Quality, Greenhouse Gases, and Energy to this Draft EIR, for calculations). Once the proposed shallow solar wells are installed, they would be operated entirely on solar energy and would not generate GHG emissions when operated.

Overall, given the reduction in vehicle miles traveled for transporting cattle, the reduction in electricity consumption due to reduced groundwater pumping for irrigation, the fact that no additional electricity would be required to operate the proposed shallow solar wells, and the minimal annual emissions from well construction, net GHG emissions from the proposed project would be reduced relative to existing conditions. Total GHG emissions associated with the proposed project would equal between 29 and 294 $MTCO_2e$ including emissions associated with well construction.[5] Relative to existing conditions of 300 $MTCO_2e$, the proposed project would result in a total net decrease in GHG emissions between 6 and 271 $MTCO_2e$ depending on the annual operation of the existing electric-powered groundwater wells. Therefore, the GHG emissions

[5] In order to account for total annual emissions, the construction emissions from the project are amortized over an expected 30-year project lifetime and added to operational emissions in order to provide a worst-case annual emissions scenario.

associated with the proposed project would not have a significant effect on the environment and may have a beneficial effect of reducing GHG emissions depending on the annual operation of existing groundwater wells on the project site. The impact would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- Implementation of the proposed project would reduce vehicle miles traveled associated with transporting cattle and reduce electricity consumption associated with groundwater pumping for irrigation. Therefore, GHG emissions as a result of the proposed project would be similar or reduced relative to existing conditions. The impact would be less than significant.

Plans, Policies, and Regulations

Potential Impact GHG-2: Would the proposed project conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

The proposed project's compliance with regulations and policies for the reduction of GHG emissions is discussed below. The analysis below provides compliance determinations for the most recent plans that apply to the proposed project.

Consistency with 2017 Climate Change Scoping Plan

As directed by Executive Order B-30-15, CARB's *2017 Climate Change Scoping Plan* describes how the State intends to achieve the 2030 GHG emission reduction goal for California of 40 percent below 1990 levels by 2030, as mandated by SB 32. The *2017 Climate Change Scoping Plan* strategy for meeting the 2030 GHG target incorporates the full range of legislative actions and State-developed plans that have relevance to the year 2030, including the LCFS, SB 350, SB 1383, and the Cap-and-Trade Program (AB 398).

The proposed project would not conflict with key State plans and regulatory requirements referenced in the *2017 Climate Change Scoping Plan* designed to reduce statewide emissions. According to the *2017 Climate Change Scoping Plan*, reductions needed to achieve the 2030 target are expected to be achieved by increasing the RPS to 50 percent of the State's electricity by 2030, greatly increasing the fuel economy of vehicles and reducing the rate of growth in VMT, among other measures.

As discussed above under Potential Impact GHG-1, relative to existing conditions of 300 $MTCO_2e$, the proposed project would result in a total net decrease in GHG emissions

between approximately 6 and 271 $MTCO_2e$ depending on the annual operation of the existing electric-powered groundwater wells at the Onyx Ranch. In particular, the proposed project would reduce GHG emissions from heavy duty diesel trucks that transport cattle from 14 $MTCO_2e$ to 7 $MTCO_2e$. As such, the proposed project would not conflict with the overall State goals to reduce GHG emissions from on-road and off-road vehicles. The proposed project would also benefit from statewide efforts towards increasing the fuel economy standards of vehicles and reducing the carbon content of fuels as the continued use of these fuels for the existing conditions would result in reduced GHG emissions.

The proposed project could also reduce emissions associated with the operation of electric-powered groundwater wells, depending on the amount of use required from year to year. As stated above, with implementation of the proposed project, the Pruitt well and Scodie well would be expected to remain active at current capacity; however, the remaining wells could operate from between 0 to 100 percent capacity and, therefore, could reduce electrical consumption and associated GHG emissions accordingly. The proposed project would benefit from statewide and utility-provider efforts towards increasing the portion of electricity provided from renewable resources, as the GHG emissions associated with the electricity used for the existing wells would decrease as the renewable content of the electricity delivered to the site increases.[6]

For these reasons, the proposed project's emissions trajectory would decline over time as fuel and electrical utility efficiencies increase; therefore, the proposed project would be consistent with the 2017 Climate Change Scoping Plan.

Executive Order S-3-05

Executive Order No. S-3-05 established a long-term goal of reducing California's GHG emissions to 80 percent below the 1990 level by the year 2050. The extent to which GHG emissions from mobile sources would change in the future depends on the quantity (e.g., number of vehicles, average daily mileage) and quality (i.e., carbon content) of fuel that would be available and required to meet both regulatory standards, and resident and worker needs.

Renewable power requirements, LCFS, and vehicle emissions standards, discussed above, would decrease GHG emissions per unit of energy delivered or per VMT. Due to the uncertainty of technological advancements that could be anticipated over the next 30 years and the unknown parameters of the regulatory framework in 2050, quantitative analysis of the proposed project impacts relative to the 2050 target would be speculative. However, due to the fact that GHG emissions are associated primarily with fuels and electricity, as efficiencies of these increase, the GHG emissions from the proposed project would decrease as discussed above. Section 15145 of the CEQA Guidelines directs that "[i]f, after thorough investigation, a Lead Agency finds that a

6 With the passage of SB 100, California's RPS has been increased over what is prescribed by the 2017 Climate Change Scoping Plan, requiring retail sellers and local publicly-owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and requires that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact."

Even though the State has not provided a clear regulatory and technological roadmap to achieve the 2050 goal, it has demonstrated the potential pace at which emission reductions can be achieved through new regulations, technology deployments, and market developments. In developing the 2017 Climate Change Scoping Plan, CARB, CEC, CPUC, and the California Independent System Operator (CAISO) commissioned a study to evaluate the feasibility and cost of meeting the 2030 target along the way to reaching the State goal of reducing GHG emissions to 80 percent below 1990 levels by 2050. The study underscores the need for a periodic review of State policies and programs for reducing GHG emissions, as was anticipated by AB 32 in its directive to update the Scoping Plan at least every 5 years.

The 2017 Climate Change Scoping Plan incorporates the California PATHWAYS model, which is used to evaluate the feasibility and cost of a range of GHG reduction cases in California within the context of complying with California's long-term GHG emission reduction goals. A 2018 update to the PATHWAYS study advanced the understanding of what is required for technology deployment and other GHG mitigation strategies if California is to meet its long-term climate goals. The 2018 study concludes that to achieve high levels of consumer adoption of zero-carbon technologies, particularly of electric vehicles and energy efficiency and electric heat in buildings, market transformation is needed to reduce the capital cost and to increase the range of options available. This market transformation can be facilitated by 1) higher carbon prices (which can be created by the Cap-and-Trade and LCFS programs); 2) codes and standards, regulations and direct incentives, to reduce the upfront cost to the customer; and 3) business and policy innovations to make zero-carbon technology options the cheaper, preferred solutions compared to fossil fueled alternatives (E3, 2018).

Statewide efforts are underway to facilitate the achievement of the EO S-3-05 goals. It is reasonable to expect the proposed project GHG emissions to decline over time, as the regulatory initiatives identified by CARB in the 2017 Climate Change Scoping Plan are implemented, and other technological innovations occur. Given the reduction in GHG emissions anticipated from the implementation of the proposed project and the reasonably-anticipated further decline in proposed project emissions from increased efficiencies to electrical utilities and fuels, the proposed project would not conflict with or interfere with the ability of the State to achieve the 2050 horizon-year goal of EO S-3-05.

In conclusion, as stated above, the implementation of the proposed project would not conflict with plans or policies established for the reduction of GHG emissions (i.e., the 2017 Climate Change Scoping Plan and EO S-3-08). The impact would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The implementation of the proposed project would not conflict with plans or policies established for the reduction of GHG emissions. The impact would be less than significant.

Potential Cumulative Impacts

The CEQA Guidelines provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHG and global climate change impacts. Quantitative significance thresholds for this environmental topic have not been adopted by the State of California. In addition, neither the Lead Agency nor Kern County have adopted quantitative thresholds for determining significance of GHG emissions at the time of publication of this Draft EIR. However, EKAPCD has recently adopted an addendum to its CEQA Guidelines titled: *Addressing GHG Emission Impacts for Stationary Source Projects When Serving as the Lead CEQA Agency*. This addendum is the policy that EKAPCD will use when it is the lead agency for CEQA to determine the project-specific and cumulative significance of GHG emissions from new and modified stationary source (industrial) projects. Under this policy, a project is considered to have a cumulatively considerable impact if it generates 25,000 metric tons or more of CO_2e per year.

As detailed previously, operation, and maintenance of the proposed project would result no net increase in GHG emissions relative to existing conditions. In addition, as stated above, "GHG impacts are exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective" (CAPCOA, 2008). It is global GHG emissions in their aggregate that contribute to climate change, not any single source of GHG emissions alone. Since analysis of GHG emissions are inherently cumulative, the analyses of impacts provided under Potential Impact GHG-1 and Potential Impact GHG-2 are considered analyses of cumulative impacts. Therefore, the implementation of the proposed project would not result in GHG emissions that would be considered cumulatively considerable. The cumulative impacts are less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- With implementation of the proposed project, there would be no net increase in GHG emissions relative to existing conditions, and the proposed project would not result in a cumulatively considerable impact. The proposed project would result in less than significant cumulative impacts.

3.9.4 References

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3.10 Hazards and Hazardous Materials

This section addresses the potential impacts related to hazards and hazardous materials associated with implementation of the proposed project. This section includes: a description of the existing hazards and hazardous materials conditions on the project site; a summary of applicable regulations related to hazards and hazardous materials; and an evaluation of the potential for the proposed project to result in environmental impacts related to the hazards and hazardous materials on the project site and in the surrounding project area. In addition, an evaluation of the potential cumulative impacts is provided.

The NOP and Initial Study prepared for the proposed project indicated that the Draft EIR would analyze the potential for significant impacts related to hazards and hazardous materials if the proposed project would:

- Be located on a site that is on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese list).
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires.

The analysis of these potential significant impacts is provided below in Section 3.10.3 Impact Analysis and Mitigation Measures.

The NOP and Initial Study determined that the proposed project would have no impact or a less than significant impact related to hazards and hazardous materials for the following issues:

- The creation of hazards to the public or environment through the routine transport, use, or disposal of hazardous materials.
- The creation of hazards to the public or environment through foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- The emission of hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- Result in a safety hazard for people residing or working in the project area, for a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Therefore, these issues are not discussed further in this Draft EIR (see Section 3.1 Format of the Environmental Impact Analysis and Appendix A, Public Participation Process, for more information).

The CEQA Guidelines were revised on December 28, 2018, which resulted in minor revisions to questions in Appendix G Environmental Checklist about potential impacts related to the Hazards and Hazardous Materials environmental topic. These changes are reflected in the thresholds of

significance and the analyses of potential impacts provided below in Section 3.10.3 Impact Analysis and Mitigation Measures.

The 2018 revisions to the CEQA Guidelines also resulted in addition of a Wildland Fires environmental topic to the Appendix G Environmental Checklist. As a result, the expanded significance criteria and associated analyses pertaining to wildland fires are included below in Section 3.10.3 Impact Analysis and Mitigation Measures.

In addition, to be consistent with the CEQA environmental issues analyzed by Kern County, significance criteria and associated analyses pertaining to vectors and vector control are included below in Section 3.10.3 Impact Analysis and Mitigation Measures.

Public comments that were received during the NOP public review period resulted in no addition to the scope of the Draft EIR related to the analysis of hazards and hazardous materials.

3.10.1 Environmental Setting

Location and Setting on Project Site

The 4,109-acre project site is located in northeastern Kern County, in the Kern River Valley, within the South Fork Valley (see Figures 2-1 and 2-2 in Chapter 2 Project Description of this Draft EIR). The project site is located approximately 5 miles from the eastern boundary of the Isabella Reservoir and situated adjacent to and on either side of the South Fork of the Kern River.

The majority of the project site, consisting of approximately 3,418 acres, is located within lands collectively known as the Onyx Ranch. The remaining approximately 691 acres are parcels within the Smith Ranch, of which the RRBWSD owns one-third interest. The terms “Onyx Ranch” and “Smith Ranch” used herein generally refer to the portions of larger ranch areas with the same name within the project site (See Figure 2-1). Figure 2-4 in Chapter 2 Project Description of this Draft EIR, indicates the locations of the existing tracts, agricultural fields, and ditches on the project site and where the ditches originate or end off-site. Of the approximately 3,418 acres on the Onyx Ranch, approximately 2,269 acres are currently used for an agricultural purpose, with the remainder of the Onyx Ranch, consisting of approximately 1,149 acres, either developed or mountainous and, therefore, not suitable for agriculture. Of the approximately 691 acres on the Smith Ranch, approximately 278 acres are riparian pasture, 171 acres are mountainous areas, and approximately 242 acres are used for irrigated pasture purposes. The riparian and irrigated pastures have been irrigated for at least the last 20 years.

As indicated in Figure 2-3, in addition to SR 178 which traverses through the two parts of the project site, there are three developed areas on the project site: (1) the Onyx Ranch Headquarters located along the northern boundary of the project site; (2) the Onyx Store, adjacent single family residence, and sheds located along the southern side of SR 178, in the central-eastern portion of the project site; and (3) buildings associated with the Smith Ranch located in the eastern portion of the project site. A review of aerial photographs of the project site indicated that the structures on the Onyx Ranch were constructed prior to 1952 (Kennedy/Jenks Consultants, 2008, page 3-2

and 3-3). Based on a site visit in 2019, it was concluded that little change to development has occurred on the project site since then.

The structures and supporting facilities that comprise the Onyx Ranch Headquarters include ranch-style residential structures, rows of cabins, barns, silos, storage sheds, water wells, corrals, and storage areas for equipment and debris. There are internal paved and dirt roads that are lined with trees in some places. Access is provided from SR 178 via Doyle Ranch Road that has a bridge over the South Fork of the Kern River. The Onyx Store, which was founded in 1861, continues to operate today. Adjacent to the Onyx Store is a single-family residence, storage sheds, and a parking lot. Access to these structures is provided from SR 178. The proposed project does not involve any changes to the Onyx Ranch Headquarters or the Onyx Store.

The structures and facilities associated with the Smith Ranch include a residence, two barns, two corrals, a saddle house, storage sheds, associated outbuildings, and two water wells. The proposed project does not involve any changes to these structures or facilities.

Existing Site Conditions Related to Hazards and Hazardous Materials

A Phase 1 Environmental Site Assessment (Phase I ESA) was prepared in 2008 by Kennedy/Jenks Consultants for the Kelso Valley Wind project. That assessment, which included a large portion of eastern Kern County, included parcels eventually purchased by the RRBWSD that are now part of the Onyx Ranch portion of the project site. In addition, a Phase I ESA was conducted in 2019 by Environmental Science Associates to evaluate the potential hazardous materials on the portions of the project site that included the Onyx Ranch Headquarters, Smith Ranch, and two parcels on the of Onyx Ranch not previously analyzed. The 2008 Phase 1 ESA is available for review at the RRBWSD office. The 2019 Phase 1 ESA is provided in its entirety in Appendix D, Phase 1 Environmental Site Assessment Report, to this Draft EIR. The following provides a discussion of the existing conditions on the project site related to hazards and hazardous materials.

Onyx Ranch

The 2008 Phase 1 ESA indicated that, except for the Onyx Ranch Headquarters, the Onyx Ranch does not present a concern with respect to hazards or hazardous materials (Kennedy/Jenks Consultants, 2008, pages ES 3 and ES 4). The 2019 Phase 1 ESA indicated that the two parcels assessed on the western portion of the Onyx Ranch also do not present a concern related to hazards or hazardous materials.

The Onyx Ranch Headquarters is located along the northern boundary of the project site at 8445 Doyle Ranch Road (see Figure 2-3). As discussed above, the Onyx Ranch Headquarters include various structures (two barns, several workshops and storage sheds, residences, corrals, and an office), and farming equipment and supplies. Hazardous materials in use include fuels and oils, fertilizers, herbicides, and pesticides. The site inspection conducted for the 2019 Phase 1 ESA indicated good housekeeping practices were in place at the Onyx Ranch Headquarters. All aboveground storage tanks (ASTs) and chemical containers were located within secondary containment structures or inside small buildings or sheds, except for propane tanks, which do not

require secondary containment. The soils throughout the Headquarters, including around outside fuel, oil, and chemical containment structures, are largely free of visible soil staining except for a few minor stained areas considered to be *de minimus* conditions because the distance between the stained areas and the South Fork of the Kern River or the agricultural ditches is great enough that adverse impacts to water quality are not anticipated (ESA, 2019). Therefore, the existing conditions on the Onyx Ranch, including at the Onyx Ranch Headquarters, do not present a concern with respect to hazards or hazardous materials.

Smith Ranch

Smith Ranch, shown on Figure 2-3 in Chapter 2 Project Description of this Draft EIR, is a working cattle ranch with two barns, two corrals, associated outbuildings, and open grazing land. The 2019 Phase I ESA indicated that hazardous materials used on Smith Ranch includes fuels and oils for equipment. The 2019 Phase I ESA site inspection indicated good housekeeping practices have occurred. However, several drums in an overgrown area located near the former grain house with unknown contents were observed. The drums were not observed to be leaking, did not have stained soil beneath them, and were not within a drainage. In addition, there was no other evidence of discolored or stained soil or water, stressed vegetation, ASTs (other than one residential propane tank), underground storage tanks, pits, or lagoons observed at Smith Ranch (ESA, 2019). Therefore, the existing conditions on the Smith Ranch do not present a concern with respect to hazards or hazardous materials.

Listed Hazardous Materials Sites

The 2019 Phase I ESA conducted a search of regulatory records for hazardous materials sites using the State Water Resources Control Board (SWRCB) GeoTracker and the Department of Toxic Substances Control (DTSC) EnviroStor databases to identify potential contaminated sites in and around the project site. No hazardous materials sites pursuant to Government Code Section 65962.5 were identified within the Onyx Ranch or the Smith Ranch (ESA, 2019, pages 14–15).

Off of the project site, a hazardous materials site was listed about 1,000 feet southwest and down gradient of the Smith Ranch. The Onyx Emporium site, located at 23822 Highway 178 in Onyx, has three underground fuel storage tanks. This site is also listed as Ropers recycling. No violations or spills are listed for either business and, therefore, would not be able to affect the project site or the South Fork of the Kern River (ESA, 2019, page 15).

Approximately 3,000 feet southwest of the Onyx Ranch, down gradient of Hochman Field 1, a hazardous materials site identified as Paul’s Place was listed. Paul’s Place had an unknown number of underground gasoline storage tanks that were removed in 1999. No additional information was available and the case was closed in 1999. Given the 1999 closure date and the distance of approximately 3,000 feet southwest, this site would not affect the project site or the South Fork of the Kern River (ESA, 2019, page 15).

Wildland Fire Hazards

Fire Hazard Severity Designations

All of California is subject to some degree of fire hazard, but specific features make some areas more hazardous. The California Department of Forestry and Fire Protection (CAL FIRE) establishes fire hazard severity zones throughout the State that are determined based on factors that influence fire likelihood and fire behavior. Many factors are considered including fire history, existing and potential fuel (natural vegetation), flame length, blowing embers, terrain, and typical weather. The majority of the project site is designated as a moderate fire hazard severity zone. The southeast portion and northern portion of the project site are designated as high and very high fire hazard severity zones (CAL FIRE, 2019a). Figure 3.10-1 provides the fire hazard designations for the project site, including the locations of the fire hazard severity zones in and around the project site.

Project Site Characteristics Related to Wildland Fire Hazards

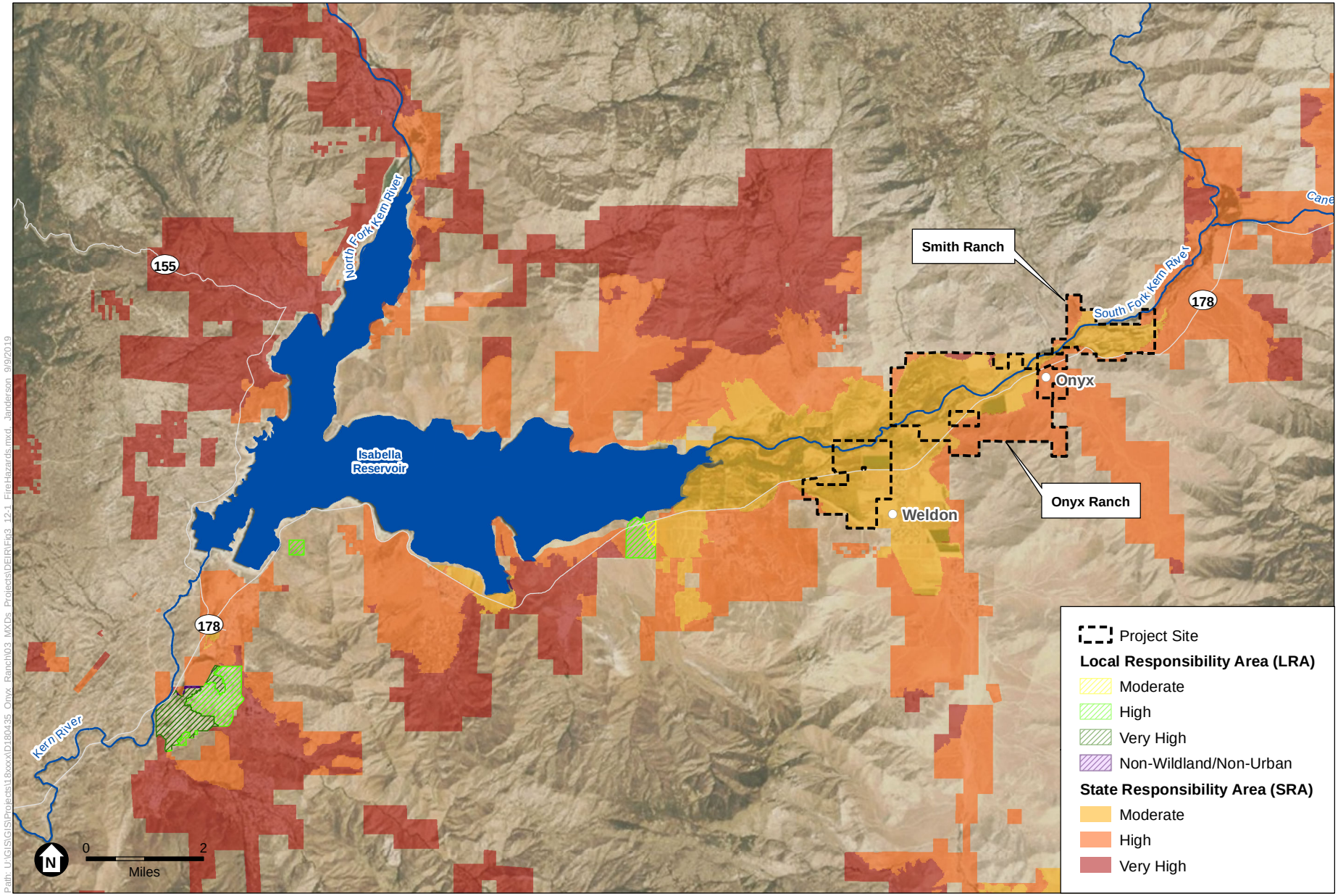
The project site has a combination of: vacant areas with steep slopes and rocky terrain generally located along the outer portions of the project site; relatively level areas with agricultural fields, ditches, and limited development; and the riverbed and banks of the South Fork of the Kern River that traverses through the property.

The dominant vegetation communities and other land cover types within the proposed project site from order of magnitude include pasture (grazing lands as well as agricultural fields with crops), big sagebrush scrub, Fremont cottonwood forest, and rubber rabbitbrush scrub. The pastures are mostly heavily irrigated and the Fremont cottonwood forest is located within the adjacent floodplain near the South Fork of the Kern River. For these reasons, these two vegetation types are less flammable due to their perennially higher plant moisture content, fuel arrangement, ignition resistance, compact structure, and available shading from overstory tree canopies. The brush and scrub communities, however, are considered highly flammable due to rough or peeling bark, production of large amounts of litter, vegetation that contains oils, resin, wax, or pitch, and large amounts of dead material in the plant. Refer to Figures 3.6-2 and 3.6-2a through 3.6-2c in Section 3.6 Biological Resources of this Draft EIR for locations of the scrub and brush plant communities on the project site.

Fire History for the Project Site

Fire history information can provide an understanding of fire frequency, fire type, most vulnerable areas within and adjacent to the project site, and significant ignition sources. Based on CAL FIRE's Fire Resource Assessment Program (FRAP) database, the fire history data for the project site and the surrounding area indicates that, as of 2014, the fire threat for the project site and surrounding area has ranged from moderate to very high (CAL FIRE, 2019b).

According to available data from CAL FIRE's California Statewide Fire Map, 11 fires occurred within 3 miles of the project site from 2009 to 2018 (see Figure 3.10-2) (CAL FIRE, 2019b). The largest of these fires was the Erskine Fire in 2016 that covered 48,008 acres of land and was the result of a faulty electrical line in a tree (KCFD, 2019a). Of the 11 fires, one fire (called the Highway 178 Fire) occurred in 2009 within the project site and two fires (called the Boone and Onyx Fires) occurred in 2012 and 2016, respectively, immediately adjacent the project site.

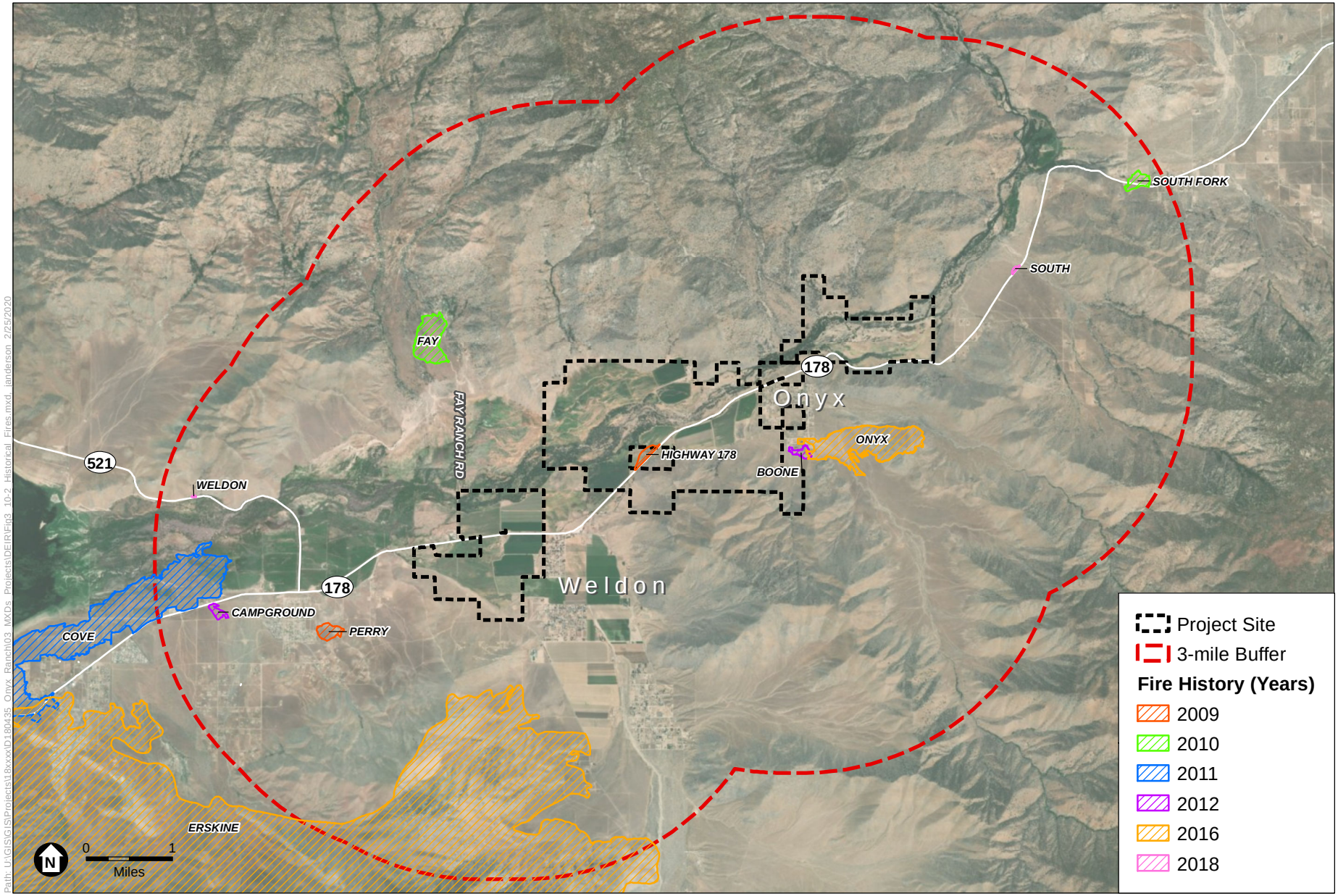


SOURCE: Mapbox; Kern County; Cal Fire

Onyx Ranch South Fork Valley Water Project

Figure 3.10-1
Fire Hazard Zones

ESA



Path: U:\GIS\G1S\Projects\18xxxx\D180435_Onyx_Ranch\03_MXDs_Projects\DEIR\Fig3_10-2_Historical_Fires.mxd, janderson, 2/25/2020

SOURCE: ESRI, 2018; Rosedale-Rio Bravo Water Storage District; Calfire, 2018

Onyx Ranch South Fork Valley Water Project

Figure 3.10-2
Historical Fires

ESA

Emergency Plans

Kern County Emergency Operations Plan

The Kern County Fire Department has prepared the Kern County Emergency Operations Plan (EOP). The most current version of the EOP, dated 2008, identifies and provides information on the hazards that Kern County is susceptible to, including wildland fire, flooding, and severe weather. The EOP includes 12 functional annexes including fire, rescue, and hazardous materials operations, logistics, debris management, and recovery operations. The EOP establishes an emergency management organization and assigns functions and tasks consistent with the California's Standard Emergency Management System (SEMS) and the National Incident Management System (NIMS). Kern County is the lead agency for the Kern Operational Area (Kern OA) addressed by the EOP and is tasked with coordination of emergency activities between the County, cities, and special districts and to serve as a communications link focusing on the collection, processing, and dissemination of vital disaster information. The EOP establishes policies, procedures, and an emergency management organization and assigns roles and responsibilities to ensure the effective management of emergency operations within Kern County and the Kern OA. This includes the planned response to disasters and supports the California Emergency Plan. Additionally, the EOP identifies sources of external support that might be provided through mutual aid and specific statutory authorities by other jurisdictions, State and federal agencies, and the private sector (KCFD, 2019b).

Kern River Valley Community Response Plan

In 2003, the Kern County Office of Emergency Services developed the Kern River Valley Community Response Plan (KRVCRP). The KRVCRP provides the emergency procedures that would be taken in the event of any major emergency or disaster that occurs in the Kern River Valley (Kern County, 2011).

Kern County Multi-Jurisdiction Hazard Mitigation Plan

The Kern County Multi Jurisdiction Hazard Mitigation Plan (Plan), originally adopted in November 2005, was developed by the Kern County Office of Emergency Services. An update of the Plan occurred in 2012. The Plan was prepared for the purpose of reducing or eliminating the long-term risk to people and property from natural disasters and their effects. The Plan was prepared to meet the requirements of the Disaster Mitigation Act, provide objectives based on the risk assessment to mitigate future disaster losses, and review the County's current capabilities to reduce hazard impacts. The Plan addresses the unincorporated areas of the County, 11 incorporated municipalities, and 45 special districts including school districts, recreation and park districts, water districts, community services districts, and other districts. These have formally adopted the November 2005 Plan. The Plan is current undergoing a required update process (Kern County, 2011).

Fire Protection for Project Site

Wildland fire protection in California is the responsibility of the local, State, or the federal government depending on the jurisdiction where the fire event is located. The local responsibility areas (LRAs) include incorporated cities, unincorporated County areas, cultivated agriculture

lands, and portions of the desert. LRA fire protection is typically provided by county fire departments, city fire departments, fire protection districts, and by CAL FIRE under contract to local government. The State responsibility area (SRA) is a legal term defining the area where the State has financial responsibility for wildland fire protection. CAL FIRE is responsible for fire protection within State Responsibility Areas (SRA) in most of the counties in the State. However, in Kern, Los Angeles, Marin, Orange, Santa Barbara, and Ventura Counties, SRA fire protection services are provided by these respective counties under contract with CAL FIRE. Known as "Contract Counties," these Counties collectively protect 3.4 million acres of SRA. Contract Counties are responsible for providing the initial response to fires within SRAs. When a wildland fire escapes this initial attack, CAL FIRE responds with firefighting resources to assist the County. The Kern County Fire Department and CAL FIRE resources that provide fire protection for the project site are discussed below (CAL FIRE, 2019c).

Kern County Fire Department

Fire protection services for the non-federal lands in the Kern River Valley (including the project site) and the surrounding area are provided by the Kern County Fire Department. The Kern County Fire Department is responsible for fire protection services, fire prevention services, emergency medical and rescue services, arson investigation, and hazardous materials coordination. According to the Kern County Fire Department, these services are provided from three Kern County Fire Department stations located in the communities of South Lake, Lake Isabella, and Kernville. The average response time for each station is between 5 to 10 minutes, depending on the location of the call. This is consistent with the County's goal of a 9-minute response time in the rural areas of the County, per the Kern County Fire Department Strategic Plan 2030 (Kern County, 2011).

The South Lake Station (Station 71) is located at 9000 Navajo Avenue in the community of Weldon. The response area for the station consists of 496 square miles including the eastern portion of the Kern River Valley, including the project site. The station has three shifts per 24-hour period with each shift being staffed by a three-member crew that includes a Fire Captain, an engineer, and a fire fighter. Station 71 is also staffed with a Battalion Chief for each shift. This Battalion Chief has responsibility for the South Lake Station and the other two stations in the Kern River Valley. The South Lake Station has a Type I engine, a Type III engine, a patrol vehicle, and a reserve engine (Kern County, 2011).

The Lake Isabella Station (Station 72) is located at 4500 Lake Isabella Boulevard in the community of Lake Isabella. The response area for the station consists of 121 square miles including the communities of Lake Isabella and Bodfish. The station has a year-round staff consisting of three shifts per 24-hour period with each shift is staffed by a three-member crew which includes a Fire Captain, an engineer, and a fire fighter. During the fire season, the Rio Bravo Hot Shots, a 21-person interagency group of firefighters, are based out of the Lake Isabella Station. These crew members are County employees and provide assistance to the County and other interagency organizations including BLM, USFS, and Tulare County. Crew 87, consisting of a 14-member crew assigned to assist the USFS fire crew at the USFS Democrat Station, respond to fires and emergencies, particularly in Kern Canyon and the surrounding area. The Lake Isabella Station has a Type I engine and a patrol vehicle (Kern County, 2011).

The Kernville Station (Station 76) is located at 11018 Kernville Road in the community of Kernville. The response area for the station consists of 107 square miles including the community of Alta Sierra. As with the other stations in the Kern River Valley, the station has a year-round staff consisting of three shifts per 24-hour period and each shift being staffed by a three-member crew which includes a Fire Captain, an engineer, and a fire fighter (Kern County, 2011).

In addition to the three stations discussed above, there is an engine house located on Woodland Drive in the community of Wofford Heights. Although the engine house is not staffed, firefighters from any of the three stations or support staff from other County fire stations outside the Kern River Valley, such as Democrat or Inyokern, can drive the reserve engine or use any additional equipment housed in the Wofford Heights facility. (Kern County, 2011).

During a typical call, the closest station to the emergency responds. If a medical emergency call occurs in the community of Weldon, only a single engine would respond. If a structure fire occurs in Weldon, engines from all three stations in the Kern River Valley would respond. In the case of a major fire emergency anywhere in the Kern River Valley, other firefighting support is available from the BLM and the USFS, as discussed below, along with County firefighter staff from Inyokern, Democrat, or even the Metropolitan Bakersfield area. The Fire Department has a mutual aid agreement with fire protection/suppression agencies in the surrounding counties, the USFS, and the BLM (Kern County, 2011).

According to the Kern County Capital Improvement Plan (CIP), due to the travel distance between Woody and Kernville and the potential for a large scale urban/wildland interface fire, the Fire Department anticipates the need for an additional fire station in the Alta Sierra area within the next 5 to 7 years. This station would require 1.5 acres of land with 2,550 square feet of living space and 3,975 square feet designated for apparatus and equipment. This station project is listed in the County CIP and includes all ancillary items required for a standard departmental station (covered wash rack, fire sprinklers, reinforced concrete paving, fuel storage, block wall, communications tower, and security gates). The new Alta Sierra station would require a Type I rescue engine and a patrol vehicle (Kern County, 2011). However, according to the Kern County Fire Department and the information contained in the Kern County CIP, with the existing and planned fire facilities and equipment, the existing fire protection levels provided within the Kern River Valley are adequate at this time.

Through the Kern County Fire Department’s mutual aid agreements with the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM), these agencies also provide fire protection services for the Kern River Valley based on the location, type of fire, and the availability of resources at the Kern County Fire Department stations at the time of the fire (KCFD, 2019e). As discussed above, when a wildland fire escapes this initial attack, CAL FIRE responds with firefighting resources to assist the County. The fire protection services provided by these agencies are discussed below.

California Department of Forestry and Fire Protection

CAL FIRE is dedicated to fire protection and stewardship of over 31 million acres of California's privately-owned wildlands. CAL FIRE’s mission includes management and protection of

California's natural resources, CAL FIRE's firefighters, fire engines, and aircraft respond to an average of more than 5,600 wildland fires each year and oversees enforcement of California's forest practice regulations, which guide timber harvesting on private lands (KCFD, 2019b).

As previously discussed, The Kern County Fire Department has a Contract County agreement with CAL FIRE to provide the initial response to wildfires. If needed, CAL FIRE can provide additional resources including those stationed at CAL FIRES' Tulare Unit (Tyler Creek) Station 32 in California Hot Springs or air tanker support from Porterville (CAL FIRE, 2019d).

U.S. Forest Service

Fire protection services are provided by the U.S. Forest Service (USFS) for the portions of the Kern River Valley within the Sequoia National Forest and the adjacent public and private lands that may affect the National Forest. The USFS has both year-round and seasonal support for fire suppression activities. During fire season (which usually runs from May through October), the USFS Helitack facility is operational at the Kern Valley Airport. The USFS contracts for the helicopter and the pilot. Additional air support contract services include the lead plane, air tankers, pilots, and fuel support personnel that are headquartered at Air Attack Base in Porterville. If additional air tanker support is needed, air tankers could travel from the Air Attack Base facilities at Fox Field in Lancaster or the Los Padres National Forest (Kern County, 2011).

The USFS has fire engines along with three permanent local support personnel based at the Kernville Ranger Station. In addition, they have a facility in Kernville where they store equipment and materials. During fire season, 14 seasonal personnel provide additional support. In addition to the fire engines and air support, the USFS has the following firefighting support services: seasonal fire look-outs; prevention units (patrol units); seasonal three 20-person hand crews; and permanent 3- or 4-person hand crews. The seasonal fire crews are housed in government-owned barracks in Kernville, Havilah, Democrat, and Black Rock (Kern County, 2011).

Bureau of Land Management

Fire protection services are provided by the Bureau of Land Management (BLM) for the portions of the Kern River Valley that are BLM-managed lands and the adjacent public and private lands that may affect those lands. The BLM Bakersfield Field Office of the firefighting organization has primary responsibility for protecting 1.5 million acres of land throughout the area managed by the BLM Bakersfield Office from wildfires. The firefighting resources from the Bakersfield Field Office include the Rio Bravo Helitack Crew, the Kern Valley Hotshot Crew, and engine crews. The Bakersfield Field Office operates eight BLM fire stations during the peak fire season from mid-April to the end of October. Four of the eight stations are located in Kern County: South Fork, Kernville, Midway (Taft), and the Metropolitan Bakersfield area. Of these, the Kernville Station is located in the vicinity of the project site and the South Fork Station is located to the east of the project site. The fire station in Kernville is operated jointly by both the USFS and the BLM (Kern County, 2011).

The BLM Bakersfield Field Office works cooperatively with many other federal, State, and County agencies and fire departments. The Interagency Working Group Agreement for the BLM Bakersfield Field Office addresses fire services for the following:

1. Forest lands managed by the Sequoia National Forest located in Fresno, Tulare, and Kern Counties including the Giant Sequoia National Monument.
2. Public lands managed by the BLM Bakersfield Field Office throughout Tulare, Fresno, Kings, Kern, Madera, San Luis Obispo, Santa Barbara, and Ventura Counties.
3. Public and private land under the direct protection of the Kern County Fire Department.
4. Land within the boundaries of the Tule River Indian Reservation located in Tulare County (Kern County, 2011).

The BLM fire staff consists of 35 full-time employees that increase during fire season to an approximately 80-person work crew. This includes the Kern Valley Hotshot Firefighting Crew and engine crews. The BLM Bakersfield "Metro" fire station, located at the BLM Bakersfield Field Office, includes a shop building and a fire warehouse where other firefighting equipment and supplies are stored. The BLM fire dozer is kept at the USFS Kernville fire station. During fires, the BLM Interagency Dispatch Center in Porterville is open 24 hours per day to provide aerial and ground firefighting support and coordination (Kern County, 2011).

Although located outside the Kern River Valley, the Bakersfield "Metro" Station crew works closely with other agencies such as the Kern County Fire Department, the USFS, the BLM, and the City of Bakersfield Fire Department. The Bakersfield "Metro" Station crew and engine responds to fires in a variety of fire environments, including the grassy rolling hills surrounding the City of Bakersfield to large brush and timber fires in the mountains in and around Kern County (Kern County, 2011).

Responsible for the protection of the BLM lands around Kern, San Luis Obispo, and Tulare Counties, the Bakersfield "Metro" Station has Engine 3130 (a Type III engine that is equipped with a Compressed Air Foam System [CAFS]). The engine is staffed 7 days a week with a crew of five. Personnel for this fire station are available 24 hours a day for assignments. The BLM "Metro" fire station crews have been trained in such areas as progressive hose lays, mobile attack, urban-interface structure protection, line construction, and prescribed burns (Kern County, 2011).

As indicated above, the two BLM fire stations within or near the Kern River Valley are located in the communities of South Fork and Kernville. The South Fork Station, located on SR 178 east of the community of Onyx in the Canebrake area to the east of the project site, is the BLM's most active station. Due to its location, crew members are often the first units to respond to calls for assistance at vehicle accidents and medical emergencies in the eastern portion of the Kern River Valley. About 80 percent of calls, however, are fire-related. The South Fork Station is staffed 7 days a week during the May through October fire season. Barracks are also provided at the fire station to house the on-duty crews stationed at the facility. The two engines stationed at South Fork are a Type III model 14 engine and a Type IV engine. The South Fork Station has a new chipper for use in the Kern River Valley. This chipper is a tool used by both BLM and interagency partners to reduce fire hazards. The interagency partners have spent hours helping

local residents clear the heavy brush and tree limbs that accumulate around the businesses and homes in the Kern River Valley and adjacent federal lands (Kern County, 2011).

The Kernville Station is staffed 7 days a week during fire season. As described above, the BLM dozer is stationed at the USFS's work center at Kernville. The BLM equipment at the Kernville Station includes a 3,500-gallon water tender, a dozer tender, a dozer transport, and a D6H bulldozer. The Kernville Station crew provides initial attack and bulldozer support for wildfires in the Kern River Valley. The crew may utilize the barracks that support both the BLM and bulldozer support for wildfires in the Kern River Valley. The crew may also utilize barracks that support both the BLM and USFS personnel at the Kernville Station (Kern County, 2011).

Vector Hazards

A disease vector is an organism, such as an insect, rodent, or fungus that carries disease. Species defined as vectors may occur as part of a natural or farming/ranching-adapted environment, including mosquitoes, ticks, and rodents. Since the majority of the land uses in the project area are natural open space and agricultural lands, there is the potential for naturally occurring species to carry disease into the human population within the project site and surrounding area (Kern County, 2011). Insect-type vectors are commonly associated with stagnant water and mosquitoes are the primary insect vector of concern. The existing operations include routing surface water through irrigation ditches for the irrigation of agricultural fields, which may occasionally result in standing water. Other vectors include fleas that transmit diseases from infected rodents, such as the plague, and ticks that carry diseases, such as Lyme disease. The feed provided for farm animals and the irrigation of fields can provide habitat for rodents, which in turn can support fleas and ticks (Kern County, 2011).

Cumulative Setting

As discussed in Section 3.2 Cumulative Impacts Methodology the geographic area addressed in the analysis of cumulative impacts varies depending on the environmental topic being analyzed. The geographic area for the analysis of the potential cumulative impacts of the proposed project and cumulative projects related to hazards and hazardous materials is limited to the project site and surrounding area as described above. This is because impacts relative to hazards and hazardous materials are generally site-specific. However, the effect of wildland fire hazards that could be initiated on the project site would only be cumulative if the effect of the wildland fire hazard occurred on one or more of the identified cumulative projects during the same timeframe.

The timeframe during which the proposed project could contribute to cumulative impacts related to hazards includes the implementation and operational phases. For the proposed project, the operational phase would be permanent. Similar to the geographic limitations discussed above, it should be noted that the effects relative to hazards and hazardous materials are generally time-specific. Hazards could be cumulative if two or more hazards occurred at the same time and overlapped geographically.

3.10.2 Regulatory Framework

Federal

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) (42 U.S.C §6901-6987) was enacted in 1976 and gave the U.S Environmental Protection Agency (USEPA) the authority to control hazardous waste from "cradle-to grave" which includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled the USEPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. The Federal Hazardous and Solid Waste Amendments (HSWA) were added to the RCRA in 1984 and focused on waste minimization and phasing out land disposal of hazardous waste as well as corrective action for releases. Some of the other mandates of this law include increased USEPA enforcement authority, more stringent hazardous waste management standards, and a comprehensive underground storage tank program.

State of California

Department of Toxic Substance Control

Under the California Hazardous Waste Control Act, California Health and Safety Code, Division 20, Chapter 6.5, Sections 25100, et seq., the Cal/EPA, DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste in California. Under the RCRA, individual states may implement their own hazardous waste programs in lieu of the RCRA, as long as the USEPA has determined the State program is at least as stringent as federal RCRA requirements. California's hazardous waste program has been federally approved. Thus, in California, the Department of Toxic Substances (DTSC) enforces hazardous waste regulatory requirements. The hazardous waste regulations address the following: establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills.

DTSC is the administering agency for the California Hazardous Substance Account Act, California Health and Safety Code, Division 20, Chapter 6.8, Sections 25300 et seq. (known as the State Superfund law), which provides for the investigation and remediation of hazardous substances pursuant to State law.

DTSC maintains a Hazardous Waste and Substances Site List for site cleanup. This list is commonly referred to as the Cortese List. Government Code Section 65962.5 requires the California Environmental Protection Agency (CalEPA) to update the Cortese List at least annually. DTSC is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List.

California Department of Forestry and Fire Protection

CAL FIRE is dedicated to fire protection and stewardship of over 31 million acres of California's privately owned wildlands. CAL FIRE's mission includes management and protection of California's natural resources, CAL FIRE's firefighters, fire engines, and aircraft respond to an average of more than 5,600 wildland fires each year and oversees enforcement of California's forest practice regulations, which guide timber harvesting on private lands.

CAL FIRE provides Fire Hazard Severity Zone Maps for SRA lands as discussed above in Section 3.10 Environmental Setting. In addition, CAL FIRE requires counties within the State to develop fire protection management plans that address potential threats of wildland fires. The Kern County Wildland Fire Management Plan identifies federal, State, and local responsibility areas for the entire County to facilitate coordination efforts for fire protection services. Refer to the discussion of the Kern County EOP provided above.

California Public Resources Code Section 4291

California Public Resources Code Section 4291 establishes requirements for property owners that own, lease, control, operate, or maintain a building or structure in, upon, or adjoining any mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material. Code Section 4291 states the following requirements:

(a) A person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material, shall at all times do all of the following:

(1) Maintain defensible space of 100 feet from each side and from the front and rear of the structure, but not beyond the property line except as provided in paragraph (2). The amount of fuel modification necessary shall take into account the flammability of the structure as affected by building material, building standards, location, and type of vegetation. Fuels shall be maintained in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure. This paragraph does not apply to single specimens of trees or other vegetation that are well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to a structure or from a structure to other nearby vegetation. The intensity of fuels management may vary within the 100-foot perimeter of the structure, the most intense being within the first 30 feet around the structure. Consistent with fuels management objectives, steps should be taken to minimize erosion. For the purposes of this paragraph, "fuel" means any combustible material, including petroleum-based products and wildland fuels.

(2) A greater distance than that required under paragraph (1) may be required by state law, local ordinance, rule, or regulation. Clearance beyond the property line may only be required if the state law, local ordinance, rule, or regulation includes findings that the clearing is necessary to significantly reduce the risk of transmission of flame or heat sufficient to ignite the structure, and there is no other feasible mitigation measure possible to reduce the risk of ignition or spread of wildfire to the structure. Clearance on adjacent property shall only be conducted following written consent by the adjacent landowner.

(3) An insurance company that insures an occupied dwelling or occupied structure may require a greater distance than that required under paragraph (1) if a fire expert, designated by the director, provides findings that the clearing is necessary to significantly reduce the risk of transmission of flame or heat sufficient to ignite the structure, and there is no other feasible mitigation measure possible to reduce the risk of ignition or spread of wildfire to the structure. The greater distance may not be beyond the property line unless allowed by state law, local ordinance, rule, or regulation.

(4) Remove that portion of a tree that extends within 10 feet of the outlet of a chimney or stovepipe.

(5) Maintain a tree, shrub, or other plant adjacent to or overhanging a building free of dead or dying wood.

(6) Maintain the roof of a structure free of leaves, needles, or other vegetative materials.

(f) As used in this section, "person" means a private individual, organization, partnership, limited liability company, or corporation.

California Code of Regulations, Fire Hazard Reduction Around Buildings and Structures (Title 14, Division 1.5, Chapter 7, Subchapter 3, Article 3)

The intent of this regulation is to provide guidance for implementation of Public Resources Code Section 4291(a), and minimize the spread of fire within a 100-foot zone around a building or structure. These regulations would apply to the project site because it is located within a high fire hazard severity area. This regulation states the following:

Defensible space is required to be maintained at all times, whenever flammable vegetative conditions exist. One hundred feet (100 ft.) of defensible space clearance shall be maintained in two distinct "Zones" as follows: "Zone 1" extends thirty feet (30 ft.) out from each "Building or Structure," or to the property line, whichever comes first; "Zone 2" extends from thirty feet (30 ft.) to one hundred feet (100 ft.) from each "Building or Structure," but not beyond the property line. The vegetation treatment requirements for Zone 1 are more restrictive than for Zone 2, as provided in (a) and (b) below. The Department of Forestry and Fire Protection's "Property Inspection Guide, 2000 version, April 2000," provides additional guidance on vegetation treatment within Zone 1 and Zone 2, but is not mandatory and is not intended as a substitute for these regulations.

(a) Zone 1 Requirements:

(1) Remove all dead or dying grass, plants, shrubs, trees, branches, leaves, weeds, and pine needles from the Zone whether such vegetation occurs in yard areas around the "Building or Structure," on the roof or rain gutters of the "Building or Structure," or any other location within the Zone.

(2) Remove dead tree or shrub branches that overhang roofs, below or adjacent to windows, or which are adjacent to wall surfaces, and keep all branches a minimum of ten feet (10 ft.) away from chimney and stovepipe outlets.

(3) Relocate exposed firewood piles outside of Zone 1 unless they are completely covered in a fire resistant material.

(4) Remove flammable vegetation and items that could catch fire which are adjacent to or under combustible decks, balconies and stairs.

(b) Zone 2 Requirements:

(1) In this zone create horizontal and vertical spacing among shrubs and trees using the "Fuel Separation" method, the "Continuous Tree Canopy" method or a combination of both to achieve defensible space clearance requirements. Further guidance regarding these methods is contained in the State Board of Forestry and Fire Protection's, "General Guidelines for Creating Defensible Space, February 8, 2006," incorporated herein by reference, and the "Property Inspection Guide" referenced elsewhere in this regulation.

(2) In both the Fuel Separation and Continuous Tree Canopy methods the following standards apply:

(A) Dead and dying woody surface fuels and aerial fuels shall be removed. Loose surface litter, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches, shall be permitted to a maximum depth of three inches (3 in.).

(B) Cut annual grasses and forbs down to a maximum height of four inches (4 in.).

(C) All exposed wood piles must have a minimum of ten feet (10 ft.) of clearance, down to bare mineral soil, in all directions.

(c) For both Zones 1 and 2:

(1) "Outbuildings" and Liquid Propane Gas (LPG) storage tanks shall have the following minimum clearance: ten feet (10 ft.) of clearance to bare mineral soil and no flammable vegetation for an additional ten feet (10 ft.) around their exterior.

(2) Protect water quality. Do not clear vegetation to bare mineral soil and avoid the use of heavy equipment in and around streams and seasonal drainages. Vegetation removal can cause soil erosion, especially on steep slopes. Keep soil disturbance to a minimum on steep slopes.

California Vehicle Code Section 38366

The California Vehicle Code, Section 38366, requires spark-arresting equipment on vehicles that travel off-road. This code applies to the project site because farm and ranch vehicles work in off-road areas.

Local

Certified Unified Program Agency

In 1993, Senate Bill (SB) 1082 was passed by the State Legislature to streamline the permitting process for those businesses that use, store, or manufacture hazardous materials. The passage of SB 1082 provided for the designation of a Certified Unified Program Agency (CUPA) that would be responsible for the permitting process and collection of fees. The CUPA would be responsible for implementing at the local level the Unified Program, which serves to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for the following environmental and emergency management programs:

- Hazardous Materials Release Response Plans and Inventories (HMBPs)
- California Accidental Release Prevention (CalARP) Program

- Underground Storage Tank Program
- Aboveground Petroleum Storage Act Requirements for Spill Prevention, Control and Countermeasure (SPCC) Plans
- Hazardous Waste Generator and On-Site Hazardous Waste Treatment (tiered permitting) Programs
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements

For Kern County, the Kern County Public Health Services Department administers hazardous materials business plans, hazardous waste, tiered permits, CalARP, and underground and aboveground storage tanks. The Kern County Fire Department administers the California Fire Code, hazardous materials storage, and toxic gases. Contractors would be required to comply with the regulatory programs overseen by the CUPA.

Kern County Fire Department Fire Hazard Reduction Program

The Kern County Fire Hazard Reduction Program (FHRP) is a joint effort between the Kern County Fire Department, CAL FIRE, Kern County Code Enforcement, and property owners to ensure fire safe communities within the County. The program is currently administered and enforced by Kern County Fire Department personnel to enforce Kern County Ordinance Code 8.46 in accordance with other State and federal guidelines. The goal is to provide sufficient defensible space around homes and other structures to improve the safety of the public and emergency personnel. Heavy accumulations of fuel and/or dry fuel poses a significant risk to property, neighboring properties, and fire personnel. Inspections are typically done once a year after June 1 in preparation for the fire season. Property owners are expected to keep their properties clear of fire hazards year round (Kern County Fire Department, 2019c).

Property owners are expected to maintain their property free of fire hazards and accumulated vegetation growth throughout the year. June 1 is the deadline for completion of this clearance prior to annual inspections. All structures on the property, regardless of construction type or use, are required to have a minimum of 30 feet of clearance and 100 feet of fuel reduction, or to the property line if closer. Any vegetation within these zones should be green, ornamental trees, grass and shrubs only, and should be spaced out and have sufficient ground clearance to discourage fire spread. For vacant properties with no structures, the requirement is to provide a minimum 10-foot fuel break along all property lines that lie within 100 feet of any structures on neighboring properties (Kern County Fire Department, 2019c). In addition, property owners are required to remove accumulation of combustible fuels that can be deemed a fire hazard (Kern County Fire Department, 2019d).

Kern County Vector Control

The Kern County Environmental Health Services Department (KCEHSD) reviews any future projects in the Kern River Valley to ensure compliance with any and all State and County vector control requirements, and determines whether a pest/vector management plan is necessary. If a pest/vector plan is required, it is reviewed and approved by the KCEHSD.

South Fork Mosquito Abatement District

The South Fork Mosquito Abatement District (associated with the Kern Mosquito and Vector Control District) was established to achieve the elimination of mosquito breeding places in the South Fork Valley. The South Fork Mosquito Abatement District is an independent district established by the Kern Board of Supervisors Resolution No. 69-387 of June 9, 1969, pursuant to Sections 2024 and 2023 of the California Health and Safety Code. The South Fork Mosquito Abatement District accomplishes objectives through an educational service on control measures, performing services of temporary relief control, establishing projects of source reduction, using abatement procedure methods when necessary, and by a general policy of cooperation.

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, policies, and implementation measures of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the Kern River Valley Specific Plan (KRVSP) area, which was addressed in the KRVSP adopted by Kern County in 2011. The KRVSP consists of elements that include goals, policies, and implementation measures related to wildland fires within the Kern River Valley. The applicable elements and their goals, polices, and implementation measures are as follows:

Public Safety Element

The Public Safety Element describes the Kern River Valley as being susceptible to several natural hazards, including wildland fires. According to the Public Safety Element, the project site would be located within a high fire hazard severity area. The Public Safety Element factors wildland fire hazards into the Kern River Valley's land use planning through the goals, policies, and implementation measures listed below.

Wildland Fire

Goal 6.1.1: Protect structures from wildland fires through vegetation management.

Goal 6.1.2: Ensure that infrastructure such as emergency water sources, road access, address displays, and other support systems are sufficient to protect residents against wildland fires.

Policy 6.1.8: Property owners shall maintain minimum weed abatement or vegetation clearing around and within individual lots as specified by the Kern County Building Code addressing weeds (Chapter 8.46), which is administered by the Kern County Fire Department.

Policy 6.1.9: Encourage the use of defensible space principles, including revegetation with less flammable species and the use of mulch to prevent erosion on bare soil.

Implementation 6.1.6: Require that all roads in wildland fire areas are well marked and that homes have addresses prominently displayed.

Implementation 6.1.11: The Kern County Fire Department shall continue to work with property owners to maintain minimum weed abatement or vegetation clearing around and within individual lots as specified by the Kern County Building Code addressing weeds (see Code 8.46).

Public Facilities and Services Element

The Public Facility and Services Element describes the systems that must be maintained to ensure that existing residents and businesses have service. In addition, this Element addresses law enforcement, fire protection, and emergency response needed in the event of any major emergency or disaster that occurs in the Kern River Valley. This includes the provision of fire prevention and protection services related to wildland fires as addressed through the goal, policies, and implementation measure listed below.

Law Enforcement, Fire Protection and Emergency Response

Goal 9.4.1: Provide adequate emergency and fire protection and law enforcement for the residents of Kern River Valley.

Policy 9.4.1: Ensure that new development does not create a burden on adequate levels of law enforcement and fire protection services.

Policy 9.4.2: The County will ensure adequate police and fire protection to all Kern River Valley residents. (see also Wildland Fire for additional fire protection policies).

Policy 9.4.3: Utilize the Kern River Valley Community Response Plan and, once adopted, the Multi-Jurisdictional [sic] Hazard Mitigation Plan during an emergency.

Implementation 9.4.1: The Kern County Planning Department will coordinate with the Kern County Sheriff's and Fire Departments on discretionary projects to maintain adequate levels of service. (see also Wildland Fire for additional fire protection implementation)

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009). The Safety Element addresses general safety issues, hazardous materials, wildland and urban fires, and emergency plans as discussed below.

Safety Element

The Safety Element identifies issues, goals, policies, and implementation measures to protect the community from unreasonable risks associated with general safety, hazardous materials, wildland and urban fires, and emergency plans. The applicable issues, goals, policies, and implementation measure are as follows:

General Safety Issues:

- The control of the production, usage, transportation, and disposal of hazardous substances, is a matter of both Statewide and local concern.
- Remote areas of the County require secondary means of access points for evacuation in case of fire or other emergency.

General Safety Goals:

Goal 1: Minimize injuries and loss of life and reduce property damage.

Goal 8: Reduce the public's exposure to fire, explosion, blowout, and other hazards associated with the accidental release of crude oil, natural gas, and hydrogen sulfide gas.

Policies and Implementation Measure that Apply to more than one Safety Constraint

Policy 1: That the County's program of identification, mapping, and evaluating the geologic, fire, flood safety hazard areas, and significant concentrations of hydrogen sulfide in oil field areas, presently under way by various County departments, be continued.

Policy 3: That the County government encourage public support of local, State, and federal research programs on geologic, fire, flood hazards, valley fever, plague, and other studies so that acceptable risk may be continually reevaluated and kept current with contemporary values.

Implementation Measure A: All hazards (geologic, fire, and flood) should be considered whenever a Planning Commission or Board of Supervisors action could involve the establishment of a land use activity susceptible to such hazards.

Hazardous Materials

Implementation Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

Wildland and Urban Fire

Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.

Policy 2: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.

Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Policy 5: Require that all roads in wildland fire areas are well marked, and that homes have addresses prominently displayed.

Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

Emergency Plan

Policy 1: Continue to maintain and update the Kern County Emergency Plan.

Policy 2: Monitor, enforce, and update, as appropriate, all emergency plans as needs and as conditions change.

Implementation Measure C: Require emergency plans to include procedures for traffic control and security of damaged areas.

3.10.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to pages 3.10-1 and 3.10-2 above for a summary of the environmental issues included in this Draft EIR for the analysis of hazards and hazardous materials. This Draft EIR assumes that the implementation of the proposed project would have a significant impact related to hazards and hazardous materials if it would:

- 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 create a significant hazard to the public or the environment.
- Be located in or near State Responsibility Areas (SRAs) or lands classified as very high fire severity zones, and result in any or all of the following:
  - Substantially impair an adopted emergency response plan or emergency evacuation plan.
  - Expose people or structures to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors that exacerbate wildfire risks.
  - 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.
- Generate vectors (domestic flies, mosquitoes, cockroaches, rodents, and/or any other vectors) or have a component that includes agricultural waste that would generate vectors that exceed the following qualitative thresholds established by the applicable enforcement agency:
  - Occur as immature stages and adults in numbers considerably in excess of those found in the surrounding environment.
  - Are associated with design, layout, and management of project operations.
  - Disseminate widely from the property.
  - Cause detrimental effects on the public health or wellbeing of the majority of the surrounding population.

Methodology

This environmental analysis of the potential impacts related to hazardous materials is based on the following information: the definition of the proposed project provided above in Chapter 2 Project Description; a review of documents regarding hazards, hazardous materials, wildland fires, and vectors; and the regulatory framework summarized above in Section 3.10.2. The existing conditions on the project site, as described above in Section 3.10.1, defines the baseline

conditions for the impact analysis. The analysis of the potential effects of the proposed project on hazards and hazardous materials is discussed in the Impact Analysis provided below.

Impact Analysis

Hazardous Materials Sites

Potential Impact HAZ-1: Would the proposed project 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 and the environment?

As discussed in Section 3.10.1 Environmental Setting, two Phase I ESAs were conducted in 2008 and 2019 to evaluate Onyx Ranch and Smith Ranch. The Phase I ESAs conducted site visits and evaluated the project site and the surrounding area for potential hazards and hazardous material issues (ESA, 2019). Additionally, a search for hazardous materials sites was performed for the two Phase I ESAs using the SWRCBs GeoTracker and DTSCs EnviroStor databases. These documents concluded that the project site and the adjacent area does not include any listed hazardous materials sites pursuant to Government Code Section 65962.5. Therefore, the proposed project would not create a significant hazard to the public or the environment through exposure to previously identified hazards and hazardous materials on the project site or in the adjacent area. With implementation of the proposed project, no impact would occur.

Mitigation Measures

None required.

Significance Determination

No Impact

Impact Summary

- The proposed project would not be located on or adjacent to a site identified as a listed hazardous materials site pursuant to Government Code Section 65962.5. Therefore, the proposed project would not create a significant hazard to the public or the environment through the release of hazardous materials. No impact would occur.

Emergency Response and Evacuation Plans

Potential Impact HAZ-2: Since the project site is located in an SRA and portions of the project site are classified as a very high fire severity zone, would the proposed project substantially impair an adopted emergency response plan or emergency evacuation plan?

As discussed above in Section 3.10.1 Environmental Setting, the Kern County EOP addresses the hazards that Kern County is susceptible to, including wildland fires. In the event of a wildland fire on the project site and the surrounding properties in the South Fork Valley, the Kern County

Fire Department would be the first responder. Although the project site is in a SRA, Kern County is a "Contract County," and, therefore, provides fire protection under contract to CAL FIRE for wildland fires within the County's jurisdiction. If the wildland fire escapes the initial attack by the Kern County Fire Department, CAL FIRE would respond with firefighting resources to assist the County. These agencies would be further assisted by the USFS and BLM, as well as other fire departments through mutual aid agreements. All fire protection activities would occur in compliance with the Kern County EOP.

The proposed project would involve agricultural equipment similar to the equipment that is currently used on the project site. As stated in Chapter 2 Section 2.7 Description of the Proposed Project, operation of the proposed project would involve management of the non-irrigated pastures used for grazing lands and native vegetation. Management activities would be less intensive for the drought-tolerant vegetation than for the existing row crops because the proposed project would not require annual replanting. The management of livestock would be similar to existing operations on the project site and would include transporting cattle to other areas on-site for grazing when the forage material has been consumed. Therefore, the proposed project would not introduce additional vehicles or equipment that would create a change in traffic volumes. Additionally, the proposed project would not include changes to adjacent roadways or other access points to the project site or create traffic that would impair any EOP operations or emergency access that would take place on the project site or in the surrounding area. The proposed project would have no impact to the emergency response or emergency evacuation plan as defined by the Kern County EOP.

Mitigation Measures

None required.

Significance Determination

No Impact

Impact Summary

- The proposed project would not include changes to adjacent roadways or other access points to the project site or create traffic that would impair any EOP operations or emergency access that would take place on the project site or in the surrounding area. The proposed project would have no impact to the emergency response or emergency evacuation plan as defined by the Kern County EOP.

Exposure to Pollutants from Wildfire

Potential Impact HAZ-3: Would the proposed project expose people or structures to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors that exacerbate wildfire risks?

As described above in Section 3.10.1 Environmental Setting, the project site has areas that are designated as high fire severity zones and very high fire hazard severity zones on CAL FIRE's California Statewide Fire Map (see Figure 3.10-1). In addition, the proposed project site is located in an area with a recent history of wildland fires. According to data from CAL FIRE, 11 fires have occurred within 3 miles of the project site from 2009 to 2018 (see Figure 3.10-2) (CAL FIRE, 2019b).

There are non-pasture vegetation communities within the project site that are highly flammable. These areas are currently not irrigated and would continue to not be irrigated with implementation of the proposed project. Therefore, since existing conditions would not change in these areas, implementation of the proposed project would not affect the existing flammability of non-pasture vegetation on the project site.

As discussed in Chapter 2 Project Description, as part of Project Element 6 – Land Management, with implementation of the proposed project, the fields and pastures currently irrigated with surface water on the Onyx Ranch would no longer be irrigated with surface water and would transition to non-irrigated pasture or native vegetation, except for Boone Field which would continue to be irrigated with surface water or fallowed. In addition, the volume of surface water used on the Smith Ranch would be reduced by one-third, although the land use would remain unchanged. Overall, the amount of irrigation provided by surface water from the South Fork of the Kern River on the Onyx Ranch and the Smith Ranch would decrease. The transition from irrigated pasture and croplands to non-irrigated pasture and native vegetation would result in drier conditions and drier vegetation on the project site. These changes in the existing conditions with the proposed project have the potential to exacerbate wildfire risks on the project site where the proposed non-irrigated pastures and native vegetation would occur. This increase in the potential for wildfire risks could increase the potential for the exposure of people and structures to fire-related hazards on the project site and in the adjacent lands. In addition, this change in the existing conditions could contribute to an uncontrolled spread of a wildfire during high wind conditions and/or in the areas with slopes on the project site and in the adjacent areas.

With the proposed project, the areas with non-irrigated pastures and native vegetation on the project site would be considered vacant properties and, to reduce fire danger and flammability associated with the increase of flammable vegetation, the RRBWSD would be required to adhere to the adopted wildfire regulations discussed above in Section 3.10.2 Regulatory Framework, including Public Resources Code 4291, 14 CCR Division 1.5 Chapter 7, the Public Safety Element of the KRVSP, the relevant goals, policies and implementation measures of the Kern County General Plan, and the Kern County Fire Department Fire Hazard Reduction Program. In accordance with these regulations, the RRBWSD is currently required to and would continue to be required to, provide a minimum 10-foot fuel break along all property lines that lie within 100 feet of any structures on neighboring properties and remove any accumulation of combustible

fuels that can be deemed a fire hazard. The Kern County Fire Department would continue to conduct inspections of the project site after June 1st of each calendar year to ensure that all required clearance guidelines in the Fire Hazard Reduction Program have occurred. In addition, off-road equipment used on the project site, such as farm and ranch mechanized equipment, would be required to have spark arresters to prevent igniting dry vegetation. With adherence to the adopted regulatory requirements that address fire hazard reduction, implementation of the proposed project would not expose people or structures to significant risks from pollutant concentrations from a wildfire or cause the uncontrolled spread of a wildfire. The impact would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The proposed project would increase the volume of flammable vegetation on the project site. With adherence to the regulatory requirements that address fire hazard reduction, implementation of the proposed project would not expose people or structures to significant risks from pollutant concentrations from a wildfire or cause the uncontrolled spread of a wildfire. The impact would be less than significant.

Wildfire Risks

Potential Impact HAZ-4: Would the proposed project 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?

As discussed above for Potential Impact HAZ-3, the changes to the existing conditions on the project site as a result of the proposed project would occur to the agricultural fields and pastures. These are located on the relatively level areas on the project site and not the adjacent hillsides within the project site. With implementation of the proposed project, no changes would occur to the existing conditions in these hillside areas and, therefore, in the event of a fire followed by a rain event, would not result in an increase in the risk of downslope or downstream flooding or landslides. The impact would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The changes to the existing conditions on the project site as a result of the proposed project would occur to the agricultural fields and pastures located on the relatively level areas on the project site. With implementation of the proposed project, no changes would occur to the existing conditions in the hillside areas and, therefore, in the event of a fire followed by a rain event, would not result in an increase in the risk of downslope or downstream flooding or landslides. The impact would be less than significant.

Vectors

Potential Impact HAZ-5: Would the proposed project generate vectors or have a component that includes agricultural waste that would generate vectors that exceed the qualitative thresholds established by the applicable enforcement agency?

As described in Chapter 2 Section 2.7 Description of the Proposed Project, the proposed project would change the points of diversion and place of use for the water rights associated with the project site so that the water can be delivered in the RRBWSD service area in the San Joaquin Valley. The RRBWSD proposes to reduce the diversion and use of surface water on the project site by converting irrigated fields to non-irrigated pasture or native vegetation. The proposed project would not replace reduced surface water diversions with groundwater pumped on the project site. With the proposed project, surface water that is diverted under the existing condition would remain in the South Fork of the Kern River and flow downstream. The increased flows would be released through the Isabella Dam and flow downstream in the Lower Kern River until they reach the RRBWSD diversion points. From there, the RRBWSD would deliver the water to their surface recharge basins and channels within and near its service area west of the City of Bakersfield.

The reduction in the amount of surface water diverted to the project site to irrigate agricultural fields and pastures would decrease the potential for standing water that could attract vectors, such as mosquitoes, or provide conditions for breeding. Additionally, with the proposed project, the surface water that would remain in the South Fork of the Kern River would flow to existing surface recharge basins currently owned and used by the RRBWSD for the subsurface storage in their groundwater bank. The proposed project would not result in the construction of new surface recharge basins at the RRBWSD's facilities in the San Joaquin Valley and, therefore, no additional standing water would be introduced. The RRBWSD surface recharge basins in the San Joaquin Valley would continue to be operated in accordance with the Kern Mosquito and Vector Control District's requirements. Therefore, with implementation of the proposed project, no significant impact due to vectors would occur as a result of the changes in the agricultural use of the project site from irrigated fields and pastures to non-irrigated pastures and native vegetation and the addition of surface water to the existing surface recharge basins at the RRBWSD's facilities in the San Joaquin Valley.

Implementation of the proposed project would involve the transition of irrigated fields and pastures to non-irrigated pastures and native vegetation on the Onyx Ranch. This would result in

cattle grazing on portions of the Onyx Ranch that are currently used for the production of row crops, increasing the area that is used actively for grazing. However, as described in Section 3.4 Agriculture of this Draft EIR, the proposed project would result in cattle grazing on natural forage, and agricultural productivity on the Onyx Ranch is anticipated to change from approximately 5,465 AUMs to a range of 284 to 644 AUMs. The number of AUMs onsite on the Onyx Ranch could be greater than 644 AUMs if supplemental feed is used or if supplemental irrigation is provided in accordance with implementation of the Grazing Management Plan. With implementation of the proposed project, no substantial changes to agricultural practices at the Smith Ranch are anticipated other than a 33 percent reduction in the irrigated acres. With implementation of the proposed project, it is estimated that agricultural productivity on Smith Ranch would range from 1,020 AUMs during low productivity years to 1,095 AUMs during high productivity years. Similar to Onyx Ranch, the number of AUMs onsite at Smith Ranch could be greater than 1,095 AUMs if supplemental feed is used, or with implementation of efficiency measures and performance standards in accordance with the Grazing Management Plan.

With the proposed project, there would be a reduced amount of manure generated by the cattle grazing on the project site. The presence and storage of supplemental feed and the presence of manure on the project site would have the potential for vectors such as flies and rodents to occur. Consistent with the current grazing management practices used on the project site, the proposed project would be implemented in accordance with the South Fork Mosquito Abatement District requirements that address vector control. Therefore, the continued presence of manure and supplemental feed on the project site would not cause an increase in vectors. With implementation of the proposed project, no significant impacts due to vectors would occur as a result of the transition of irrigated fields and pastures to non-irrigated pastures and native vegetation.

Mitigation Measures

None required.

Significance Determination

Less Than Significant Impact

Impact Summary

- With implementation of the proposed project, the reduction in the amount of surface water diverted to the project site would decrease the potential for standing water that could attract vectors, such as mosquitoes, or provide conditions for breeding. No significant impact due to vectors would occur as a result of the changes in the agricultural use of the project site from irrigated fields and pastures to non-irrigated pastures and native vegetation and the addition of surface water to the existing surface recharge basins at the RRBWSD's facilities in the San Joaquin Valley.
- The presence of supplemental feed and manure on the project site would have the potential for vectors such as flies and rodents to occur. Consistent with the current grazing management practices used on the project site, the proposed project would be implemented in accordance with the South Fork Mosquito Abatement District requirements that address vector control. Therefore, the continued presence of manure and supplemental feed on the

project site would not cause an increase in vectors. With implementation of the proposed project, no significant impacts due to vectors would occur as a result of the transition of irrigated fields and pastures to non-irrigated pastures and native vegetation.

Potential Cumulative Impacts

Cumulative impacts associated with hazards and hazardous materials could occur if two or more hazards and hazardous materials impacts occurred at the same time in the immediate vicinity of each other. The cumulative projects to be considered in the analysis of cumulative impacts are listed in Table 3-1 and shown on Figure 3-1 in Section 3.2 Cumulative Impacts Methodology. The only cumulative projects that could have impacts to hazards and hazardous materials and that, when combined with the impacts of the proposed project, could result in cumulatively considerable impacts, are Cumulative Project C, Upper Taylor Meadow Gully Repair Project, and Cumulative Project D, Weldon Regional Water District. All other projects are located too far away to result in cumulatively considerable impacts.

As described above under Potential Impacts HAZ-2 and HAZ-3, the project site and the surrounding South Fork Valley is in an area designated by CAL FIRE as high fire hazard severity zones and very high fire hazard severity zones, and they are located in an SRA where the Kern County Fire Department is the first responder. Cumulative Project C is located in an area designated as a high fire severity zone would be subject to federal fire prevention measures. Cumulative Project C is located in the Sequoia National Forest and, therefore, located in a Federal Responsibility Area (FRA). Implementation of Cumulative Project C would involve activities to improve hydrologic function of the South Fork of the Kern River and would not be expected to increase wildland fire risk. Therefore, impacts associated with wildland fire for Cumulative Project C and the proposed project would not combine to create cumulatively considerable impacts relative to wildfires. Cumulative Project D also is located in an area designated as a high fire hazard area; however, the facilities associated with the proposed Water District would not be located in areas with sufficient fuel load to pose a wildland fire hazard, and the proposed Water District would provide a more reliable water source to the Weldon community including water to support “fire flow” (Tom Dodson & Associates, 2020). Therefore, impacts associated with wildland fire for Cumulative Project D and the proposed project would not combine to create cumulatively considerable impacts relative to wildfires

As noted above, Cumulative Project C would involve activities to improve hydrologic function of the South Fork of the Kern River and would not be expected to change the existing conditions relative to vectors. Similarly, Cumulative Project D would not involve facilities or operations that would change existing conditions relative to vectors. Therefore, Cumulative Project C and Cumulative Project D could not combine with the proposed project to create cumulatively considerable impacts relative to vectors.

Mitigation Measures

None required.

Significance Determination

Less Than Significant Impact

Impact Summary

- The cumulative projects in the Kern River Valley would not change the existing conditions relative to wildfires. When the proposed project is considered together with cumulative projects, there would be no cumulatively considerable impacts to wildfire hazards.
- The cumulative projects in the Kern River Valley would not change the existing conditions relative to vectors. When the proposed project is considered together with cumulative projects, there would be no cumulatively considerable impacts to vectors.

3.10.4 References

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3.11 Hydrology and Water Quality

This section addresses the potential impacts related to hydrology and water quality associated with implementation of the proposed project. This section includes: a description of existing hydrology and water quality conditions for the project site and the surrounding area; a summary of applicable regulations related to hydrology and water quality; and an evaluation of the potential for the proposed project to result in environmental impacts related to the hydrology and water quality on the project site and in the surrounding project area. In addition, an evaluation of the potential cumulative impacts is provided.

The NOP and Initial Study prepared for the proposed project indicated that the Draft EIR would analyze the potential for significant impacts related to hydrology and water quality if the proposed project would:

- Violate any water quality standards or otherwise substantially degrade surface or groundwater quality.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.
- Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.
- Expose people or structures in a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

The analysis of these potential impacts is provided below in Section 3.11.3 Impact Analysis and Mitigation Measures.

The CEQA Guidelines were revised on December 28, 2018, which resulted in revisions and reorganization (mostly combining) of the questions about issues in Appendix G Environmental Checklist about potential impacts related to the Hydrology and Water Quality environmental topic. These changes are reflected in the threshold of significance and the analysis of these potential impacts provided below in Section 3.11.3 Impact Analysis and Mitigation Measures.

The NOP and Initial Study determined that the proposed project would have no impact or a less than significant impact related to hydrology and water quality for the following issues:

- Violate any waste discharge requirements.
- Otherwise substantially degrade water quality.

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood delineation map.
- Place within a 100-year flood hazard area structures which would impede or redirect flood flows.
- Be impacted by inundation by seiche, tsunami, or mudflow.

Therefore, these issues are not discussed further in this Draft EIR (see Section 3.1 Format of the Environmental Impact Analysis and Appendix A Public Participation Process for more information).

Public comments that were received during the NOP public review period resulted in no addition to the scope of the Draft EIR related to the analysis of hydrology and water quality.

The RRBWSD contracted with Thomas Harder & Co. to describe the hydrogeological setting and conduct hydrogeological modeling for the proposed project. Unless otherwise specifically cited, the setting information provided below in Section 3.11.1 Environmental Setting comes from the *Hydrogeological Evaluation of the Onyx Ranch Project*, prepared by Thomas Harder & Co, and dated July 2019, which is provided in Appendix E Hydrogeological Technical Report to this Draft EIR.

3.11.1 Environmental Setting

Location and Setting on the Project Site

The 4,109-acre project site is located in northeastern Kern County, in the Kern River Valley, within the South Fork Valley (see Figures 2-1 and 2-2 in Chapter 2 Project Description of this Draft EIR). The project site is located approximately 5 miles east of the eastern boundary of the Isabella Reservoir and situated adjacent to and on either side of the South Fork of the Kern River.

Since its settlement in the 1860s, the primary land use in the South Fork Valley has been irrigated agriculture and ranching (Crooker, 1930). Historical water supply for the irrigation of crops on the project site has been accomplish through a system of unlined canals that divert surface water from the South Fork of the Kern River to the canals. Existing crop irrigation is also supplemented with groundwater pumped from production wells[1] on the project site.

The topography on the project site ranges from 2,640 to 3,320 feet above mean sea level (amsl). An aerial photograph in Figure 2-3 in Chapter 2 Project Description of this Draft EIR, shows the existing conditions on the project site, including land uses, on and adjacent to the project site. The project site has a combination of: vacant areas with steep slopes and rocky terrain generally located along the outer portions of the project site; relatively level areas with agricultural fields, ditches, and limited development; and the riverbed and banks of the South Fork that traverses through the site. In addition, the project site has cottonwood/willow riparian habitat.

Figure 2-4 in Chapter 2 Project Description of this Draft EIR, indicates the locations of the existing tracts, agricultural fields, and ditches on the project site and where the ditches originate or end off-site. Of the approximately 3,418 acres of land on the Onyx Ranch portion of the

[1] A production well is a well from which water is pumped for beneficial use (such as irrigation), as opposed to monitoring wells that are used to measure groundwater levels and groundwater quality.

project site, approximately 2,269 acres are currently used for an agricultural purpose, with the remainder of the Onyx Ranch, consisting of approximately 1,149 acres, is either developed or mountainous and, therefore, not suitable for agriculture. For the Smith Ranch portion of the project site, of the approximately 691 acres, approximately 278 acres are riparian pasture, 171 acres are mountainous areas, and approximately 242 acres are used for irrigated pasture purposes. The riparian and irrigated pastures have been irrigated for at least the last twenty years.

Hydrological Study Area

Boundaries

For the purposes of evaluating the hydrological conditions for the project site, a Hydrological Study Area that includes the project site has been defined. The Hydrological Study Area is an approximately 173-square mile (111,013 acres) rectangular area that is approximately 19 miles long and 9 miles wide (See Figure 3.11-1). The Hydrological Study Area includes a majority of the Kern River Valley Groundwater Basin, the Isabella Reservoir, the southern portion of the North Fork of the Kern River; and the western portion of the South Fork of the Kern River. The Hydrological Study Area includes the entire Isabella Reservoir because changes in the amount of surface water diverted onto the project site for irrigation could affect downstream flow in the South Fork of the Kern River and the water level of the Reservoir.

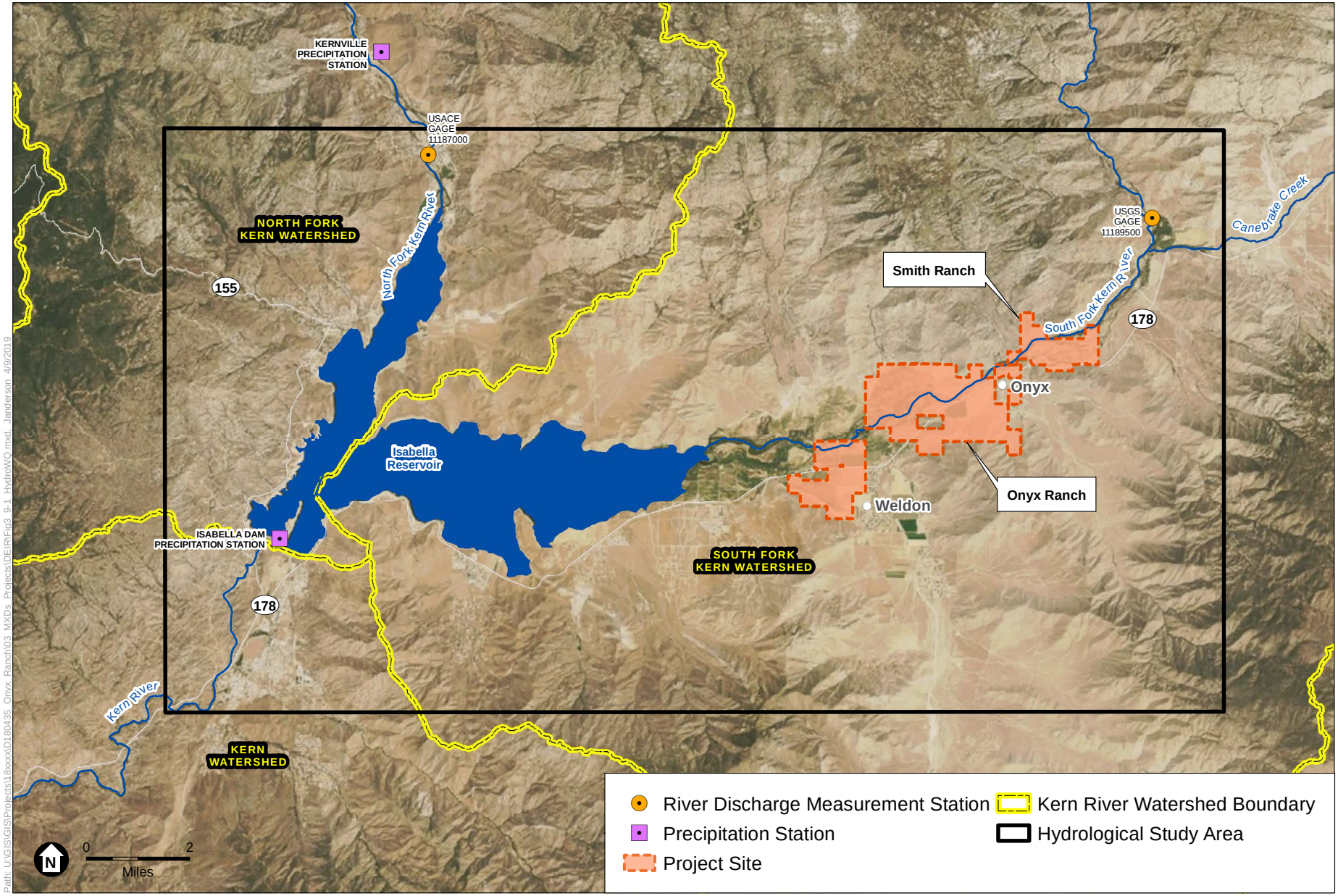
Geology

The Hydrological Study Area is located in the southern portion of the Sierra Nevada Mountains. In the Hydrological Study Area, exposed bedrock consists primarily of granitic and metasedimentary rock (see Section 3.8 Geology and Soils for further discussion). Alluvial sediments weathering from the surrounding bedrock have accumulated within the South Fork Valley and localized tributary valleys. The alluvium consists primarily of sand and gravel with localized lenses and layers of silt and clay. Where saturated in the subsurface, the alluvium sediments form the aquifer for the area. The permeability of the bedrock underlying the alluvium is assumed to be very low and, therefore, the top of the bedrock is assumed to be the effective base of the aquifer system in the area. Refer to the discussion of groundwater conditions further below for discussion of the alluvial sediments in the Hydrological Study Area.

Surface Water Conditions

Watersheds and Drainage

The Hydrological Study Area is located in portions of three watersheds within the Sierra Nevada Mountains: North Fork Kern Watershed; South Fork Kern Watershed; and Kern Watershed (see Figure 3.11-1). As shown in Figure 3.11-1, the project site is located in the South Fork Kern Watershed. Surface runoff within the North Fork Kern Watershed drains into the North Fork of the Kern River and then into the Isabella Reservoir. Surface runoff within the South Fork Kern Watershed flows to the South Fork of the Kern River and then into the Isabella Reservoir. The outflow from the Isabella Reservoir occurs via controlled releases at the Isabella Dam to the Lower Kern River in the Kern Watershed.



SOURCE: Mapbox; Kern County; Harder, 2018

Onyx Ranch South Fork Valley Water Project

Figure 3.11-1
Hydrological Study Area

ESA

Precipitation and Stream Flow

In the Hydrological Study Area, historical annual precipitation was measured and recorded at the Kernville Precipitation Station (2,703 feet amsl) and the Isabella Dam (2,635 feet amsl) (See Figure 3.11-1). The historical average annual precipitation at the Kernville Precipitation Station ranged from 3 to 28 inches per year with an average of 12.5 inches per year for the recorded period from 1949 to 2007. The historical average annual precipitation measured at the Isabella Dam was 11.5 inches per year for the recorded period from 1988 to 2017.

Precipitation falling on the land surface within the South Fork Kern Watershed drains to the South Fork of the Kern River. Historical records of streamflow in the South Fork of the Kern River are based on measurements at the U.S. Geological Survey (USGS) stream gage at Onyx (Station 11189500) (see Figure 3.11-1) (USGS, 1980). Annual streamflow at this station for the period between 2005 and 2017 has ranged from approximately 6,385 acre-feet in 2015 to 292,062 acre-feet in 2017. The average streamflow at the USGS Onyx gage for 2005 to 2017 was 97 percent of the long-term average. In comparison to the long-term record (from 1912 to 2017), the recorded annual streamflow for the 2005 to 2017 timeframe is relatively dry. The flow rates at the USGS Onyx gage have typically ranged from 0 cubic feet per second (cfs) to 14,000 cfs and the Kern River regulated flows below the Isabella Dam have typically ranged from 150 cfs to 4,500 cfs (for non-flashflood events).

Precipitation falling on the land surface within the North Fork Kern Watershed drains to the North Fork of the Kern River. Historical records of streamflow in the North Fork of the Kern River within the Hydrological Study Area are based on measurements at the United States Army Corps of Engineers (USACE) stream gage at Kernville (Station 11187000) (see Figure 3.11-1) (USGS, 1980). Annual stream flow at this station for the period between 2005 and 2017 has ranged from approximately 124,549 acre-feet in 2015 to 1,567,925 acre-feet in 2017.

Surface Water Budget

In the study of hydrology, a water budget describes the flow of water in and out of a system, or in this analysis, the surface water within the Hydrological Study Area. The surface water budget of the South Fork of the Kern River and Isabella Reservoir for the years 2005 through 2017 is summarized below in Table 3.11-1. The water balance of the Isabella Reservoir is monitored and recorded daily by the USACE and reported on their website (Kern County, 2011). The outflow from the Isabella Reservoir occurs via controlled releases at the Isabella Dam to the Lower Kern River. The outflow from and water levels in Isabella Reservoir are managed by the Kern River Watermaster in accordance with the Isabella Reservoir Water Control Manual. Coordination with the Kern River Watermaster, Kern River Interests, and USACE is required to facilitate the movement of the water through the Isabella Dam, or alternatively, secure temporary storage of the water in the Isabella Reservoir for later release to the downstream RRBWSD service area.

TABLE 3.11-1
NORTH AND SOUTH FORKS OF THE KERN RIVER AND ISABELLA RESERVOIR SURFACE WATER BUDGET

Date	Total Inflows (Acre-Feet)	Total Outflows (Acre-Feet)	Change in Isabella Reservoir Storage (Acre-Feet)
2005	1,119,300	966,845	152,467
2006	1,024,846	1,044,649	-19,817
2007	250,693	369,992	-119,290
2008	514,060	504,628	10,346
2009	470,354	476,668	-6,327
2010	882,557	758,381	124,171
2011	1,329,860	1,397,916	-67,529
2012	338,908	425,397	-83,091
2013	207,124	233,702	-24,336
2014	176,386	191,133	-14,750
2015	134,751	146,200	-11,450
2016	354,516	294,077	60,401
2017	1,900,871	1,829,519	71,513
Average			**5,562**
Total			**72,308**

SOURCE: Thomas Harder & Co., July 2019

The inflow from the South Fork of the Kern River into the Isabella Reservoir is not gaged. Therefore, the inflow to the Reservoir from the South Fork of the Kern River is inferred as the balance of inflow necessary to account for the reported change in Reservoir storage, after accounting for other sources of inflow and outflow. Inflow to the river/reservoir system in the Hydrological Study Area includes: precipitation on the land surface and in the Isabella Reservoir; river inflow in the North and South Forks of the Kern River and smaller tributaries from outside the Hydrological Study Area; groundwater discharge to surface water; and groundwater pumping for irrigation.[2] Surface water outflow from the river/reservoir system from the Hydrological Study Area includes: deep infiltration of precipitation falling on the land surface, infiltration of water in the river channel, infiltration of water in the tributary channels, infiltration in canals, and deep infiltration of applied irrigation water;[3] evapotranspiration[4] from the land surface and evaporation from Isabella Reservoir; crop consumptive use; seepage from Isabella Reservoir; and releases to the Lower Kern River at Isabella Dam. Additional details are provided in Appendix E, Hydrogeological Technical Report, to this Draft EIR.

As summarized above in Table 3.11-1, annual inflows, outflows, and change in storage over the recorded period of 2005 to 2017 have varied, with the change in annual storage in Isabella

[2] Some irrigation water ends up in the surface water regime as surface water runoff.
[3] Some irrigation water, most of which is diverted surface water, infiltrates down to groundwater.
[4] Reference evapotranspiration for the South Fork Valley area has been estimated to be approximately 60 inches per year.

Reservoir ranging from a net loss of -119,290 acre-feet to a net gain of 152,467 acre-feet. The variations are predominantly due to year to year precipitation patterns.

Diversions and Irrigation Canal/Ditch Flows

A number of diversion points and earthen irrigation ditches are located within the Hydrological Study Area, including the project site (see Figure 2-4). As shown in Table 3.11-1 above, the volumes of water in these irrigation ditches are accounted for since all of the water is used within the Hydrological Study Area. In Chapter 2 Project Description, Section 2.5 Project Setting, and Section 2.6 Water Rights and Proposed Diversion provide a detailed discussion of water rights and the existing diversion volumes for the project site. Additionally, Section 2.8 Project Implementation describes the ditches that are currently in use on the project site and the change in use that would result for each ditch with implementation of the proposed project.

Surface Water Quality

Surface water quality data is available for the USGS stream gage (Onyx Station 1189500) on the South Fork of the Kern River (see Figure 3.11-1) (USGS, 1980). The data for the four available sampling results are summarized below in Table 3.11-2. As noted in the water quality data, the surface water quality of the South Fork of the Kern River is of good quality with chemical concentrations within drinking water standards.

As discussed in Section 3.11.2 Regulatory Framework, below, the Clean Water Act (CWA) Section 303(d) provides a list of impaired water bodies. Neither the North Fork of the Kern River nor the South Fork of the Kern River are listed as a CWA Section 303(d) impaired water body (SWRCB, 2010). However, the Isabella Reservoir is listed as a 303(d) impaired water body for dissolved oxygen (exceeded Basin Plan Objective of 7 mg/L) and pH (below Basin Plan Objective range of 6.5 to 8.3). Total Maximum Daily Limits (TMDLs) for these constituents have not yet been established and are currently scheduled for completion by 2021 (SWRCB, 2010).

Groundwater Conditions

Basin

The project site is located within the Kern River Valley Groundwater Basin as described in DWR Bulletin 118 (DWR, 2004). In general, the groundwater basin includes the alluvial valley areas of the North Fork of the Kern River, South Fork of the Kern River, Canebrake Creek, and other tributary creeks. The Kern River Valley Groundwater Basin is not a critically-overdrafted groundwater basin identified by the DWR. Therefore, the Kern River Valley Groundwater Basin is not subject to a Sustainable Groundwater Management Act (SGMA) Groundwater Sustainability Plan because it is considered to be a low-priority basin by the DWR.

TABLE 3.11-2
SOUTH FORK OF THE KERN RIVER SURFACE WATER QUALITY DATA

Parameter	Units of Measure	Minimum Concentrations	Maximum Concentrations	Drinking Water Standard / MCL
Specific Conductance	uS/cm	79	162	Ne
Total Dissolved Solids	mg/L	50.5	104	500
Dissolved Oxygen	mg/L	7.1	9.2	Ne
pH, Field	pH units	7.5	7.9	6.5 to 8.5
Total Nitrogen, Unfiltered	mg/L	0.26	1.0	10
Total Nitrogen, Filtered	mg/L	0.42	0.81	10
Organic Nitrogen, Unfiltered	mg/L	0.16	0.93	10
Organic Nitrogen, Filtered	mg/L	0.29	0.75	10
Ammonia as Nitrogen, Filtered	mg/L	0.010	0.070	Ne
Ammonia as Nitrogen, Unfiltered	mg/L	0.000	0.040	Ne
Orthophosphate, Filtered	mg/L	0.030	0.310	Ne

NOTES:
Samples collected in 1979 and 1980
MCL = Maximum Contaminant Level; also known as Drinking Water Standard
uS/cm = microSeimans per centimeter
ne = not established
mg/L = micrograms per liter
SOURCE: USGS, *National Water Information System: Stream Gage 11189500 Water Quality Data*, 1980

Aquifer Conditions

The alluvial aquifer system in the South Fork Valley is relatively shallow and permeable, with the alluvium generally less than 300 feet thick. The extent of the alluvium is shown in Figure 3.11-2. East of Isabella Reservoir, the alluvial aquifer sediments consist primarily of sand and gravel with very high permeability. Pumping tests for the wells on the Onyx Ranch constructed in 2015 indicated that the aquifer hydraulic conductivities[5] were in the range of approximately 145 feet per day to 220 feet per day. In the immediate vicinity of the Isabella Reservoir, the alluvial aquifer sediments contain more silt and clay than the areas further east of the Reservoir and the permeability adjacent to the reservoir is assumed to be correspondingly lower. As a result of the aquifer conditions, the groundwater storage capacity in the overall Hydrological Study Area is estimated to be approximately 465,000 acre-feet.

Groundwater within the Kern River Valley Groundwater Basin flows in a westerly direction in approximately the same direction as the surface water drainage (see Figure 3.11-2). Available data indicate that groundwater levels in the South Fork Valley portion of the Hydrological Study Area have been relatively stable since 1929. Figure 10 in Appendix E Hydrogeological Technical Report of this Draft EIR provides hydrographs[6] for five wells within the Hydrological Study

[5] Hydraulic conductivity is the ease with which water moves through porous spaces and fractures in soil or rock. It is subject to a hydraulic gradient and affected by saturation level and permeability of the material.

[6] A hydrograph is a graph showing groundwater levels over time, as measured in a well.

Area. As shown in the hydrographs, the groundwater levels measured in monitoring wells located near the South Fork of the Kern River (Wells HYD-1 and HYD-11) typically fluctuate between levels above land surface to 15 feet below land surface, depending on their location and time of measurement. Additionally, the hydrographs show that the groundwater levels in wells located away from the South Fork of the Kern River (Wells SP-2 and 26S/34E-13J01) typically fluctuate within a range of 10 to 20 feet and have been relatively stable over the period of record.

Known Potential Groundwater Wells

The existing groundwater wells with historical records located in the Hydrological Study Area are shown in Figure 3.11-3. Most of the wells are used for agricultural irrigation or stock watering. Individual well pumping rates as high as 4,000 gallons per minute (gpm) have been recorded on driller's logs and specific capacities greater than 100 gpm per foot of drawdown are common. There are 29 monitoring wells (non-pumping wells) used by Audubon California to monitor groundwater levels within the Kern River Preserve. There are five existing groundwater irrigation wells currently in use on the Onyx Ranch with the groundwater pumping operation consisting of about 3,000 to 8,000 acre-feet per year. In addition, there is one operational domestic well and one irrigation well with an unknown status on the Smith Ranch portion of the project site. It should be noted that many of the wells shown in Figure 3.11-3 were identified from historical records and may not exist anymore. In addition, there may be wells that do not have records. Therefore, the exact number of active wells within the Hydrological Study Area is unknown.

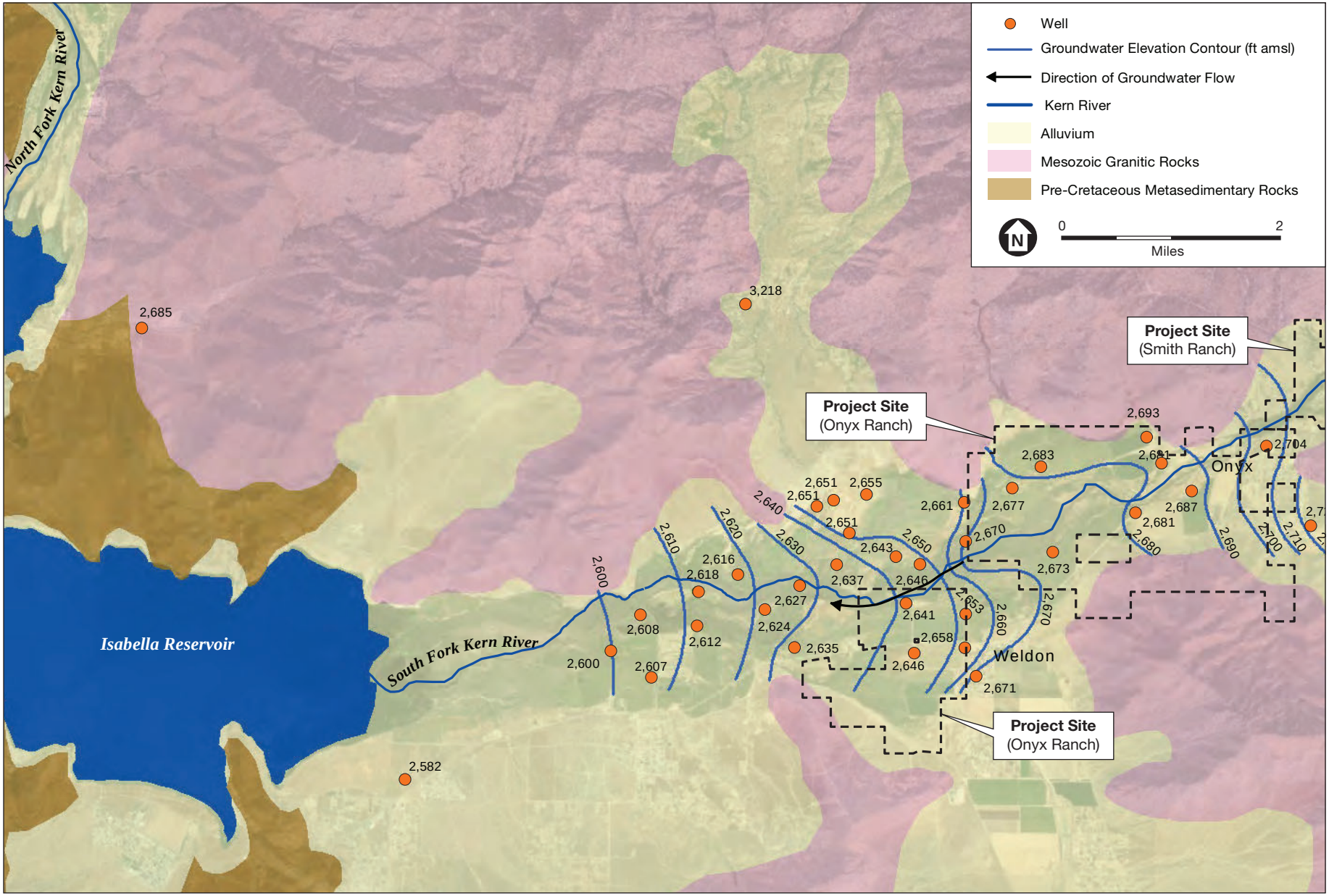
Community Water Systems Utilizing Groundwater

There are various community water systems located throughout the Kern River Valley that utilizing groundwater. Figure 3.11-3 and Table 3.11-3 identify the 13 community water systems within the Hydrological Study Area that use groundwater.

TABLE 3.11-3
LOCAL COMMUNITY WATER SYSTEMS

Key to Figure 3.11-3	Purveyor Name	Community	Connections	Population
a	California Water Services	Onyx	197	269
b	Valley Estates POA	Weldon	113	386
c	South Fork Middle School	Weldon	1	174
d	South Fork Elementary School	Weldon	2	154
e	Bella Vista Mutual Water Company	Weldon	46	150
f	Tradewinds Water Association	Weldon	234	632
g	California Water Services	Squirrel Mtn	761	1,395
h	Sierra Vista Restaurant	Weldon	3	50
i	Long Canyon Water Company	Prince Ranch	64	122
j,k	Rainbird Valley Mutual Water Company	Weldon	85	238
l	Lakeview Ranchos Mutual Water Company	Weldon	71	120
l	Hillview Acres Mutual Water Company	Weldon	37	36

SOURCE: Kern County, 2011; Tracking California, 2019

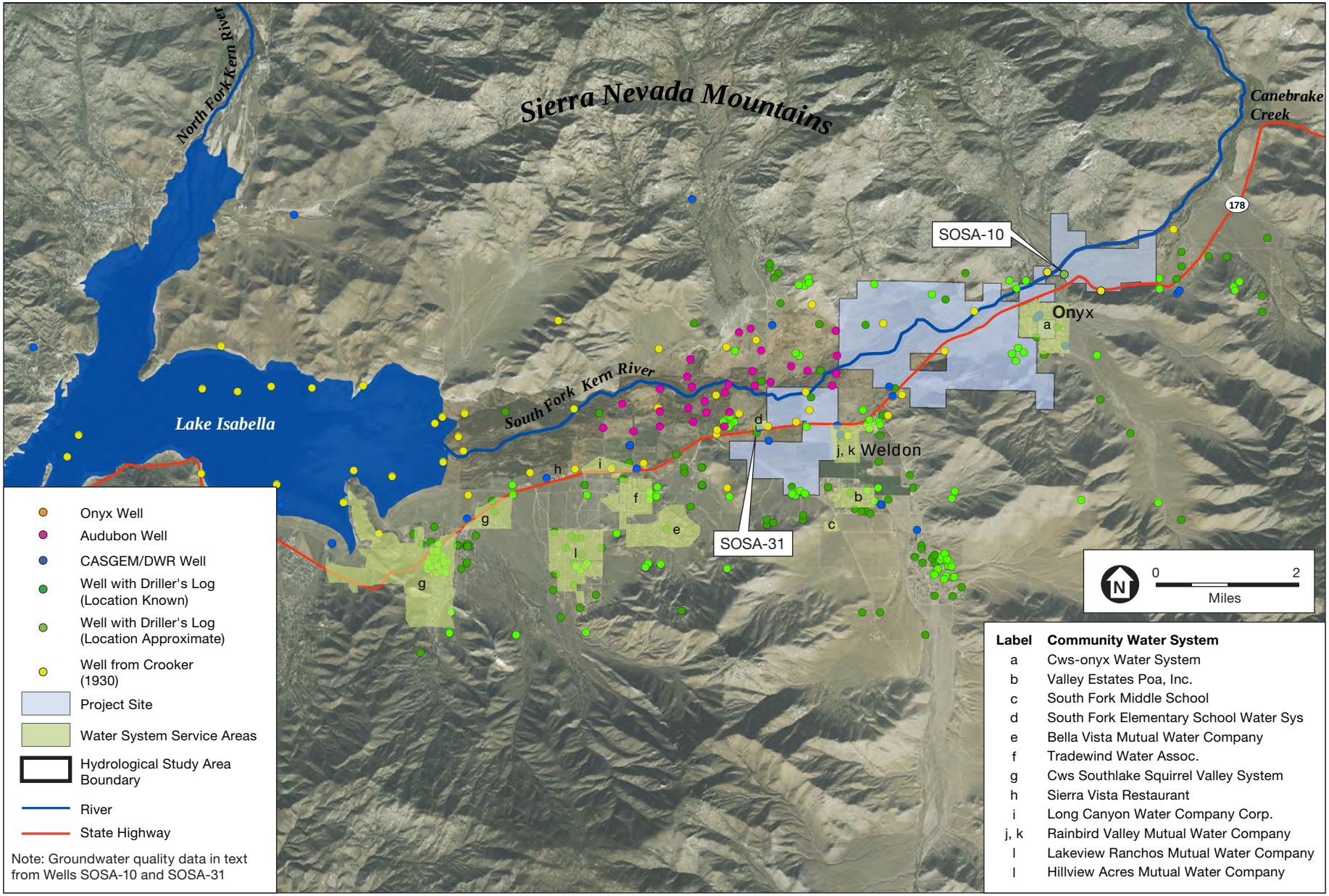


SOURCE: Harder, 2018

Onyx Ranch South Fork Valley Water Project

Figure 3.11-2
Groundwater Contour Map – Fall 2014

ESA



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SOURCE: Harder, 2015

Onyx Ranch South Fork Valley Water Project

Figure 3.11-3
Known Wells Near the South Fork Kern River

ESA

Groundwater Budget

In the study of hydrology, a groundwater budget describes the flow of water in and out of a groundwater system; in this case the aquifer within the Hydrological Study Area. The groundwater budget within the area where the South Fork of the Kern River Valley is located is summarized below in Table 3.11-4. The groundwater budget is based on inflow minus outflow, which equals the change in storage within the groundwater basin. Inflow includes: groundwater recharge into the basin from infiltration from precipitation on land surfaces; recharge from water infiltrating in the beds of the Kern River, tributaries, canals and irrigation ditches; irrigation return flow[7] infiltrating into the subsurface; seepage from the Isabella Reservoir; and subsurface inflow from outside of the Hydrological Study Area. Outflow includes: groundwater pumping; evapotranspiration from the Kern River, tributaries, and canals; and subsurface outflow into the Isabella Reservoir. The difference between the sum of inflow and outflow is the change in groundwater storage in the groundwater basin. Additional details are provided in the Hydrogeological Evaluation in Appendix E Hydrogeological Technical Report of this Draft EIR.

TABLE 3.11-4
SOUTH FORK OF THE KERN RIVER VALLEY GROUNDWATER WATER BUDGET

Date	Total Inflows (Acre-Feet)	Total Outflows (Acre-Feet)	Change in Storage (Acre-Feet)
2005	17,733	30,339	-12,606
2006	19,645	27,932	-8,286
2007	11,767	23,206	-11,439
2008	21,647	19,623	2,024
2009	20,235	24,526	-4,291
2010	27,078	25,649	1,429
2011	27,137	24,384	2,753
2012	15,867	28,419	-12,553
2013	16,833	25,571	-8,738
2014	16,077	23,342	-7,265
2015	14,495	17,934	-3,439
2016	21,938	23,734	-1,797
2017	36,041	11,538	24,503
Average	20,499	23,544	-3,054
Total 2005 - 2017	266,492	306,198	-39,706
Total 2008 - 2017	217,348	224,720	-7,373

SOURCE: Thomas Harder & Co., July 2019

Results of the groundwater budget provided in Table 3.11-4 show annual fluctuations in storage with changes ranging from a loss of -12,606 AF in 2005 to a gain of 24,503 AF in 2017. Overall, the results show a cumulative loss in groundwater storage of approximately -39,706 AF from

7 Some irrigation water applied to the ground surface will infiltrate down to groundwater.

2005 through 2017. However, when evaluated from 2008 through 2017, the storage change is a loss of approximately -7,373 AF, with most of the recovery experienced in 2017. This occurred because in 2017 total inflow to groundwater was three times the amount of total outflow (see Table 3.11-4). Hydrographs of the wells located near the South Fork of the Kern River channel show that groundwater levels generally recover to historical high conditions during wet years (see Figure 10 in Appendix E Hydrological Technical Report of this Draft EIR).

Groundwater Quality

In May 2016, the USGS and the State Water Resources Control Board (SWRCB) sampled wells in the southern Sierra Nevada (Kern County, 2011). Samples were analyzed for volatile organic compounds, pesticides and pesticide degradation products, pharmaceutical compounds, constituents of special concern (NDMA, perchlorate, and 1,2,3-TCP), naturally occurring inorganic constituents (nutrients, major ions, and trace elements), radioactive constituents, and microbial indicators. None of the wells sampled contained concentrations of contaminants above State or federal maximum contamination levels, health advisory levels, or notification levels. The concentrations of the inorganic constituents, which are commonly used to track general water quality, are summarized below in Table 3.11-5.

TABLE 3.11-5
SUMMARY OF GROUNDWATER QUALITY IN THE HYDROLOGICAL STUDY AREA

Parameters	Units	Well SOSA-10	Well SOSA-31	Primary MCL	Recommended Secondary MCL	Upper Secondary MCL
Sample Date		18-May-2016	17-May-2016	--	--	--
Screen interval, feet below grade		90 – 174	78-120	--	--	--
TDS	mg/L	270	567	Ne	500	1,000
Sodium	mg/L	38.2	63.4	Ne	ne	ne
Potassium	mg/L	3.42	2.91	Ne	ne	ne
Calcium	mg/L	38.2	103	Ne	ne	Ne
Magnesium	mg/L	10.5	18.1	Ne	ne	Ne
Chloride	mg/L	16.3	31.1	Ne	250	500
Sulfate	mg/L	19.1	121	Ne	250	500
Nitrate & Nitriteas Nitrogen	mg/L	0.947	9.49	10	ne	Ne
Bromide	mg/L	0.059	0.289	Ne	ne	Ne
Alkalinity as Calcium Carbonate	mg/L	173	247	Ne	ne	Ne
pH	pH units	6.1	7.2	Ne	ne	Ne

NOTES:
MCL = Maximum Contaminant Level, also known as Drinking Water Standard
TDS = Total dissolved solids
mg/L = milligrams per liter, approximately equivalent of parts per million
ne = not established
SOURCE: USGS, 2016

The sampling program included Wells SOSA-10 and SOSA-31 that are located within the Hydrological Study Area near Onyx and Weldon as identified on Figure 3.11-3. Well SOSA-10 is located on the edge of the Smith Ranch portion of the project site, and Well SOSA-31 is located adjacent to the Onyx Ranch portion of the project site, as shown in Figure 3.11-3. The groundwater quality is good with relatively low concentrations of the major constituents that are below the primary and secondary State drinking water standards.

Designated Flood Zone

The unincorporated communities of Weldon, Kelso Valley, and Onyx, located within and surrounding the project site, are subject to flooding in the event of a severe rainstorm (Kern County, 2011). The 100-year flood zone for the communities and surrounding areas in the vicinity of the project site is shown on Figure 3.11-4. This designation refers to flood events that are anticipated to occur every 100 years, although such an event could occur at any time. The Kern County Assessor's Parcel Numbers for the parcels on the project site that are in the 100-year flood zone are listed below.

Onyx Ranch:

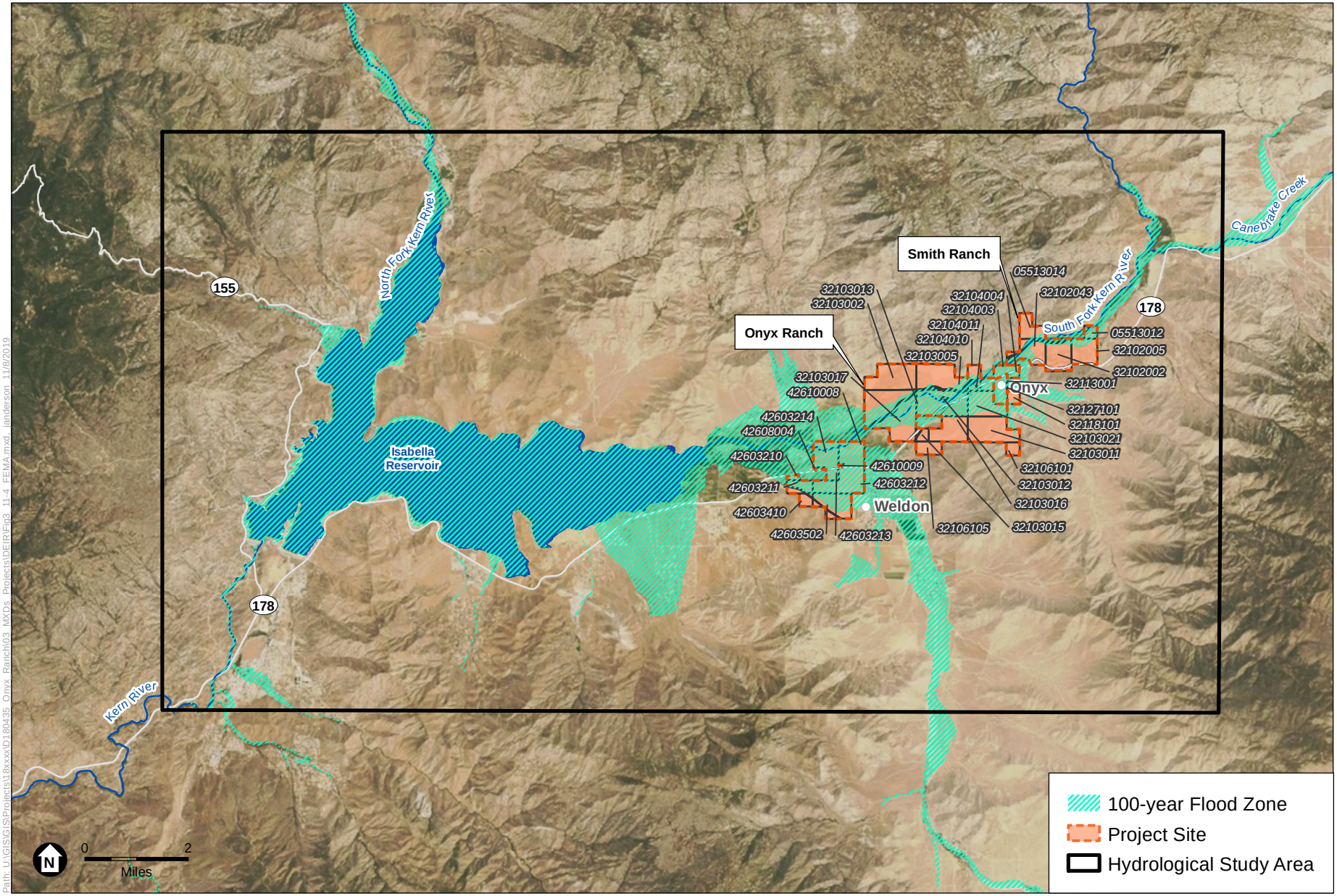
- 321-030-05
- 321-030-11
- 321-030-12
- 321-030-13
- 321-030-15
- 321-030-16
- 321-030-17
- 321-030-21
- 321-040-03
- 321-040-04
- 321-040-10
- 321-181-01
- 426-032-10
- 426-032-11
- 426-032-12
- 426-032-13
- 426-032-14
- 426-032-15
- 426-034-10
- 426-035-02
- 426-080-04

Smith Ranch:

- 055-130-12
- 055-130-14
- 321-020-02
- 321-020-05
- 321-020-43

Some areas immediately adjacent to the Kern River occasionally flood during high water years (Kern Valley Sun, 2019). Sierra Way and Fay Ranch Road are susceptible to flooding because the roads cross the Kern River and are within the floodplain at relatively low elevations. In addition, Sierra Way is built on a berm across the river channel and secondary floodway, acting as a dam. This "dam" backs up the water, creating a "lake" full of slack water that sediment cannot move through. The sediment buildup increases the susceptibility of flooding.

Based on 2019 records from the Kern County Roads Department, flooding occurred on roadways that cross the South Fork of the Kern River during the period of April 18, 2019 through May 8, 2019. This included flooding across Fay Ranch Road. During this period, flow rates in the South Fork of the Kern River as measured at the USGS Onyx gage were greater than 1,240 cfs.



SOURCE: Mapbox; Kern County; Harder, 2018; FEMA, 2018

Onyx Ranch South Fork Valley Water Project

Figure 3.11-4

100-Year Flood Zone

ESA

Dam Inundation

There are no dams located upstream of the project area that could inundate the project site in the event of a dam failure. Failure of the Isabella Reservoir Dam would result in the release of waters to the Lower Kern River, downstream and to the west of the project site. Isabella Dam and Isabella Reservoir were constructed by the USACE in 1954. The primary purpose of the Isabella Dam is flood control. Isabella Reservoir was designed to store approximately 568,000 AF of water; however, due to seepage and earthquake concerns, since 2006 the water storage in the Isabella Reservoir has been limited to approximately 60 percent of capacity or 361,250 AF, which corresponds to a water surface elevation of 2,589 feet (USACE, 2020). As of January 7, 2020, the current storage pool of the Reservoir was 169,461 AF and the water surface elevation was 2,560.3 feet (USACE, 2020).

The USACE is currently constructing the Isabella Lake Dam Safety Modification Project, which addresses potential overtopping and seismic and seepage issues identified with Isabella Reservoir's main and auxiliary dams to reduce the likelihood of dam failure (USACE, 2019). While the Dam Safety Modification Project is being constructed, USACE has: increased surveillance and monitoring; stockpiled emergency materials; installed warning sirens in the community of Lake Isabella; installed additional instrumentation for monitoring; and conducted continued public outreach with Kern County and the local communities. It is intended that Isabella Reservoir would be restored to the design capacity upon completion of the Dam Safety Modification Project (USACE, 2019).

Cumulative Setting

As discussed in Section 3.2, Cumulative Impacts Methodology, the geographic area addressed in the discussion of cumulative impacts varies based on the environmental resource topic being analyzed. The geographic area of the analysis of the potential cumulative impacts of the proposed project and the cumulative projects related to hydrology and water quality is limited to the Hydrological Study Area, as described above. This includes the portion of the South Fork Kern Watershed area within of the Hydrological Study Area, the Isabella Reservoir, and the Lower Kern River from the Isabella Dam downstream to the RRBWSD discharge points.

The timeframe during which the proposed project could contribute to cumulative impacts related to hydrology and water quality includes the implementation and operational phases. For the proposed project, the operational phase would be permanent. Similar to the geographic limitation discussed above, it should be noted that the effects relative to hydrology and water quality impacts are generally time-specific. Hydrology and water quality impacts could be cumulative if two or more hydrologic or water quality effects occurred at the same time.

3.11.2 Regulatory Framework

Federal

Clean Water Act

Under the enforcement authority of the U.S. Environmental Protection Agency (USEPA), the federal Clean Water Act (CWA) and subsequent amendments, was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The purpose of the CWA is to protect and maintain the quality and integrity of the nation's waters by requiring states to develop and implement state water plans and policies. The CWA gave the USEPA the authority to implement pollution control programs such as setting wastewater standards for industry. In California, implementation and enforcement of the National Pollutant Discharge Elimination System (NPDES) program is conducted through the California State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs). The CWA also sets water quality standards for surface waters and established the NPDES program to protect water quality through various sections of the CWA, including Sections 401 through 404 and 303(d) that are implemented and regulated by the SWRCB and the nine RWQCBs. The 400-series sections of the CWA would not be applicable to the proposed project since it does not involve discharging fill or waste to the South Fork of the Kern River and would not include the disturbance of more than one acre of the ground surface. CWA Section 303, as discussed below.

CWA Section 303: Water Quality Standards and Implementation Plans

CWA Section 303 requires states to establish water quality standards consisting of designated beneficial uses of water bodies and water quality standards to protect those uses for all waters of the U.S. Under Section 303(d) of the CWA, states, territories, and authorized tribes are required to develop lists of impaired waters. Impaired waters are waters that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish a priority ranking for listed waters and develop action plans to improve water quality. This process includes development of TMDLs that set discharge limits for non-point source pollutants. Isabella Reservoir is listed as an impaired waterway on the CWA Section 303(d) list.

State of California

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Water Code Section 13000 et seq. and Division 7 of the California Water Code), passed in 1969, requires protection of water quality by appropriate design, sizing, and construction of erosion and sediment controls. The Porter-Cologne Act established the SWRCB and divided California into nine regions, each overseen by a RWQCB. The SWRCB is the primary state agency responsible for protecting the quality of the State's surface and groundwater supplies and has delegated primary implementation authority to the nine RWQCBs. The Porter-Cologne Act assigns responsibility for implementing CWA Sections 401 through 402 and 303(d) to the SWRCB and the nine RWQCBs. As noted above, the 400-series

sections of the CWA would not apply to the proposed project because the project does not involve discharging fill or waste to the South Fork of the Kern River and does not include the disturbance of more than one acre of ground.

The Porter-Cologne Act requires the development and periodic review of water quality control plans (Basin Plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives for those waters, provide the technical basis for determining waste discharge requirements, identify enforcement actions, and evaluate clean water grant proposals. The Basin Plans are updated every 3 years.

The Hydrological Study Area, which includes the project site, is located within the jurisdiction of the Central Valley RWQCB - Region 5F. For Region 5F, the associated Tulare Lake Basin Plan defines a variety of water quality objectives for the hydrologic units (watersheds) within the Basin Plan area as discussed below. The proposed project would be required to comply with the Tulare Lake Basin Plan summarized below.

Water Quality Control Plan for the Central Valley Region (Basin Plan)

The preparation and adoption of Basin Plans are required by California Water Code Section 13240. According to Water Code Section 13050, Water Quality Control Plans (Basin Plans) establish the beneficial uses to be protected for the waters within a specified area, water quality objectives to protect those uses, and an implementation program for achieving the objectives. Because beneficial uses, together with their corresponding water quality objectives, can be defined per federal regulations as water quality standards, the Basin Plans are regulatory references for meeting the State and federal requirements for water quality control. In relevant part, Article X, Section 2 of the California Constitution declares:

> "[B]ecause of the conditions prevailing in this State, the general welfare requires that the *water resources of the State be put to beneficial use to the fullest extent of which they are capable*, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare…" (emphasis added)

The *Water Quality Control Plan for the Tulare Lake Basin* (Tulare Lake Basin Plan) is designed to preserve and enhance water quality and protect beneficial uses of all waters (RWQCB, 2018). Specifically, it:

1. Designates beneficial uses for surface and ground waters;
2. Sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's anti-degradation policy.
3. Describes implementation programs for achieving objectives to protect all waters in the Region.

In addition, the Tulare Lake Basin Plan incorporates all applicable SWRCB and RWQCB plans and policies and other pertinent water quality policies and regulations. The proposed project

would be required to meet water quality objectives and maintain the beneficial uses set out in the Tulare Lake Basin Plan.

The Tulare Lake Basin Plan provides the surface water beneficial uses for the South Fork of the Kern River listed below:

- Municipal and Domestic Supply (MUN) - Uses of water for community, military, or individual water supply systems, including, but not limited to, drinking water supply.
- Hydropower Generation (POW) - Uses of water for hydropower generation.
- Water Contact Recreation (REC-1) - Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, or use of natural hot springs.
- Non-Contact Water Recreation (REC-2) - Uses of water for recreational activities involving proximity to water, but where there is generally no body contact with water, nor any likelihood of ingestion of water. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
- Warm Freshwater Habitat (WARM) - Uses of water that support warm water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates. WARM includes support for reproduction and early development of warm water fish.
- Cold Freshwater Habitat (COLD) - Uses of water that support cold water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
- Wildlife Habitat (WILD) - Uses of water that support terrestrial or wetland ecosystems, including, but not limited to, preservation and enhancement of terrestrial habitats or wetlands, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
- Rare, Threatened, or Endangered Species (RARE) - Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.
- Spawning, Reproduction, and/or Early Development (SPWN) - Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish. SPWN shall be limited to cold water fisheries.
- Freshwater Replenishment (FRSH) - Uses of water for natural or artificial maintenance of surface water quantity or quality

Surface water beneficial uses for the Isabella Reservoir are POW, REC-1, REC-2, WARM, COLD, WILD, and FRSH and are summarized above.

Groundwater beneficial uses for the South Fork of the Kern River and Isabella Reservoir are MUN, POW, REC-1, WARM, and WILD as well as the following:

- Agricultural Supply (AGR) - Uses of water for farming, horticulture, or ranching, including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

- Industrial Service Supply (IND) - Uses of water for industrial activities that do not depend primarily on water quality, including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.
- Industrial Process Supply (PRO) - Uses of water for industrial activities that depend primarily on water quality.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) was adopted in 2014 and became effective January 1, 2015. SGMA gives local agencies the authority to customize groundwater sustainability plans to their regional economic and environmental needs and manage groundwater in a sustainable manner to protect groundwater resources. SGMA establishes a definition of sustainable groundwater management and a framework for local agencies to: develop plans and implement sustainable management strategies to manage groundwater resources; prioritizes basins (ranked as high- and medium-priority) with the greatest problems; and sets a 20-year timeline for implementation.

The DWR and the SWRCB are the lead State agencies responsible for developing regulations and reporting requirements necessary to carry out SGMA. DWR sets basin prioritization, basin boundaries, and develops regulations for groundwater sustainability. The SWRCB is responsible for fee schedules, data reporting, probationary designations, and interim sustainability plans.

The project site, the South Fork of the Kern River, and the surrounding land area are located in the Kern River Valley Groundwater Basin, which is not a “critically-overdrafted” groundwater basin identified by the DWR. The Kern River Valley Groundwater Basin is not subject to a SGMA Groundwater Sustainability Plan because it is considered to be a “low priority” basin by the DWR.

The RRBWSD service area is within the Kern County Sub-basin (DWR Basin 5-022.14), which is considered a “high-priority” basin by the DWR. As such, the RRBWSD is a member of the Kern Groundwater Authority, which has prepared a Groundwater Sustainability Plan for the portion of the Kern County Sub-basin that is within the boundaries of its member agencies. The aquifer characteristics and groundwater conditions of the Kern County Sub-basin where the RRBWSD service area is located are documented in the Kern Groundwater Authority’s Groundwater Sustainability Plan (Kern Groundwater Authority, 2019).

Local

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, policies, and implementation measures of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the Kern River Valley Specific Plan (KRVSP) area, which was addressed in the KRVSP adopted by Kern County in 2011. The KRVSP consists of elements that include goals,

policies, and implementation measures related to hydrology and water quality within the Kern River Valley. The applicable elements and their goals and polices are as follows:

Conservation Element

The Conservation Element focuses on practices that can ensure the long-term survival of resources Kern River Valley residents enjoy and cherish. The Conservation Element identifies goals, policies, and implementation measures to maintain resources in the Kern River Valley Area. The applicable goal and policies are as follows:

Water Conservation

Goal 5.3.1: Maintain a balance between water supply and water consumption.

Policy 5.3.3: Require water conservation, which may include landscaping with drought-tolerant plants, use of reclaimed water (gray water), and recycling of cooling system water, in all development.

Policy 5.3.7: Develop a regional approach to resolve water supply issues in the Kern River Valley.

Public Safety Element

The Public Safety Element describes the Kern River Valley as being susceptible to natural hazards. The Public Safety Element factors wildland fire hazards, flooding and dam inundation, shallow groundwater, and geologic hazards into the Kern River Valley's land use planning. The applicable goals and policies are as follows:

Flooding and Dam Inundation

Goal 6.2.1: Prevent loss of life, reduce personal injuries and property damage, and minimize economic loss resulting from flood hazard, and dam inundation conditions.

Policy 6.2.2: Prohibit incompatible uses in primary floodway areas.

Policy 6.2.3: Minimize the alteration of primary floodways, stream channels, and natural protective barriers that accommodate or channel floodwaters.

Policy 6.2.6: Minimize the potential for damage from floods by protecting and restoring the natural water storage and conveyance functions of primary floodways giving preference wherever possible to nonstructural surface water management methods.

Shallow Groundwater

Goal 6.3.1: Ensure public health and safety risks associated with shallow groundwater have been minimized to the greatest extent possible as well as protect the groundwater quality.

Policy 6.3.2: This Plan's Physical and Environmental Constraints Map shall provide the most up to date information on the location of shallow groundwater areas. Subsequent shallow groundwater studies performed by a qualified hydrologist shall be incorporated within this map.

Public Facilities and Services Element

The Public Facility and Services Element describes the systems that must be maintained to ensure that existing residents and businesses have service. The Element identifies goals, policies, and implementation measures to promote reliable water supply systems and provide adequate emergency protection in the Kern River Valley Area. The applicable goal and policies are as follows:

Water Quality

Goal 9.3.1: Protect and improve local groundwater quality

Policy 9.3.1: Ensure that water quality standards are met for existing and future users.

Policy 9.3.3: Establish a coordinated effort to protect water quality by preventing further degradation of existing water resources and supply.

Kern County General Plan

The General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009). The applicable designations and elements are discussed below.

The General Plan Land Use Map provides the following Physical and Environmental Constraints map codes related to hydrology and water quality:

- Map Code 2.5 (Flood Hazard) - Special Flood Hazard Areas (Zone A), as identified on the Flood Insurance Rate Maps (FIRM) of the Federal Emergency Management Agency (FEMA) and supplemented by floodplain delineating maps that have been approved by the Kern County Engineering and Survey Services Department (see Figure 3.12-1 in Section 3.12, Land Use and Planning of this Draft EIR).

Land Use, Open Space, and Conservation Element

The Land Use, Open Space, and Conservation Element provides for the conservation of Kern County's agricultural and natural resources (Kern County, 2009). The Land Use, Open Space and Conservation Element provides the following applicable goal and policies:

Public Facilities and Services

Goal 5: Ensure that adequate supplies of quality (appropriate for intended use) water are available to residential, industrial, and agricultural uses within Kern County.

Resource Provisions

Policy 10. To encourage effective groundwater resource management for the long-term economic benefit of the County the following shall be considered:

(a) Promote groundwater recharge activities in various zone districts.

(c) Support the development of groundwater management plans.

(d) Support the development of future sources of additional surface water and groundwater, including conjunctive use, recycled water, conservation, additional storage of surface water and groundwater and desalination.

Policy 20. Areas along rivers and streams will be conserved where feasible to enhance drainage, flood control, recreational, and other beneficial uses while acknowledging existing land use patterns.

General Provisions - Surface Water and Groundwater

Policy 34: Ensure that water quality standards are met for existing users and future development.

Policy 39: Encourage the development of the County's groundwater supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.

Safety Element

The Safety Element of the County General Plan describes potential geologic hazards to the County's citizens. The Safety Element provides the following goals, policy, and implementation measures relevant to the proposed project:

General Safety

Goal 1: Minimize injuries and loss of life and reduce property damage.

Goal 4: Create an awareness of the residents in Kern County through the dissemination of information about geologic, fire, and flood safety hazards.

Policy 4.2, 1: That the County's program of identification, mapping, and evaluating the geologic, fire, flood safety hazard areas, and significant concentrations of hydrogen sulfide in oil field areas, presently under way by various County departments, be continued.

Implementation Measure 4.2, F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by FEMA, shall be used as a source document for preparation of environmental documents pursuant to CEQA, evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats of public safety.

Implementation Measure 4.5, C: Develop and maintain maps, at an appropriate scale, showing the location of all geologic hazards, including active faults, Alquist-Priolo Earthquake Fault Zones, 100-year flood hazard boundary, the extent of projected dam failure inundation and time arcs, depth of inundation, land subsidence, slope failure and earthquake induced landslides, high groundwater, and liquefaction potential.

Well Permits

The Kern County Public Health Services Department manages the Water Wells Program, which includes both domestic and agricultural wells. The Program issues permits to construct, reconstruct, and destroy water wells and evaluates the construction and water quality of existing

water wells. Wells are required to be constructed in accordance with Kern County Ordinance Code, Section 14.08, and the State Department of Water Resources' Bulletin 74-81 and Bulletin 74-90, except as modified by subsequent revisions. County representatives conduct routine inspections during the construction phase to ensure that well are constructed according to the regulations. The following elements are required for each well:

- Watertight sanitary seal for all cracks, holes, or openings into the well
- Approved backflow protection device
- Down-turned, screened casing air vent
- Disinfection access/sounding tube
- Unthreaded sample tap
- Flow meter
- Collect water samples from the well for the following water quality analyses: arsenic, fluoride, EDB (ethylene dibromide), DBCP (dibromochloropropane), and gross alpha (measures overall radioactivity)

3.11.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to pages 3.11-1 and 3.11-2 above for a summary of the environmental issues and significance criteria included in this Draft EIR for the analysis of hydrology and water quality. This Draft EIR assumes implementation of the proposed project would have a significant impact related to hydrology and water quality if it would:

- Violate any water quality standards or otherwise substantially degrade surface or ground water quality.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted), or such that the project may impede sustainable groundwater management of the basin.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
  - Result in substantial erosion or siltation on-site or off-site;
  - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; or
  - Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
- In flood hazard zone, risk release of pollutants due to project inundation.

- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Methodology

General

Information for this environmental analysis related hydrology and water quality is based on the following information: the definition of the proposed project provided above and in Chapter 2 Project Description; a review of available documents (hydrology and water quality reports and maps); the existing conditions of the Hydrologic Study Area, as described above in Section 3.11.1; the hydrogeological groundwater modeling; and the regulatory requirements summarized above in Section 3.11.2. The groundwater modeling is provided in its entirety in Appendix E Hydrogeological Technical Report and summarized below. The analysis of the potential effects of the proposed project related to hydrology and water quality is discussed in the Impact Analysis provided below.

The proposed project does not include the construction of new diversion structures or changes to the existing diversion structures on the project site. The changes in the diversion of surface water to the project site would be accomplished by opening and closing the gates or boards of the existing on-site diversion structures. The additional surface water that would flow into the Lower Kern River as a result of the proposed project would be received at existing RRBWSD diversion points and groundwater storage facilities in the San Joaquin Valley (see Figure 1-1 in Chapter 2 Project Description of this Draft EIR) that have adequate existing capacity. No physical changes to these existing recharge facilities would occur as a result of the proposed project. Historically and currently, the RRBWSD receives delivery of surface water supplies from the Kern River at its existing recharge facilities in accordance with long-term contracts and agreements associated with its existing Groundwater Recharge Project (see Section 1.2 Project Background in Chapter 1 of this Draft EIR). Under the proposed project, deliveries of Kern River water would similarly occur in accordance with existing available capacity in conveyances such as the Cross Valley Canal and Goose Lake channel (see Figure 1-1).

The proposed project would not require changes to the storage or water levels of Isabella Reservoir. As previously discussed, the outflow from the Isabella Reservoir occurs via controlled releases at the Isabella Dam to the Lower Kern River. The outflow from and water levels in Isabella Reservoir are managed by the Kern River Watermaster in accordance with the USACE Isabella Reservoir Water Control Manual. With implementation of the proposed project, the RRBWSD would coordinate with the Kern River Watermaster, Kern River Interests, and USACE to facilitate the movement of the water through the Isabella Dam, or alternatively, secure temporary storage of the water in the Isabella Reservoir for later release to the downstream RRBWSD service area.

The proposed project would construct, on an as needed basis, up to 12 shallow, low-volume wells powered by solar facilities. The wells would provide water for livestock. The shallow, low-

volume wells would be 6 inches in diameter and approximately 20 to 50 feet deep. Each well location would have a 2,000 to 4,000 gallon aboveground tank for water storage for use during weather conditions when the solar power for well pumping does not operate. The water tank would be on the ground and connect by an aboveground pipe to a livestock trough. The footprint of the aboveground solar well components would be approximately 20 feet by 40 feet. The construction of each solar well would take up to three days and would require a hollow-stem auger rig to drill the well. Each solar well is anticipated to have a 2 to 5 gpm capacity, but actual use would depend on the cattle herd size that may fluctuate annually based on weather conditions including drought. The location and number of wells would be determined during the project implementation based on the transitioning of the agricultural fields and pastures to non-irrigated pastures and the existing and planned livestock capacity. The total volume of groundwater pumped and used for the implementation of the proposed project would be decreased from the groundwater use in the existing conditions on the project site since the field transitions from crops to livestock forage would require less water and groundwater pumping would not be used to provide replacement water for irrigation on the project site.

The impact analysis of the proposed project addresses the activities associated with the implementation of the agricultural management activities and construction of the proposed shallow, low-volume wells for livestock water as described in Chapter 2 Project Description.

Groundwater Modeling

A numerical groundwater flow model was developed for the proposed project to evaluate the response of the aquifer to the proposed project's reduction in the amount of surface water diversion and reduction in the amount of surface water irrigation on the project site. The model also was used to develop a no-injury factor by estimating how much water would be delivered to Isabella Reservoir with the proposed project. As part of Project Element 4, the no-injury factor would be applied to the proposed project to determine the amount of re-directed flows (from pre-project surface water diversions) that would flow into and be released through the Isabella Dam as new water without injury to the Kern River Interests and other legal users downstream.

The model included the development of a water budget for the existing conditions, estimated the changes in the surface water volumes, and estimated the changes in the groundwater levels and storage within the Hydrological Study Area with implementation of the proposed project. The model analysis addressed the simulation of the proposed project over a 13-year period. The time period of January 2005 to December 2017 was selected because it contains both dry and wet time periods, with an average precipitation similar to historical precipitation.

The following provides a discussion of the project assumptions included in the groundwater model, a description of the model, and the findings of the modeling of the implementation of the proposed project. Refer to Appendix E Hydrogeological Technical Report to this Draft EIR for detailed tables and figures generated as a result of the modeling.

Prior to the modeling, a well survey was conducted to identify known groundwater wells within the Hydrological Study Area, along with their driller's logs, pumping data, and aquifer

parameters, where reported. In addition, stream gage and precipitation data was acquired for surface water input. This information was used in the design of the model.

Based on the details defined in Chapter 2 Project Description of this Draft EIR, assumptions for the proposed project were defined for the model. The assumptions included the following:

- The existing diversions that deliver surface water to the Onyx Ranch via the Mack/Scodie, Landers, Nicoll/Pruitt, and Lieb ditches would be discontinued (see Section 2.5 Project Setting, and Section 2.6 Water Rights and Proposed Diversion, for detailed discussion of the irrigation ditches, diversion points, and volume of surface water). To reflect the proposed project, the surface water would flow past the project site and down the South Fork of the Kern River to the Isabella Reservoir.
- Groundwater pumping for irrigation of the fields on the Onyx Ranch portion of the project site, except the Boone Field, would be discontinued.
- Return flow associated with applied irrigation water on the Onyx Ranch would be discontinued.
- One-third of the Smith Ranch property surface water diversions would be discontinued.
- Pumping from the wells on the Onyx Ranch would be reduced from an annual average of approximately 6,500 AF/year to approximately 875 AF/year for the Boone Field.
- The Kern River Watermaster would continue to manage the water levels and storage in Isabella Reservoir in accordance with the Isabella Reservoir Water Control Manual.

Description of the Groundwater Model

Groundwater models are computer simulations that represent water flow in the environment using mathematical equations. By mathematically representing the hydrogeological system, the effects of groundwater pumping scenarios can be simulated, evaluated, and compared to determine their effects on an aquifer system. Groundwater models consist of individual cells in a model domain. A domain is the entire area and depth within which the model simulates subsurface conditions. The domain is made of smaller units called cells, which represent a defined three-dimensional area, the size of which is dependent on the coverage area of the model. Using subsurface hydrogeological information from soil borings, well logs, geologic mapping, and aquifer testing, each cell is assigned, or populated with, parameters to describe how water moves through that cell. Parameters typically include hydraulic conductivity (the ability of water to flow through a given material), permeability and porosity (the relative amount of open spaces between grains in the geologic material), and the direction of water flow into and out of each of the model cells. Vertical layers are then established based on the subsurface geologic characteristics, such as permeable aquifer zones and less permeable aquitards. After the cells are populated, the model is then tuned or calibrated with actual groundwater information (depth, hydraulic conductivity, etc.), so that the model can better represent real world conditions.

Once the model has been populated and tuned, it can be used to predict the effects of hydrological changes, like groundwater extraction, on the behavior of the aquifer or aquifers. As previously noted, the model used for this analysis estimated the retention time under several operating scenarios, discussed further below. The groundwater modeling for the proposed project was constructed using

MODFLOW, a groundwater model developed by the USGS. The groundwater model simulates aquifer conditions based on a specific set of data that describes parameters such as the subsurface characteristics, groundwater flow, and groundwater pumping data. In addition, it uses input data derived from site-specific subsurface information, including the testing of the aquifer.

Based on the geology and review of driller's logs for wells in the Hydrological Study Area (also referred to the modeled area), one unconfined model layer was identified for the alluvial aquifer system based on a review of driller's logs. Groundwater flow was assumed to flow horizontally within the model layer. Both recharge and discharge were applied to the model in monthly stress periods between January 2005 and December 2017. This time period was selected because it contains both dry and wet time periods, with an average precipitation similar to historical precipitation in the modeled area. The modeled area covered approximately 111,013 acres with a single layer grid consisting of 474 rows in the east to west direction and 1,020 columns in the north to south direction for a total of 483,480 cells with each model cell representing an area of 100 feet by 100 feet.

The total water diversions redirected to the South Fork of the Kern River over the 13-year period modeled scenario for the proposed project consisted of 94,442 AF or an average of about 7,265 AF per year. All other pumping for non-project properties within the Hydrological Study Area and recharge stresses in the model remained unchanged from the calibrated model (i.e., no other inputs to existing conditions were changed). The groundwater model assumed that water redirected to the Isabella Reservoir would not be stored on a long-term basis, but released to the Lower Kern River below the Isabella Dam. The groundwater model further assumed that the release of water would not result in a net change in reservoir storage relative to the calibrated existing conditions (no project conditions) over the model period. In order to determine the volume of surface water available for release downstream without changing the Reservoir storage on a long-term basis, multiple model runs were conducted in which the release volume was adjusted until the change in Reservoir storage for the proposed project was close to the change in Reservoir storage in the calibrated model. This was done because the Kern River Watermaster controls the volume of water in the Reservoir to maintain water volumes within the range of acceptable Reservoir storage volumes. Therefore, water levels in the Reservoir would not change with implementation of the proposed project, and the USACE and the Kern River Watermaster would not deviate from the Isabella Reservoir Water Control Manual, unless it is done in coordination and agreement with the Kern River Interests and other legal users.

Model Results

The model report is provided in Appendix E Hydrogeological Technical Report of this Draft EIR. The model conclusions are summarized below.

Redirected Surface Water Flow and No-Injury Factor

Of the 94,442 acre-feet of net diversions to the project site in the existing conditions that would be redirected with the implementation of the proposed project over the 13-year model period, the estimated volume of surface water that could be released downstream of the Isabella Dam without creating a change in the volume of water in the Isabella Reservoir is approximately 78,183 acre-feet over the 13-year model period. The difference between the net redirected water with the proposed

project (94,442 acre-feet) and the volume of surface water released from Isabella Dam without a change in the volume of water stored in the Isabella Reservoir (78,183 acre-feet) would be due to stream channel infiltration, evapotranspiration (ET), and subsurface outflow from the Kern River Valley Groundwater Basin that is assumed to be surface water inflow to the Reservoir. On an average annual basis over the 13-year model period, approximately 7,265 net AF per year of redirected flows from the project site results in an average of 6,014 net AF per year of new water released from the Isabella Reservoir through the Isabella Dam. Thus, 83 percent of the redirected water with the proposed project would flow into and then be released from the Isabella Reservoir. This results in a 17 percent no-injury factor applied to redirected flows resulting from the proposed project, to determine the amount of water that would be released from the Isabella Reservoir through the Isabella Dam without injury to the Kern River Interests and other legal users.

Groundwater Storage

The proposed project is predicted to result in a net increase of groundwater in storage across the Hydrological Study Area, as compared to the historical existing conditions (existing conditions without the proposed project). Comparison of the change in groundwater storage between the existing conditions and the proposed project simulation over the 13-year model period, estimates a net increase in groundwater storage from the decrease in storage of -39,706 AF with the existing conditions to an estimated smaller decrease in storage of -21,482 AF with the proposed project. Therefore, the proposed project would result in a beneficial effect by reducing the loss of groundwater storage by approximately 18,224 AF. This represents a 4 percent increase in groundwater storage in the Kern River Valley Groundwater Basin.

Groundwater Level Changes During Low Groundwater Conditions

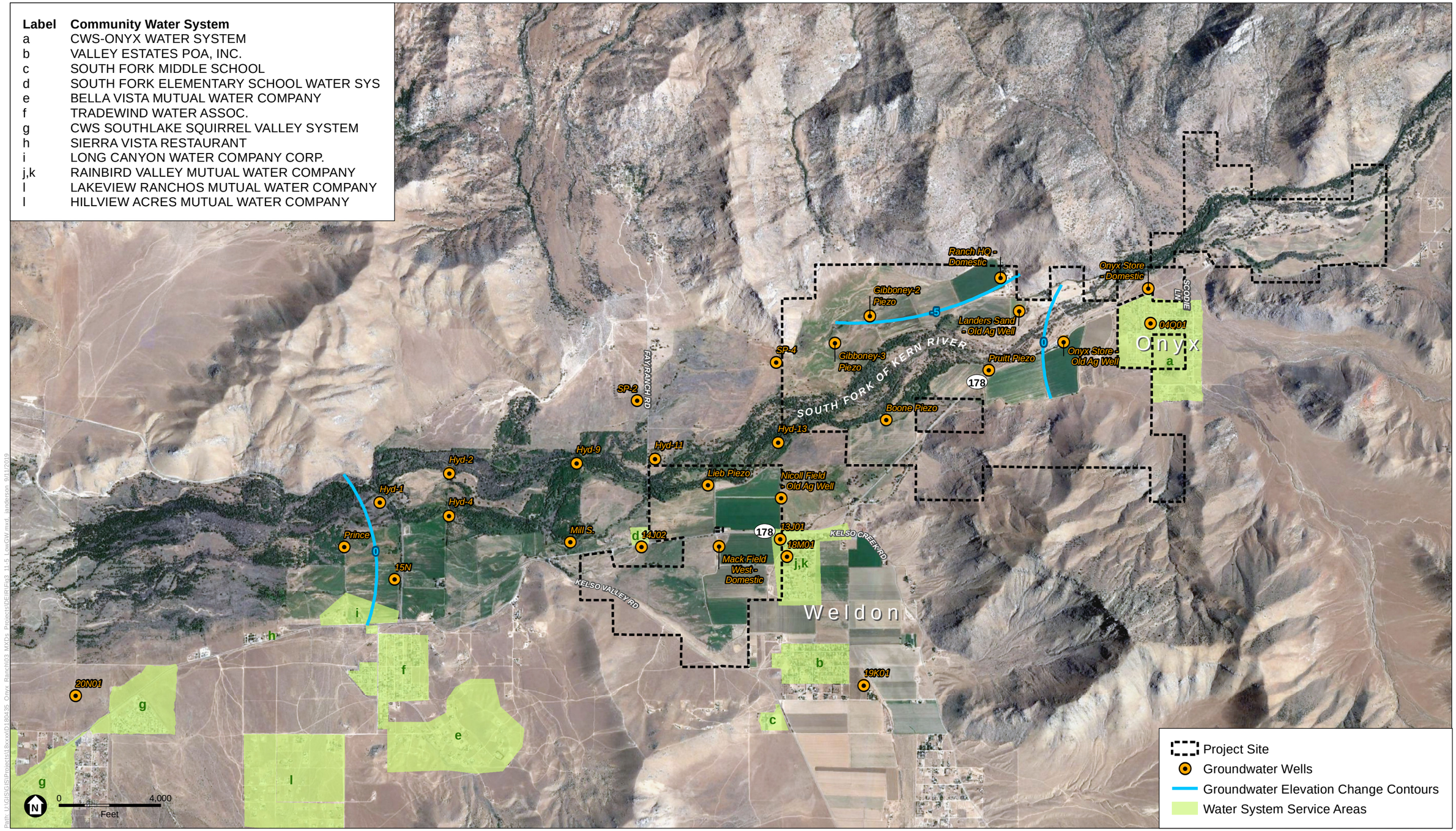
A comparison of groundwater level changes between the existing conditions and the proposed project conditions based on historical low groundwater conditions (based on December 2016 groundwater levels) is shown on Figure 3.11-5. Groundwater levels during low groundwater conditions are predicted to increase in some portions of the Hydrogeological Study Area and to decrease in others. This would include an increase in groundwater levels of up to approximately 4.1 feet at Well 20N01 located about 1 mile east of the Isabella Reservoir and about 3.75 miles west of the project site, and a decrease of approximately -5.9 feet at the Onyx Ranch Headquarters domestic well located on the project site at Onyx Ranch. As shown on Figure 3.11-5, only two wells (Onyx Ranch Headquarters domestic well and Gibboney 2 Piezo), both within the project site and along the northern side of the South Fork Valley, and both owned by RRBWSD, would experience an estimated groundwater level decrease of up to 5 or more feet. All other wells, including those for the community water systems, would experience groundwater level decreases of less than 5 feet and may experience an increase in groundwater levels in areas father away from the project site. Given that there would be such minor water level impacts of less than -5 feet during low groundwater conditions and that normal seasonal fluctuations are 10 to 20 feet, it is not expected that any existing groundwater wells would be prevented from accessing groundwater and likewise that pump performance (flow rate and pressure) fluctuations would be negligible and not noticeable to water users. Note that the wells that would experience the largest effect are owned by the RRBWSD.

Groundwater Level Changes During High Groundwater Conditions

A comparison of groundwater level changes between the existing conditions and the proposed project conditions based on historical high groundwater conditions (based on May 2011 groundwater levels) is shown on Figure 3.11-6. Groundwater levels during high groundwater conditions are predicted to increase in some portions of the study area and decrease in others. This would include an increase of up to approximately 2.9 feet at Well 20N01 located about 1 mile east of Isabella Reservoir and about 3.75 miles west of the project site, and a decrease of approximately -15.6 feet at the Nicoll Field – Old Ag Well located about ½ mile north of Weldon on the boundary of the project site on Onyx Ranch. It is important to note that groundwater levels throughout the Kern River Valley Groundwater Basin would be up to tens of feet higher in the late rainy season and decreases in groundwater levels as a result of the proposed project would mean that groundwater levels may not rise as high as they would without the proposed project. Given that there would be such minor water level impacts of +2.9 to -15.6 feet during high groundwater conditions and that normal seasonal fluctuations are 10 to 20 feet, it is not expected that any existing groundwater wells would be prevented from accessing groundwater and likewise that pump performance (flow rate and pressure) fluctuations would be negligible and not noticeable to water users. Note that the wells that would experience the largest effect are owned by the RRBWSD.

Community Water Systems

There are 13 community water systems within the Hydrological Study Area (see Figure 3.11-3). The maximum predicted project-related changes in groundwater levels are in the vicinity of the Rainbird Valley Mutual Water Company in Weldon and the South Fork Elementary School Water System west of Weldon. As shown in Figure 3.11-6, Well 18M01 is located east of the project site boundary in the Rainbird Valley Mutual Water Company service area, and Well 14J02 is located west of the project site boundary at the South Fork Elementary School Water System. Based on predicted groundwater level changes at Wells 14J02 and 18M01, the maximum decrease in groundwater levels would be up to approximately -12 feet deeper in comparison to the existing conditions. The well that would experience the largest effect is the Nicoll Field – Old Ag Well owned by the RRBWSD, where groundwater is predicted to decrease approximately -15.6 feet. However, the maximum change would occur during the spring (i.e., rainy season) in periods of above normal precipitation when groundwater levels are highest throughout the South Fork Valley. This means that groundwater levels with the proposed project may not rise as high as they would without the proposed project; however, the water levels would still rise. As previously discussed, given that there would be such minor water level impacts and that normal seasonal fluctuations are 10 to 20 feet, it is not expected that any existing groundwater wells would be prevented from accessing groundwater and likewise that pump performance (flow rate and pressure) fluctuations would be negligible and not noticeable to water users. During low groundwater level conditions, Wells 14J02 and 18M01 may experience groundwater level decreases of up to about -2.0 and -1.3 feet, respectively. These temporary and seasonal decreases are negligible and would not be expected to prevent access to groundwater within these wells.

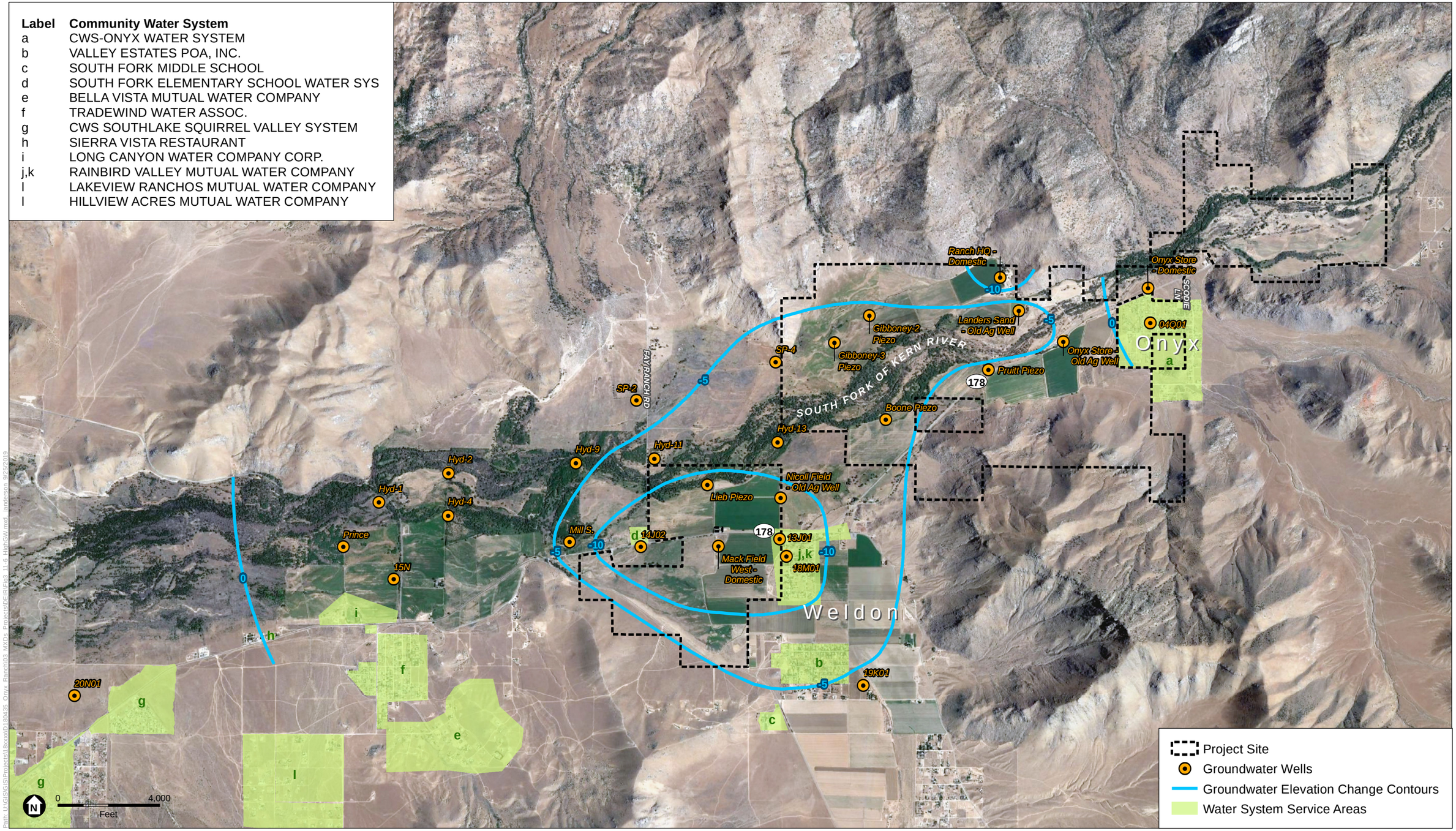


SOURCE: Google Earth, 2018; Harder, 2019; ESA, 2019; Tracking California Program, Water Systems Geographic Reporting Tool, 2019

Onyx Ranch South Fork Valley Water Project

Figure 3.11-5
Estimated Groundwater Level Changes - Low Groundwater Level Conditions

ESA



SOURCE: Google Earth, 2018; Harder, 2019; ESA, 2019

Onyx Ranch South Fork Valley Water Project

Figure 3.11-6
Estimated Groundwater Level Changes - High Groundwater Level Conditions

ESA

Impact Analysis

Water Quality

Potential Impact HYDRO-1: Would the proposed project violate any water quality standards or otherwise substantially degrade surface or ground water quality?

As described in Section 2.7 Description of the Proposed Project, the proposed project would change the points of diversion and place of use for the water rights associated with the project site so that the water can be delivered in the RRBWSD service area on the San Joaquin Valley floor. The RRBWSD proposes to reduce the diversion and use of surface water on the project site by converting irrigated fields to non-irrigated pasture or native vegetation. The proposed project would not replace reduced surface water diversions with groundwater pumped on the project site. With the proposed project, surface water that is diverted under the existing conditions would remain in the South Fork of the Kern River and flow downstream. The increased flows would be released through the Isabella Dam and flow downstream in the Lower Kern River until it reaches the RRBWSD diversion points. From there, the RRBWSD would deliver the water to their existing surface recharge basins and channels within and near its service area west of the City of Bakersfield.

Given that the water quality of the surface flow currently diverted to the project site in the existing conditions would be identical to the surface water that would stay in the South Fork of the Kern River with implementation of the proposed project, there would be no adverse effects in the surface water quality of the South Fork of the Kern River, the Isabella Reservoir, or the Lower Kern River.

With the proposed project, the irrigated fields on the project site would no longer receive as much surface water as is applied for irrigation in the existing conditions. Since that applied water would no longer be taken up by plants, evaporated, or infiltrate down to the underlying aquifer, the water quality of groundwater could be adversely affected if the water quality of groundwater depends on the water quality of the surface water that infiltrates down to groundwater. As discussed in Section 3.11.1 Environmental Setting, the water quality of both the surface water and the groundwater is good, with chemical concentrations below the State drinking water standards. As indicated by the TDS concentrations, the water quality of the surface water (about 50 to 104 mg/L) is slightly better than the groundwater (about 270 to 567 mg/L). This is because groundwater has a longer residency time in the subsurface (water in contact with the alluvium) and thus dissolves more minerals. Additionally, some of the sources of dissolved minerals in water is the result of surface water being applied to irrigated fields, infiltrating down to groundwater, and dissolving minerals along the way. By ending or reducing the application of surface water for irrigation, this would also reduce the amount of minerals dissolved in the applied surface water and groundwater.

As discussed in Section 3.11.3 Impact Analysis and Mitigation Measures, Methodology, the proposed project would construct, on an as needed basis, up to 12 shallow, low-wells powered by solar facilities to provide livestock water on the project site. The shallow, low-volume wells would be 6 inches in diameter and approximately 20 to 50 feet deep. Each well location would

have a 2,000 to 4,000 gallon aboveground tank for water storage for use during weather conditions when the solar power for well pumping does not operate. The water tank would be on the ground and connect by an aboveground pipe to a livestock trough. The footprint of aboveground well components would be approximately 20 feet by 40 feet. The construction of each well would take up to three days and would require a hollow-stem auger rig to drill the well. The location and number of the wells would be determined during the project implementation based on the transitioning of the agricultural field and pastures to non-irrigated status and the existing and planned livestock capacity. To address the worst case that all 12 solar wells would be constructed at one time, the footprint of the combined 12 wells would be less than one acre and thus not be subject to the State Construction General Permit. The small nature of the disturbance (less than one acre) would not be expected to affect surface water quality from runoff at the worksites. In addition, the well drilling and construction activities associated with the solar wells would incorporate best management practices consistent with the RRBWSD's standard practices.

Finally, as discussed above in Section 3.11.1 Environmental Setting, Surface Water Quality, the Isabella Reservoir is listed as a 303(d) impaired water body for dissolved oxygen (exceeded Basin Plan Objective of 7 mg/L) and pH (below Basin Plan Objective range of 6.5 to 8.3). However, the South Fork of the Kern River is not listed as an impaired water body and surface water in the river is of good quality. Therefore, the addition of good-quality surface water to the Isabella Reservoir from the South Fork of the Kern River due to the proposed project's reduced surface water diversions would not decrease the water quality of the Isabella Reservoir.

The implementation of the proposed project would not violate any water quality standards or otherwise substantially degrade surface or groundwater quality. Therefore, the potential impacts would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The implementation of the proposed project would not violate any water quality standards or otherwise substantially degrade surface water or groundwater quality. The potential impacts to water quality would be less than significant.

Aquifer Volume and Groundwater Levels

Potential Impact HYDRO-2: Would the proposed project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted), or such that the project may impede sustainable groundwater management of the basin?

As discussed above, with implementation of the proposed project, surface water that is diverted under the existing condition would remain in the South Fork of the Kern River and flow downstream. The increased flows would be released through the Isabella Dam and flow downstream into the Lower Kern River until it reaches the existing RRBWSD diversion points. The irrigated fields on the project site would no longer receive as much or any surface water as is applied for irrigation under the existing conditions; the surface water applied for irrigation under existing conditions, would no longer be taken up by plants, evaporated, or infiltrate down to the underlying groundwater with implementation of the proposed project.

As discussed above in Section 3.11.3 Impact Analysis and Mitigation Measures, Methodology, Groundwater Modeling, 94,442 AF of net diversions to the project site in the existing conditions would be redirected to the South Fork of the Kern River, then to the Isabella Reservoir with the proposed project. This would be about 7,265 AF per year. The model estimated that over the 13-year time period that was modeled, 78,183 AF of water could be released downstream of Isabella Dam without creating a change in Isabella Reservoir storage. The difference between the net redirected water (94,442 AF) and the volume of water released from the Isabella Dam without a change in the Isabella Reservoir storage (78,183 AF) would be due to stream channel infiltration, evapotranspiration, and subsurface outflow from the Kern River Valley Groundwater Basin assumed to be surface water inflow to the Isabella Reservoir. In other words, some portion of this water would infiltrate down through the riverbed and recharge the aquifer and thus increase the volume of water in storage in the Kern River Valley Groundwater Basin. Historically, the Basin lost about 39,706 AF of groundwater between 2005 and 2017. With the proposed project, the losses over the 13-year time period with the same climate (i.e., the same amounts of precipitation over the 13-year time period) would be reduced to losses of about 21,482 AF. Therefore, the proposed project would increase the volume of groundwater in storage by about 18,224 AF, resulting in a beneficial effect.

As discussed in the modeling results, the groundwater levels would be expected to decrease in some areas, primarily within and around the project site, and increase in other areas further downstream of the project site, depending on the season. The majority of fluctuations in groundwater levels would be on the order of a few feet. For high groundwater conditions (late rainy season), the fluctuations range from increases of up to about 2.9 feet and decreases up to about -15.6 feet, depending on the location. The increase of approximately 2.9 feet was modeled to occur at Well 20N01 located about 1 mile east of Isabella Reservoir and about 3.75 miles west of the project site, and the decrease of approximately -15.6 feet was modeled to occur within the project site at the Nicoll Field – Old Ag Well located about ½ mile north of Weldon on the boundary of the project site on Onyx Ranch (see Figure 3.11-6). However, groundwater levels

throughout all of the Kern River Valley Groundwater Basin would be higher in the late rainy season and decreases in groundwater levels as a result of the proposed project would mean that groundwater levels may not rise as high as they would in the existing conditions in some areas during the late rainy season. Given that there would be such minor water level impacts of +2.9 to -15.6 feet during high groundwater conditions and that normal seasonal fluctuations are 10 to 20 feet, it is not expected that any existing groundwater wells would be prevented from accessing groundwater and likewise that pump performance (flow rate and pressure) fluctuations would be negligible and not noticeable to water users. Note that the wells that would experience the largest effect are owned by the RRBWSD.

Groundwater level changes during low groundwater conditions (i.e., late autumn or early winter just before the beginning of the rainy season) would be much less, as shown on Figure 3.11-5. Only two wells (Onyx Ranch Headquarters domestic well and Gibboney 2 Piezo), both located within the project site along the northern side of the South Fork Valley and both owned by RRBWSD, would experience an estimated groundwater level decrease of up to 5 or more feet. All other wells, including those for the local community water systems, would experience temporary seasonal groundwater level decreases of less than 5 feet and may experience an increase in groundwater levels in areas father away from the project site and closer to Isabella Reservoir. Given that there would be such minor water level changes of less than -5 feet during low groundwater conditions and that normal seasonal fluctuations are 10 to 20 feet, it is not expected that any existing groundwater wells would be prevented from accessing groundwater and likewise that pump performance (flow rate and pressure) fluctuations would be negligible and not noticeable to water users. Note that the wells that would experience the largest effect are owned by the RRBWSD.

Additionally, as discussed Chapter 2 Project Description, Section 2.8 Project Implementation, the net volume of groundwater pumping from existing wells would be reduced at the Onyx Ranch agricultural operations from approximately 3,000 to 8,000 AF per year to approximately 875 AF per year, plus any water pumped from the proposed shallow, low-volume wells powered by solar facilities on the project site. With the proposed project, groundwater pumping for irrigation of the Boone Field would continue similar to the existing conditions. However, groundwater would not be used for irrigation purposes at any other fields on the Onyx Ranch. Consequently, there would be no adverse effects to the sustainable groundwater management of the Kern River Valley Groundwater Basin since the volume of groundwater in storage would increase.

The proposed project would result in a net increase in groundwater storage in the Kern River Valley Groundwater Basin. The implementation of the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume. Although there would be seasonal localized fluctuations of the groundwater table, there would be no adverse effects to the ability of nearby wells, including those of the 13 community water systems in the South Fork Valley, to pump groundwater. The largest localized decreases in groundwater levels would occur within and around the project site and, as a result, the wells that would experience the greatest effect are those owned by the RRBWSD. Therefore, the impacts relative to groundwater supplies and recharge in the Kern River Valley Groundwater Basin would be less than significant. The

proposed project would not impede the sustainable management of the Kern River Valley Groundwater Basin.

The proposed project would result in the delivery of Kern River water to existing recharge facilities in the RRBWSD service area. Depending on the year, the proposed project could provide water for groundwater replenishment in the Kern County Sub-basin, which would have a beneficial effect to groundwater levels and the aquifer volume. The proposed project would not impede, but rather support, the sustainable management of the Kern County Sub-basin.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The proposed project would result in a net increase in groundwater storage in the Kern River Valley Groundwater Basin. The implementation of the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume. Although there would be seasonal localized fluctuations of the groundwater table, there would be no adverse effects to the ability of nearby wells, including those of the 13 community water systems in the South Fork Valley, to pump groundwater. Therefore, the impacts relative to groundwater supplies and recharge in the Kern River Valley Groundwater Basin would be less than significant. The proposed project would not impede the sustainable management of the Kern River Valley Groundwater Basin.

Drainage Patterns

Potential Impact HYDRO-3: Would the proposed project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: result in substantial erosion or siltation on-site or off-site; substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; or create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

As discussed in Section 2.8 Project Implementation, no construction activities would occur, except for the construction, on an as-needed basis, of up to a maximum of 12 shallow, low-volume wells powered by solar facilities. No changes would be made to the existing diversion structures and no additional diversion structures would be constructed. The operation of the existing diversion facilities would be modified to reduce surface water diversions to the project site by closing the gates/boards on existing diversion structures. Additionally, there are no

existing or planned stormwater drainage systems on or adjacent to the project site that would be affected by the proposed project.

As discussed in Section 3.11.3 Impact Analysis and Mitigation Measures, Methodology, the proposed project would construct, on an as needed basis, up to maximum of 12 shallow, low-volume wells powered by solar facilities would be installed on-site to provide livestock water. The wells would be 6 inches in diameter and approximately 20 to 50 feet deep. Each well location would have a 2,000 to 4,000 gallon aboveground tank for water storage for use during weather conditions when the solar power for well pumping does not operate. The water tank would be on the ground and connect by an aboveground pipe to a livestock trough. The footprint of aboveground well components would be approximately 20 feet by 40 feet. The construction of each well would take up to three days and would require a hollow-stem auger rig to drill the well. The location and number of the wells would be determined during the project implementation based on the transitioning of the agricultural field and pastures to non-irrigated pastures and the existing and planned livestock capacity. The combined footprint of the 12 wells would be less than one acre and, therefore, the construction of these facilities would not be subject to the State Construction General Permit. The small nature of the disturbance (less than one acre) would not be expected to affect surface water quality from runoff at the worksite. In addition, the well drilling and construction activities associated with the shallow, low-volume wells would incorporate best management practices consistent with the RRBWSD's standard practices. Due to the small, localized nature of the ground disturbance for well construction, they would not be expected to result in significant changes to drainage patterns or result in significant erosion or surface runoff. The addition of impervious surfaces for the well would be negligible and rainwater falling on the wells would flow to unpaved areas around the wells and infiltrate into the ground, similar to the existing conditions.

Relative to drainage patterns, the proposed project would add water to the South Fork of the Kern River that was previously diverted for irrigation to the project site. No other changes to drainage patterns would occur on the project site. As discussed in Section 2.7 Description of the Proposed Project of this Draft EIR, the flow rate of the surface water remaining in the South Fork of the Kern River would range from 6 to 60 cfs, depending on the amount of water available under the water rights in a given time period. These flows would be within the normal range of flows that typically occur in the South Fork of the Kern River and the Lower Kern River. The South Fork flows at the USGS Onyx gage have typically ranged from 0 cfs to 14,000 cfs, and the Kern River regulated flows below the Isabella Dam have typically ranged from 150 cfs to 4,500 cfs (for non-flashflood events). This small increase in surface flows would be on the order of less than one percent of the total flow (e.g., 60 cfs divided by 14,000 cfs is 0.4 percent). This small incremental increase would not result in significant erosion or siltation on-site or off-site.

As discussed above in Section 3.11.3 Impacts and Mitigation Measures, Methodology, with implementation of the proposed project, the volume of water stored in Isabella Reservoir would be consistent with the requirements of the Kern River Watermaster in accordance with the Isabella Reservoir Water Control Manual. The surface water that would remain in the South Fork of the Kern River with the proposed project would be allowed to pass through the Isabella Dan based on communications between the Kern River Watermaster, USACE and the RRBWSD and

would not raise its surface water level above the designated operational levels of the Reservoir. Therefore, the proposed project would not result in flooding offsite adjacent to the Isabella Reservoir in comparison to the existing conditions.

In addition, the small increase in surface flow in the South Fork of the Kern River would not change the existing occasional seasonal flooding that occurs on roads that cross the South Fork of the Kern River, such as Sierra Way and Fay Ranch Road. Based on 2019 records from the Kern County Roads Department, flooding occurred on roadways that cross the South Fork of the Kern River during the period of April 18 to May 8, 2019. During that period, flow rates in the South Fork of the Kern River as measured at the USGS Onyx gage were greater than 1,240 cfs. Additionally, during that period, diversion records for the South Fork of the Kern River indicated that approximately 90 to 100 cfs of agricultural diversions were occurring downstream of the USGS Onyx gage. As a result, the bridge capacities of Sierra Way and Fay Ranch Road were estimated to be approximately 1,150 cfs, such that the flooding of roadways would occur when flow in the South Fork of the Kern River exceeds 1,150 cfs. The proposed project could add up to 60 cfs of flow to the South Fork of the Kern River, which is approximately 5 percent of the flow associated with bridge capacity and roadway flooding.

To evaluate the potential impact of the proposed project to roadway flooding, actual river flow measurements at the USGS Onyx gage and actual agricultural diversion records were examined for April and May of 2017. There were approximately 31 days during April and May of 2017 when the South Fork of the Kern River exceeded 1,150 cfs at roadway crossings downstream of the project site. With implementation of the proposed project, there would be reduced agricultural diversions and increased flow in the South Fork of the Kern River downstream of the project site. When adding actual agricultural diversions back to the South Fork of the Kern River for April and May of 2017, the additional flow associated with the proposed project would not change the number of days that flow exceed 1,150 cfs at roadways crossing the South Fork of the Kern River. Therefore, during 2017, relative to the existing conditions, the implementation of the proposed project would not have resulted in any additional days of flooding that would cause road closures downstream of the project site. Therefore, the impacts associated with the off-site flooding of roadways would be less than significant.

The proposed project would not alter the existing drainage pattern of the project site, the South Fork of the Kern River, the Lower Kern River, or the creeks and tributaries that flow to these rivers. The proposed project would result in very small amounts of new impervious surfaces at the project site associated with the construction of a maximum of 12 shallow, low-volume wells powered by solar facilities. As a result, the proposed project would not cause: substantial erosion or siltation on-site or off-site; substantial increases in surface runoff that would result in flooding on-site or off-site; runoff water that would exceed the capacity of existing or planned stormwater drainage systems; or substantial additional sources of polluted runoff. Therefore, the impacts relative to drainage patterns, erosion, siltation, or surface runoff would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The proposed project would not alter the existing drainage pattern of the project site, the South Fork of the Kern River, the Lower Kern River, or the creeks and tributaries that flow to these rivers. The proposed project would result in very small amounts of new impervious surfaces at the project site associated with the proposed shallow, low-volume wells. As a result, the proposed project would not cause: substantial erosion or siltation on-site or off-site; substantial increases in surface runoff that would result in flooding on-site or off-site; runoff water that would exceed the capacity of existing or planned stormwater drainage systems; or substantial additional sources of polluted runoff. Therefore, the impacts relative to drainage patterns, erosion, siltation, or surface runoff would be less than significant.

Release of Pollutants in Flood Hazard Zone

Potential Impact HYDRO-4: In a flood hazard zone, would the proposed project risk release of pollutants due to project inundation?

Portions of the project site and the surrounding unincorporated communities of Weldon, Kelso Valley, and Onyx, are subject to flooding in the event of a severe rainstorm (Kern County, 2011) and are within the FEMA 100-year flood zone (see Figure 3.11-4**)** (FEMA 2008). This designation refers to flood events that are anticipated to occur every 100 years, although such an event could occur at any time.

As discussed above under Potential Impact HYDRO-3, the proposed project would add water to the South Fork of the Kern River that was previously diverted for irrigation to the project site. As discussed in Section 2.7 Description of the Proposed Project of this Draft EIR, the flow rate of the surface water remaining in the South Fork of the Kern River would range from 6 to 60 cfs, depending on the amount of water available under the water rights in a given time period. These flows would be within the normal range of flows that typically occur in the South Fork of the Kern River and the Lower Kern River. The South Fork flows at the USGS Onyx gage have typically ranged from 0 cfs to 14,000 cfs and the Kern River regulated flows below the Isabella Dam have typically ranged from 150 cfs to 4,500 cfs (for non-flashflood events). This small increase in surface flows would be on the order of less than one percent of the total flow (e.g., 60 cfs divided by 14,000 cfs is 0.4 percent) and, therefore, would not result in significant flooding on the project site or along the South Fork of the Kern River. There would be no significant increase in flooding or increase in the risk of flood hazards relative to the existing conditions in the designated 100-year flood zone within the Hydrological Study Area, including the project site. Additionally, as discussed above, with the exception of the limited construction associated with up to 12 wells on the project site, the proposed project would not result in any additional development. In addition, as discussed in Section 3.10 Hazards and Hazardous Materials, the proposed project would continue the use of herbicides and pesticides on the project site, similar to existing conditions. As a result, the proposed project would not introduce structures, facilities, or

hazardous compounds that could increase the risk of release of pollutants in a flood hazard zone due to project inundation. Therefore, impacts would be less than significant.

As discussed above in Section 3.11.3 Impacts and Mitigation Measures, Methodology, the volume of water stored in Isabella Reservoir would be consistent with the requirements of the Kern River Watermaster in accordance with the Isabella Reservoir Water Control Manual. The surface water that would remain in the South Fork of the Kern River with the proposed project would be allowed to pass through the Isabella Dam based on communications between the Kern River Watermaster, USACE, and the RRBWSD and would not raise the surface water level above the designated operational levels of the Isabella Reservoir. Therefore, the proposed project would not result in a change to flood hazard inundation at the Isabella Reservoir relative to the existing conditions and, therefore, would not increase the risk of the release of pollutants due to inundation.

The proposed project would result in a small increase in surface flows in the South Fork of the Kern River on the order of less than one percent of the total flow. There would be no significant increase in flooding or increase in the risk of flood hazards that would result in inundation on the project site, along the South Fork of the Kern River, at the Isabella Reservoir, or along the Lower Kern River. The proposed project would not introduce new structures, facilities, or hazardous compounds or operations that would result in the increased risk of the release of pollutants in a flood hazard zone. Therefore, impacts would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The proposed project would result in a small increase in surface flows in the South Fork of the Kern River on the order of less than one percent of the total flow. There would be no significant increase in flooding or increase in the risk of flood hazards that would result in inundation on the project site, along the South Fork of the Kern River, at the Isabella Reservoir, or along the Lower Kern River. The proposed project would not introduce new structure, facilities, or hazardous compounds or operations that would result in the increased risk of the release of pollutants in a flood hazard zone. Therefore, impacts would be less than significant.

Flooding

Potential Impact HYDRO-5: Would the proposed project expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?

The project site is not located downstream of a dam and would not be subject to inundation from a dam or levee failure. Therefore, no impact would occur.

Additionally, the project site is upstream of the Isabella Reservoir and the Isabella Dam. As stated in Chapter 2 Project Description, on an average annual basis, implementation of the proposed project would result in an average of 7,265 net AFY of redirected flows from the project site resulting in an average of 6,014 net AFY of new water in the Isabella Reservoir. As discussed above for Potential Impact HYDRO-4, the implementation of the proposed project would not result in net changes to the surface water elevation or volume of water stored in the Isabella Reservoir. The volume of water stored in the Isabella Reservoir would be consistent with the requirements of the Kern River Watermaster in accordance with the Isabella Reservoir Water Control Manual. The surface water that would remain in the South Fork of the Kern River with the proposed project would be natural river flow that would be allowed to pass through the Isabella Reservoir and the Isabella Dam based on communications between the Kern River Watermaster, USACE, and the RRBWSD and would not raise the surface water level above the designated operational levels of the Isabella Reservoir. Therefore, the proposed project would not cause a change to flood hazard inundation at the Isabella Reservoir and the Isabella Dam in comparison to the existing conditions and would not result in an increased risk of dam failure. Therefore, impacts would be less than significant.

In addition, the USACE is currently constructing the Isabella Lake Dam Safety Modification Project, which addresses potential overtopping and seismic and seepage issues identified with Isabella Reservoir's main and auxiliary dams to reduce the likelihood of dam failure (USACE, 2019). While the Dam Safety Modification Project is being constructed, USACE has: increased surveillance and monitoring; stockpiled emergency materials; installed warning sirens in the community of Lake Isabella; installed additional instrumentation for monitoring; and conducted continued public outreach with Kern County and the local communities. Since 2006, water storage in the Reservoir has been limited to approximately 60 percent of capacity or 361,250 AF, which corresponds to a water surface elevation of 2,589 feet (USACE, 2020). As of January 7, 2020, the current storage pool was at 169,461 AF and an elevation of 2,560.3 feet (USACE, 2020). The Isabella Reservoir capacity would be restored to 570,000 AF upon completion of the Dam Safety Modification Project.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The project site is not located downstream of a dam and would not be subject to inundation from a dam or levee failure. Therefore, no impact would occur.
- The proposed project would not result in a change to the water surface elevation or volume of water stored at Isabella Reservoir or affect the operation of Isabella Reservoir for flood control purposes. The proposed project would not result in an increased risk of the failure of the Isabella Dam or flooding downstream. Additionally, the Isabella Lake Dam Safety Modification Project, currently under construction, addresses potential overtopping and seismic and seepage issues identified with Isabella Reservoir's main and auxiliary dams to reduce the likelihood of dam failure. Therefore, impacts would be less than significant.

Water Quality Control Plan & Sustainable Groundwater Management Plan

Potential Impact HYDRO-6: Would the proposed project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

As discussed above in Potential Impact HYDRO-1, the proposed project would not adversely affect surface water quality or groundwater quality. Therefore, the proposed project would not adversely affect beneficial uses of surface water or groundwater as identified in the Tulare Lake Basin Plan (see Tulare Lake Basin Plan in Section 3.11.2 Regulatory Framework). In addition, as discussed above in Potential Impact HYDRO-2, the proposed project would increase the storage of groundwater in the Kern River Valley Groundwater Basin. The proposed project also would increase flow in the South Fork of the Kern River downstream of the project site, downstream of Isabella Reservoir, and below the Isabella Dam in the Lower Kern River until the RRBWSD diversion points at their recharge basins. As a result, the implementation of the proposed project would provide Kern River water for groundwater replenishment in the Kern County Sub-basin, which would have a beneficial effect to groundwater levels and aquifer volume. Therefore, the proposed project would not conflict or obstruct with the Tulare Lake Basin Plan requirement for surface water and groundwater to be put to beneficial use to the fullest extent of which they are capable. The project site and the surrounding area along the South Fork of the Kern River are located in the Kern River Valley Groundwater Basin, which is not identified by the DWR as a critically overdrafted basin. As previously discussed, the DWR considers the Kern River Valley Groundwater Basin to be a low priority basin. Therefore, the Kern River Valley Groundwater Basin is not subject to a SGMA Groundwater Sustainability Plan.

The RRBWSD service area is within the Kern County Sub-basin (DWR Basin 5-022.14), which is considered a high-priority basin by the DWR. The RRBWSD is a member of the Kern Groundwater Authority, which has prepared a Groundwater Sustainability Plan for the portion of the Kern County Sub-basin that is within the boundaries of its member agencies. The Groundwater Sustainability Plan includes sustainability goals for the RRBWSD Management Area and projects to be implemented to achieve the goals (Kern Groundwater Authority, 2019). The proposed project is included in the Kern Groundwater Authority's Groundwater Sustainability Plan as one of many projects and management actions that would support

sustainability of groundwater levels, groundwater storage, groundwater quality, and land subsidence in the Kern County Sub-basin. Therefore, implementation of the proposed project would not conflict with or obstruct, but rather supports the implementation of a sustainable groundwater management plan.

The implementation of the proposed project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. No impact would occur.

Mitigation Measures

None required.

Significance Determination

No Impact

Impact Summary

- The project site is located in the Kern River Valley Groundwater Basin, which is a low-priority basin, and does not require preparation of a groundwater sustainability plan. No impact would occur.
- The proposed project would not adversely affect surface water quality or groundwater quality or the availability or surface water or groundwater in the South Fork of the Kern River or Kern River Valley Groundwater Basin. Therefore, the proposed project would not conflict with or obstruct implementation of the Tulare Lake Basin Plan (water quality control plan) or the beneficial uses of the South Fork of the Kern River, Isabella Reservoir, or Kern River Valley Groundwater Basin. No impact would occur.
- The RRBWSD is located in the Kern County Sub-basin (DWR Basin 5-022.14), which is considered a high-priority basin by the DWR. The RRBWSD is a member of the Kern Groundwater Authority, which has prepared a Groundwater Sustainability Plan for the portion of the Kern County Sub-basin that is within the boundaries of its member agencies. The proposed project is included in the Kern Groundwater Authority's Groundwater Sustainability Plan and, therefore, would not conflict with or obstruct, but rather supports, the implementation of a sustainable groundwater management plan. No impact would occur.

Potential Cumulative Impacts

This section presents an analysis of the cumulative effects of the proposed project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively considerable impacts. As discussed above in Section 3.11.3 Impact Analysis and Mitigation Measures, the proposed project would have no impacts or a less than significant impact relative to: the potential for violation of water quality standards; depletion of groundwater supplies or groundwater recharge; changes in drainage patterns resulting in substantial erosion or siltation or flooding on- or off-site, or exceed stormwater drainage systems; cause release of pollutants in a flood hazard zone; dam or levee failure; or conflict with the water quality objectives of the Basin

Plan or a sustainable groundwater management plan. Accordingly, the proposed project would not contribute to cumulative impacts related to these environmental issues.

Cumulative projects are listed on Table 3-2 in Section 3.2 Cumulative Impacts and the cumulative project locations are shown on Figure 3-1. Cumulative Projects E through J are located downstream of the Isabella Reservoir and the Isabella Dam and include the Kern River diversion projects and groundwater banking projects. Given that the proposed project would be adding water to the Kern River and would not decrease the Kern River water supply or affect Kern River water rights downstream of the Isabella Dam, there would be no adverse impact to Kern River diversions, Kern River water rights, or groundwater recharge associated with any of the cumulative projects downstream of Isabella Reservoir and the Isabella Dam. Additionally, the proposed project would support sustainable groundwater management in the Kern County Sub-basin. Therefore, the proposed project, when considered together with Cumulative Projects E through J, would have no cumulatively considerable adverse impacts to hydrology and groundwater resources.

The cumulative geographic area upstream of Isabella Reservoir and the Isabella Dam is defined by the Hydrological Study Area and includes Cumulative Project A, Isabella Lake Dam Safety Modification Project, and Cumulative Project D, Weldon Regional Water District. Cumulative Project A, Isabella Lake Dam Safety Modification Project, which is currently under construction, would bolster the existing dam structure and facilities to ensure dam stability. Cumulative Project A would not change water quality and, therefore, would not result in cumulatively considerable impacts when considered together with the proposed project relative to water quality. The proposed project would not change the volume of water stored in the Isabella Reservoir and, therefore, would not affect the Isabella Dam or increase the risk of failure of the Isabella Dam. Therefore, the proposed project, when considered together with Cumulative Project A, would have no cumulatively considerable adverse impacts to hydrology or water quality.

Cumulative Project D, Weldon Regional Water District, would result in construction of new physical facilities including groundwater wells, pipelines, booster pump stations, storage tanks and reservoirs, and a new office in the unincorporated community of Weldon. Construction activities would cause ground disturbance and result in typical potential significant impacts to water quality due to erosion, siltation, offsite flooding, and changes in drainage patterns. As described in the MND adopted for the proposed new Water District, Cumulative Project D would implement standard best management practices and stormwater pollution prevention plans to mitigate such construction-related impacts to less than significant levels (Tom Dodson & Associates, 2020). In addition, Cumulative Project D would replace three existing groundwater wells with two new groundwater wells; however, operation of the new wells would not result in groundwater extractions that are substantially greater than the amount of water currently pumped from the Kern River Valley Groundwater Basin under the existing condition (Tom Dodson & Associates, 2020). Therefore, when considered together with Cumulative Project D, the proposed project would not result in cumulatively considerable impacts to hydrology or water quality.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- Neither the proposed project, nor the cumulative projects, would have significant impacts to hydrology or water quality. Therefore, when considered together with the cumulative projects, the proposed project would not result in cumulatively considerable impacts associated with hydrology and water quality.

3.11.4 References

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3.12 Land Use and Planning

This section addresses the potential impacts related to land use and planning associated with implementation of the proposed project. This section includes: a description of existing land uses on the project site and in the surrounding area; a summary of applicable regulations related to land use and planning; and an evaluation of the potential for the proposed project to result in environmental impacts related to land use and planning. In addition, an evaluation of the potential cumulative impacts is included.

The NOP and Initial Study determined that the proposed project would have no impact or a less than significant impact related to land use and planning for the following issues:

- Physically divide an established community.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

Therefore, these issues are not discussed further in this Draft EIR. (See the Initial Study in Appendix A, Public Participation Process, for additional information.)

The NOP and Initial Study determined that the proposed project would have no impact related to land use and planning for the following issue and would not be discussed in this Draft EIR:

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

However, public comments related to the issue of land use were received during the NOP public review period. As a result, this issue has been added to the scope of this Draft EIR. The analysis of this potential impact is provided below in Section 3.12.3 Impact Analysis and Mitigation Measures.

The CEQA Guidelines were revised on December 28, 2018, which resulted in revisions to the questions in Appendix G Environmental Checklist about potential impacts related to the Land Use and Planning environmental topic. These changes are reflected in the threshold of significance and the analysis of these potential impacts provided below in Section 3.12.3 Impact Analysis and Mitigation Measures.

3.12.1 Environmental Setting

Location and Setting on the Project Site

The 4,109-acre project site is located in northeastern Kern County, in the Kern River Valley, within the South Fork Valley (see Figures 2-1 and 2-2 in Chapter 2 Project Description of this Draft EIR). The project site is located approximately 5 miles east of the eastern boundary of the Isabella Reservoir and situated adjacent to and on either side of the South Fork of the Kern River.

Since its settlement in the 1860s, the primary land use in the South Fork Valley has been irrigated agriculture and ranching (Crooker, 1930). Historical water supply for the irrigation of crops on the project site has been accomplish through a system of unlined canals that divert surface water from the South Fork of the Kern River to the canals. Existing crop irrigation is also supplemented with groundwater pumped from production wells[1] on the project site.

The topography on the project site ranges from 2,640 to 3,320 feet above mean sea level (amsl). An aerial photograph in Figure 2-3 in Chapter 2 Project Description of this Draft EIR, shows the existing conditions on the project site, including land uses, on and adjacent to the project site. The project site has a combination of: vacant areas with steep slopes and rocky terrain generally located along the outer portions of the project site; relatively level areas with agricultural fields, ditches, and limited development; and the riverbed and banks of the South Fork of the Kern River that traverses through the site. In addition, the project site has cottonwood/willow riparian habitat.

In Chapter 2 Project Description of this Draft EIR, Figure 2-4 indicates the locations of the existing tracts, agricultural fields, and ditches on the project site and where the ditches originate or end off-site. Of the approximately 3,418 acres of land on the Onyx Ranch portion of the project site, approximately 2,269 acres are currently used for an agricultural purpose, and the remaining approximately 1,149 acres is either developed or mountainous and, therefore, not suitable for agriculture. For the Smith Ranch portion of the project site, of the approximately 691 acres, approximately 308 acres are riparian pasture, 171 acres are mountainous areas, and approximately 242 acres are used for irrigated pasture purposes. The riparian and irrigated pastures have been irrigated for at least the last twenty years.

As indicated in Figure 2-3, in addition to SR 178 which traverses through the two parts of the project site, there are three developed areas on the project site: (1) the Onyx Ranch Headquarters located along the northern boundary of the project site; (2) the Onyx Store, adjacent single family residence, and sheds located along the southern side of SR -178, in the central-eastern portion of the project site; and (3) buildings associated with the Smith Ranch located in the eastern portion of the project site. A review of aerial photographs of the project site indicated that the structures on the Onyx Ranch were constructed prior to 1952 (Kennedy Jenks Consultants, 2008, page 3-2 and 3-3). Based on a site visit in 2019, it was concluded that little change to development has occurred on the project site since then.

The structures and supporting facilities that comprise the Onyx Ranch Headquarters include ranch-style residential structures, rows of cabins, barns, silos, storage sheds, water wells, corals, and a storage area for old equipment and debris. There are internal paved and dirt roads that are lined with trees in some places. Access is provided from SR 178 via Doyle Ranch Road that has a bridge over the South Fork of the Kern River. The Onyx Store, which was founded in 1861, continues to operate today. Adjacent to the Onyx Store is a single-family residence as well as storage sheds and a parking lot. Access to these structures is provided from SR 178. The proposed project does not involve any changes to the Onyx Ranch Headquarters or the Onyx Ranch Store.

[1] A production well is a well from which water is actually to be recovered as opposed to wells used to determine the hydrologic characteristics or recharge an aquifer.

The structures and facilities associated with the Smith Ranch include a residence, two barns, two corrals, a saddle house, storage sheds, associated outbuildings, and water wells. The proposed project does not involve any changes to these structures or facilities.

Jurisdictional Setting

The project site is shown in its jurisdictional setting in Figure 2-2. As indicated in Figure 2-2, the majority of the project site is located within the Kern River Valley Specific Plan (KRVSP) boundaries, east of the Isabella Dam and Isabella Reservoir. A small portion of the project site on the northern boundary of Smith Ranch is to the north of the KRVSP. The project site is situated adjacent to and on either side of the South Fork of the Kern River. Between the project site and the Isabella Reservoir are two natural resource conservancy areas. At the eastern end of the Isabella Reservoir is the U.S. Forest Service South Fork Wildlife Area. The Audubon California's Kern River Preserve is located between the Wildlife Area and the project site. The Canebrake Ecological Reserve is west, south, and east of the project site, on parcels between Onyx Ranch and Smith Ranch, and on a parcel surrounded by the project site. The locations of these areas are shown in Figure 2-2.

Surrounding Land Uses

Above Isabella Reservoir along the South Fork of the Kern River, much of the land surrounding the project site is privately owned. These lands are used primarily by cattle ranches and agricultural operations, with several thousand acres protected as conservation lands by the USACE, the Bureau of Land Management (BLM), the U.S. Forest Service (USFS), Audubon California, and the California Department of Fish and Wildlife (CDFW). The communities of Weldon and Onyx are located to the south, east, and west of the project site. These small rural communities have characteristics that represent the ranching history of the South Fork Valley. In addition to smaller lot residential areas, schools, and limited commercial uses, many of the properties contain farms, horse ranches, and working cattle ranches. The locations of the conservation areas and the communities closest to the project site are shown on Figure 2-2.

Existing Land Use Categories and Designations

General Plan Land Use Categories

Table 3.12-1 and Figure 3.12-1 provide the General Plan Land Use Categories designated in the KRVSP for the portions of the project site that fall within the KRVSP area. The majority of the project site is designated as 8.1 (Intensive Agriculture) or 8.3/2.5 (Extensive Agriculture/Flood Hazard). A small portion of the northern part of the project site on Smith Ranch is located outside of the KRVSP area. The land use designation for this portion is the same as the land use designation for the area on Smith Ranch within the KRVSP area (see Figure 3.12-1). However, the General Plan goals, policies, and implementation measures would apply to that small portion of the project site. This section refers to the KRVSP and the Kern County General Plan for the land use categories and associated goals, policies, and implementation measures.

TABLE 3.12-1
GENERAL PLAN LAND USE CATEGORIES FOR THE PROJECT SITE

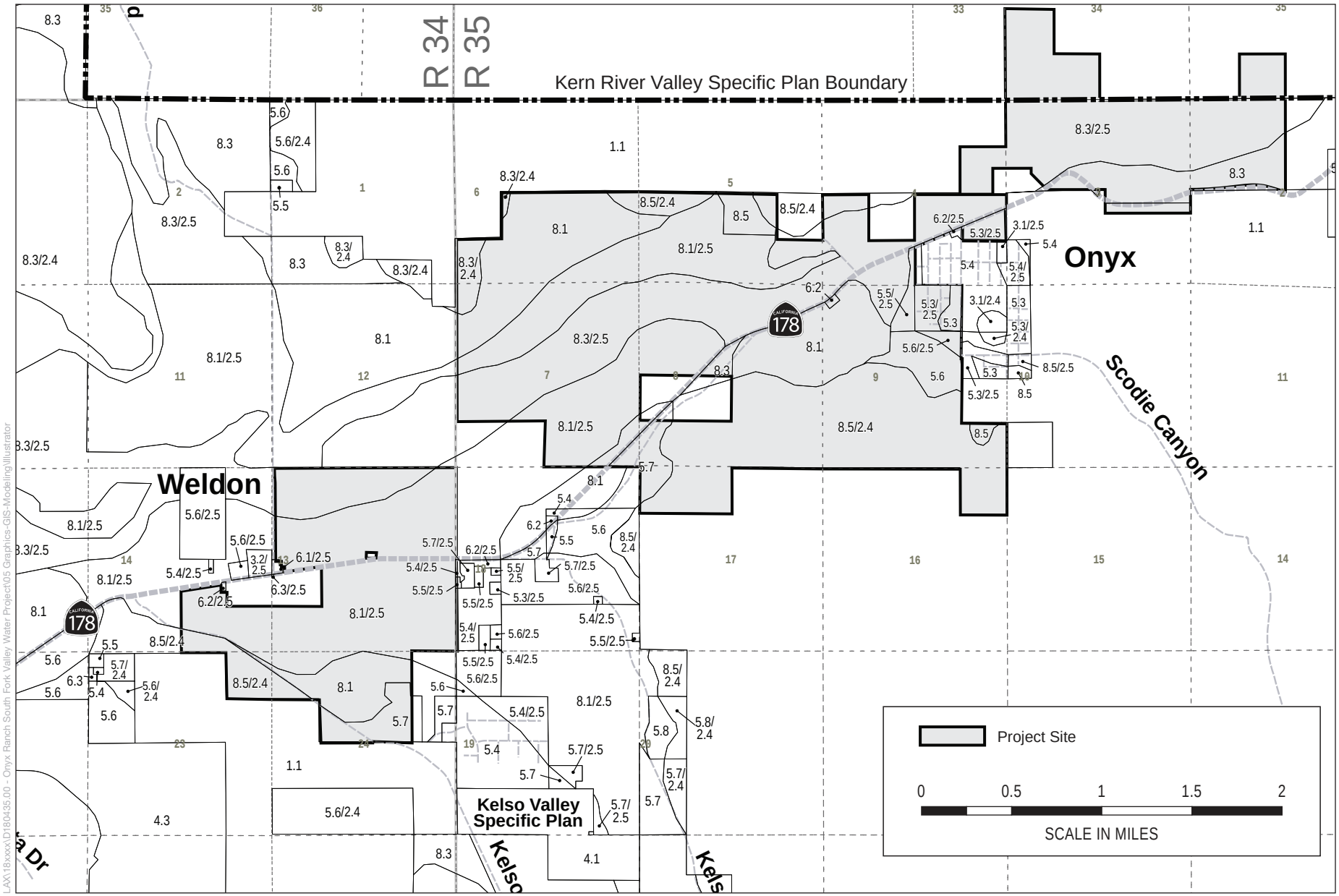
Land Use Category	Description
3.1/2.4	Parks and Recreation Areas/Steep Slope
5.5/2.5	Residential Maximum 1 Units per Net Acre/Flood Hazard
5.6	Residential Minimum 2.5 Gross Acres per Dwelling Unit
5.6/2.5	Residential Minimum 2.5 Gross Acres per Dwelling Unit /Flood Hazard
5.7	Residential Minimum 5 Gross Acres per Dwelling Unit
6.2	General Commercial
8.1	Intensive Agriculture
8.1/2.4	Intensive Agriculture/Steep Slope
8.1/2.5	Intensive Agriculture/Flood Hazard
8.3	Extensive Agriculture
8.3/2.4	Extensive Agriculture/Steep Slope
8.3/2.5	Extensive Agriculture/Flood Hazard
8.5	Resource Management
8.5/2.4	Resource Management/Steep Slope

SOURCE: Kern County, 2009; Kern County, 2011b.

The land use designation 8.1 (Intensive Agriculture) is intended for areas devoted to the production of irrigated crops or having a potential for such use (Kern County, 2011b, Land Use Element Table 2-1). The land use designation 8.3 (Extensive Agriculture) is intended for agricultural areas involving large amounts of land, such as livestock grazing and dry land farming (Kern County, 2011, Land Use Element Table 2-1). The land use designation 2.5 (Flood Hazard) indicates areas within a Flood Hazard Area (Zone A) as identified on the Flood Insurance Rate Maps (FIRM) of the Federal Emergency Management Agency (FEMA). (See Section 3.11 Hydrology and Water Quality for additional discussion about FEMA Flood Hazard Areas.)

Zoning District Designations

The Kern County zoning designations for the proposed project site are as follows: Onyx Ranch is zoned as A (Exclusive Agriculture), A-1 (Limited Agriculture), A-1 MH (Limited Agriculture/Mobilehome Combining), E (2 ½) (Estate – 2 ½ Acres), and CH (Highway Commercial); and Smith Ranch is zoned as A (Exclusive Agriculture) and RF (Recreation Forestry). The Zoning District Designations are defined in Section 3.4 Agriculture and Forestry Resources of this Draft EIR and shown in Figure 3.4-4.



SOURCE: Kern River Valley Specific Plan, adopted June 28, 2011

Onyx Ranch South Fork Valley Water Project

Figure 3.12-1
General Plan Land Use Categories - Kern River Valley Specific Plan and Kern County General Plan

ESA

Cumulative Setting

As discussed in Section 3.2 Cumulative Impacts Methodology, the geographic area addressed in the discussion of cumulative impacts varies depending on the environmental resource topic being analyzed. The geographic area for the analysis of the potential cumulative impacts of the proposed project and cumulative projects related to land use and planning is limited to the Kern River Valley. As such, the environmental setting for cumulative impacts is the same as that described above for the proposed project.

3.12.2 Regulatory Framework

Federal

While there are federal jurisdictions that operate and manage land in the Kern River Valley, there is no federal lands within the project site. No federal land use policies or regulations are applicable to the proposed project.

State of California

California Planning and Zoning Law

The California Planning and Zoning Law requires each county and city to prepare and adopt "a comprehensive, long-term general plan for the physical development of the county or city" and of any land outside its boundaries which bears relation to its planning (Government Code section 65300). Under Government Code Section 65302, each General Plan must include the following elements: Land Use Element; Circulation Element; Housing Element; Conservation Element; Open Space Element; Noise Element; and Safety Element. Government Code Section 65302 also sets forth particular requirements that must be included in each of the seven elements. The California Governor's Office of Planning and Research (OPR) is statutorily required by Government Code Section 65040.2 to adopt and periodically revise the State General Plan Guidelines (GPG) for the preparation and content of general plans for all cities and counties in California. A general plan is the local government's long-term blueprint for the community's vision of future growth. The GPG serves as the "how to" resource for drafting a general plan. The GPG was last updated in 2017 (OPR, 2017).

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) was adopted in 2014 and became effective January 1, 2015. SGMA gives local agencies the authority to customize groundwater sustainability plans to their regional economic and environmental needs and manage groundwater in a sustainable manner to protect groundwater resources. SGMA establishes a definition of sustainable groundwater management and a framework for local agencies to develop plans and implement sustainable management strategies to manage groundwater resources, prioritizes basins (ranked as high- and medium-priority) with the greatest problems (i.e., the undesirable results as discussed below), and sets a 20-year timeline for implementation.

The DWR and the SWRCB are the lead state agencies responsible for developing regulations and reporting requirements necessary to carry out SGMA. DWR sets basin prioritization, basin boundaries, and develops regulations for groundwater sustainability. The SWRCB is responsible for fee schedules, data reporting, probationary designations and interim sustainability plans.

The project site, South Fork of the Kern River and the surrounding land area are located in the Kern River Valley Groundwater Basin, which is not a critically-overdrafted groundwater basin identified by the DWR. The Kern River Valley Groundwater Basin is not subject to a SGMA Groundwater Sustainability Plan because it is considered to be a "low priority" basin by the DWR.

The RRBWSD service area is within the Kern County Sub-basin (DWR Basin 5-022.14), which is considered a high-priority basin by the DWR. As such, the RRBWSD is a member of the Kern Groundwater Authority, which has prepared a Groundwater Sustainability Plan for the portion of the Kern County Sub-basin that is within the boundaries of its member agencies.

Local

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, objectives, and policies of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the KRVSP area; the KRVSP addresses approximately 110,510 acres in the northeastern portion of Kern County. The KRVSP states goals, policies, and implementation measures to guide land use planning and expand the community's cultural and historic resources, ranching and agricultural lands, and business and tourism resources, while conserving environmental and natural resources, and protecting cultural resources and traditional uses of land in the Valley Communities over the next 20 years (Kern County, 2011b). The applicable elements and their goals, polices, and implementation measures are described below.

Land Use Element

The Land Use Element discusses established and future development patterns within the Kern River Valley; sets forth goals, policies, and implementation measures to guide decision-making; and provides a land use plan to direct growth to desired areas where infrastructure and services can be provided while minimizing potential impact on natural resources. Regarding land use and planning the Land Use Element identifies goals, policies, and implementation measures to retain and preserve the character of the Kern River Valley. The applicable goals and policies are as follows:

General Land Use

Goal 2.1.2: Protect historical and cultural resources and sites within the Kern River Valley.

Goal 2.1.3: Retain and enhance the scenic, quaint, and small town rural character of the individual communities within the Kern River Valley.

Goal 2.1.5: Promote land use and development that results in sustainable use and conservation of the Valley's resources.

Policy 2.1.1: Preserve the character of the Kern River Valley communities by encouraging land uses and development densities that are consistent with a small-town rural character.

Policy 2.1.10: Promote the preservation of cultural and historic resources which provide ties to the past.

Open Space and Recreation Element

The Open Space and Recreation Element focuses on the enhancement of Open Space and Recreational facilities. Large open spaces support many uses that define the Kern River Valley's character, including cattle grazing, historic buildings, undeveloped hillsides, narrow roads, and starlit skies at nighttime. Regarding land use and planning the Open Space and Recreation Element identifies goals, policies, and implementation measures to protect and maintain water and ecosystems in the Kern River Valley. The applicable goals and policies are as follows:

Open Space/Watershed Management

Goal 4.1.1: Protect and maintain water and related natural systems for all existing and future reasonable and beneficial uses within the South Fork Kern and Upper Kern watersheds.

Goal 4.1.2: Ensure future watershed management decisions incorporate all property owners including government agencies and private landowners.

Goal 4.1.3: Preserve open space areas as a visual and environmental resource, and to maintain the rural atmosphere of the Kern River Valley.

Policy 4.1.1: To the maximum extent possible, preserve existing wetlands and the hydrological systems that support them.

Policy 4.1.4: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood-protection ordinances and the National Pollution Discharge Elimination System (NPDES) permit.

Policy 4.1.5: Areas along rivers and streams will be conserved to enhance drainage, flood control, recreational, and other beneficial uses while acknowledging existing land use patterns.

Policy 4.1.6: All storm water drainage areas should be contained in natural drainage channels, and the grading of such channels and easements shall be kept to a minimum.

Policy 4.1.7: Promote conservation of stream buffers, forests, meadows, and other areas of watershed value.

Natural Ecosystems

Goal 4.2.1: Preserve and maintain natural ecosystems and vegetation communities that support wild plants and animals.

Goal 4.2.2: Support and promote the restoration and maintenance of native habitat and wildlife species indigenous to the Kern Valley ecosystem.

Policy 4.2.1: Protect threatened and endangered plant and wildlife species in accordance with State and federal laws.

Conservation Element

The Conservation Element focuses on practices that can ensure the long-term survival of resources that Kern River Valley residents enjoy and cherish. The Conservation Element identifies goals, policies, and implementation measures to protect air quality, scenic resources, agriculture and ranching, water conservation, and to promote the use of solar and wind energy in the Kern River Valley Area. The applicable goals, policies, and implementation measures are as follows:

Air Quality

Goal 5.5.1: Protect and improve air quality in the Kern River Valley.

Policy 5.5.1: Cooperate with the Eastern Kern Air Pollution Control District to implement their Air Quality Attainment Plans and to meet federal and State standards. Kern County shall require dust control measures for roads as conditions of approval for subdivision maps and other discretionary actions.

Policy 5.5.2: Continue to enforce the Kern County grading ordinance through the Kern County Engineering, Surveying and Permit Services Department, along with dust control and other rules and measures through the Eastern Kern Air Pollution Control District to mitigate air quality effects during the construction of new development.

Policy 5.5.3: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the Eastern Kern Air Pollution Control District.

Policy 5.5.10: Create incentives for the use of domestic and commercial solar and wind energy uses to conserve fossil fuels and improve air quality.

Solar and Wind Energy

Goal 5.6.1: Promote use of solar and wind energy in Kern River Valley.

Policy 5.6.1: Encourage the use of domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Scenic Resources

Goal 5.1.1: Preserve and protect scenic resources.

Policy 5.1.1: Preserve areas with scenic qualities and natural beauty.

Policy 5.1.3: Work with federal, State, regional, and other appropriate public agencies, non-profit organizations, and landowners to conserve, protect, and enhance natural resources in the Specific Plan Area.

Agricultural and Ranching Resources

Goal 5.2.1: Maintain the rural character of the Kern River Valley by protecting grazing and farmland.

Policy 5.2.3: Develop community awareness and support of local agriculture and grazing operations.

Implementation 5.2.2: Collaborate with State, federal, and local governmental agencies, and private entities as well as landowners to preserve agricultural land.

Water Conservation

Goal 5.3.1: Maintain a balance between water supply and water consumption.

Policy 5.3.3: Require water conservation, which may include landscaping with drought-tolerant plants, use of reclaimed water (gray water), and recycling of cooling system water, in all development.

Policy 5.3.7: Develop a regional approach to resolve water supply issues in the Kern River Valley.

Public Safety Element

The Public Safety Element describes the Kern River Valley as being susceptible to natural hazards. The Public Safety Element factors wildland fire hazards, flooding and dam inundation, shallow groundwater, and geologic hazards into the Kern River Valley's land use planning. The applicable goals, policies, and implementation measures are as follows:

Wildland Fire

Goal 6.1.1: Protect structures from wildland fires through vegetation management.

Goal 6.1.2: Ensure that infrastructure such as emergency water sources, road access, address displays, and other support systems are sufficient to protect residents against wildland fires.

Policy 6.1.8: Property owners shall maintain minimum weed abatement or vegetation clearing around and within individual lots as specified by the Kern County Building Code addressing weeds (Chapter 8.46), which is administered by the Kern County Fire Department.

Policy 6.1.9: Encourage the use of defensible space principles, including revegetation with less flammable species and the use of mulch to prevent erosion on bare soil.

Implementation 6.1.6: Require that all roads in wildland fire areas are well marked and that homes have addresses prominently displayed.

Implementation 6.1.11: The Kern County Fire Department shall continue to work with property owners to maintain minimum weed abatement or vegetation clearing around and within individual lots as specified by the Kern County Building Code addressing weeds (see Code 8.46).

Flooding and Dam Inundation

Goal 6.2.1: Prevent loss of life, reduce personal injuries and property damage, and minimize economic loss resulting from flood hazard, and dam inundation conditions.

Policy 6.2.2: Prohibit incompatible uses in primary floodway areas.

Policy 6.2.3: Minimize the alteration of primary floodways, stream channels, and natural protective barriers that accommodate or channel floodwaters.

Policy 6.2.6: Minimize the potential for damage from floods by protecting and restoring the natural water storage and conveyance functions of primary floodways giving preference wherever possible to nonstructural surface water management methods.

Shallow Groundwater

Goal 6.3.1: Ensure public health and safety risks associated with shallow groundwater have been minimized to the greatest extent possible as well as protect the groundwater quality.

Policy 6.3.2: This Plan's Physical and Environmental Constraints Map shall provide the most up to date information on the location of shallow groundwater areas. Subsequent shallow groundwater studies performed by a qualified hydrologist shall be incorporated within this map.

Seismic and Geologic Hazards

Goal 6.4.1: Minimize the potential damage to structures and loss of life that could result from geologic hazards.

Economic Development Element

The Economic Development Element focuses on promoting small business and tourism enterprises for the Kern River Valley area. The Element identifies goals, policies, and implementation measures to encourage businesses that enhance the economy while maintaining unique values to the Kern River Valley area. The applicable goal and policy are as follows:

Goal 8.1.1: Encourage and facilitate a wide range of business activities that enhance the local economy while maintaining the rural atmosphere of the Kern River Valley.

Policy 8.2.5: Recognize the importance of the rural character, historic heritage, forests, recreation opportunities, and scenic wilderness areas to the economic viability of the Kern River Valley.

Public Facilities and Services Element

The Public Facility and Services Element describes the systems that must be maintained to ensure that existing residents and businesses have service. In addition, this Element addresses law enforcement, fire protection, and emergency response needed in the event of any major emergency or disaster that occurs in the Kern River Valley. The Element identifies goals, policies, and implementation measures to promote reliable water supply systems and provide adequate emergency protection in the Kern River Valley Area. The applicable goals and policies are as follows:

Water Supply and Distribution

Goal 9.2.1: Support affordable coordinated, comprehensive, and reliable water supply systems and facilities capable of meeting both normal and dry year water demands.

Policy 9.2.1: Ensure that water purveyors provide sufficient water storage, treatment, and transmission facilities to meet the existing and projected water needs of the Kern River Valley, while emphasizing conservation goal.

Water Quality

Goal 9.3.1: Protect and improve local groundwater quality.

Policy 9.3.1: Ensure that water quality standards are met for existing and future users.

Policy 9.3.3: Establish a coordinated effort to protect water quality by preventing further degradation of existing water resources and supply.

Law Enforcement, Fire Protection and Emergency Response

Goal 9.4.1: Provide adequate emergency and fire protection and law enforcement for the residents of Kern River Valley.

Policy 9.4.1: Ensure that new development does not create a burden on adequate levels of law enforcement and fire protection services.

Policy 9.4.2: The County will ensure adequate police and fire protection to all Kern River Valley residents.

Sustainability Element

The Sustainability Element focuses on reinforcing the goal to promote sustainable and strategic growth which utilizes energy and other resource-efficient practices. The Sustainability Element identifies goals, policies, and implementation measures to promote sustainability in the Kern River Valley area. The goals and policies that are applicable to the proposed project are as follows:

General Sustainability

Goal 11.1.2: Encourage development to use alternative renewable energy sources and energy conservation and efficient measures.

Goal 11.1.3: Encourage landscape design and maintenance and agricultural practices that reduce or eliminate the use of pesticides and herbicides, as well as conserving water.

Policy 11.1.4: Encourage the use of agricultural management practices that result in the efficient use of water resources.

Policy 11.1.5: Promote organic agriculture in order to minimize use of chemical pesticides and herbicides and to encourage agri-tourism.

Policy 11.1.8: Encourage agricultural practices that require reduced water demand and utilize the most efficient irrigation practices.

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009).

Land Use, Open Space, and Conservation Element

The Land Use, Open Space, and Conservation Element of the General Plan provides for the conservation of Kern County's agricultural and natural resources (Kern County, 2009) and includes goals, policies and implementation measures relevant to land uses categorized as "Resource," which includes Intensive Agriculture and Extensive Agriculture land use designations. The Land Use, Open Space and Conservation Element provides the following applicable goals, policies, and implementation measures relevant to the proposed project:

Resource Provisions

Goal 2. Protect areas of important mineral, petroleum, and agricultural resource potential for future use.

Goal 3. Ensure the development of resource areas minimize effects on neighboring resource lands.

Goal 5. Conserve prime agriculture lands from premature conversion.

Goal 6. Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.

Policy 7. Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.

Policy 10. To encourage effective groundwater resource management for the long-term economic benefit of the County the following shall be considered:

(a) Promote groundwater recharge activities in various zone districts.

(d) Support the development of future sources of additional surface water and groundwater, including conjunctive use, recycled water, conservation, additional storage of surface water and groundwater and desalination.

Policy 20. Areas along rivers and streams will be conserved where feasible to enhance drainage, flood control, recreational, and other beneficial uses while acknowledging existing land use patterns.

General Provisions – Air Quality

Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision making body, as part of its deliberations, will ensure that:

(1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted.

(2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act.

Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits.

Policy 21: The County shall support air districts efforts to reduce PM10 and PM2.5 emissions.

General Provisions – Archaeological, Paleontological, Cultural, and Historical Preservation

Policy 25: The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measure K. Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

Implementation Measure L. The County shall address archaeological and historical resources for discretionary projects in accordance with the California Environmental Quality Act (CEQA).

Implementation Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.

Implementation Measure 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.

Implementation Measure 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.

General Provisions – Threatened and Endangered Species

Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws.

Policy 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.

Policy 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.

General Provisions - Surface Water and Groundwater

Policy 34: Ensure that water quality standards are met for existing users and future development.

Policy 39: Encourage the development of the County's groundwater supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.

Safety Element

The Safety Element of the County General Plan describes potential geologic hazards to the County's citizens. The Safety Element provides the following goals, policies, and implementation measures relevant to the proposed project:

General Safety

Goal 1: Minimize injuries and loss of life and reduce property damage.

Goal 4: Create an awareness of the residents in Kern County through the dissemination of information about geologic, fire, and flood safety hazards.

Policy 4.2, 1: That the County's program of identification, mapping, and evaluating the geologic, fire, flood safety hazard areas, and significant concentrations of hydrogen sulfide in oil field areas, presently under way by various County departments, be continued.

Implementation Measure 4.2, F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by FEMA, shall be used as a source document for preparation of environmental documents pursuant to CEQA, evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats of public safety.

Implementation Measure 4.5, C: Develop and maintain maps, at an appropriate scale, showing the location of all geologic hazards, including active faults, Alquist-Priolo Earthquake Fault Zones, 100-year flood hazard boundary, the extent of projected dam failure inundation and time arcs, depth of inundation, land subsidence, slope failure and earthquake induced landslides, high groundwater, and liquefaction potential.

Hazardous Materials

Implementation Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.

Wildland and Urban Fire

Policy 1: Require discretionary projects to assess impacts on emergency services and facilities.

Policy 2: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers.

Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents.

Policy 5: Require that all roads in wildland fire areas are well marked, and that homes have addresses prominently displayed.

Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department.

Implementation Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.

Emergency Plan

Policy 1: Continue to maintain and update the Kern County Emergency Plan.

Policy 2: Monitor, enforce, and update, as appropriate, all emergency plans as needs and as conditions change.

Implementation Measure C: Require emergency plans to include procedures for traffic control and security of damaged areas.

Energy Element

The Energy Element identifies goals, policies, and implementation measures to protect the Kern County's energy resources and encourage orderly energy development while affording the maximum protection for the public's health, safety, and the environment.

5.4.5 Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuel and improve air quality.

5.4.5 Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.

Kern County Zoning Ordinance

The Kern County Zoning Ordinance provides the zoning districts for the parcels within the unincorporated areas of the County. The zoning designations for the proposed project site are as follows: Onyx Ranch is zoned as A (Exclusive Agriculture), A-1 (Limited Agriculture), A-1 MH (Limited Agriculture/Mobilehome Combining), E (2 ½) (Estate – 2 ½ Acres), and CH (Highway Commercial); and Smith Ranch is zoned as A (Exclusive Agriculture) and RF (Recreation Forestry). The Zoning District Designations are defined in Section 3.4 Agriculture and Forestry Resources of this Draft EIR and shown in Figure 3.4-4.

3.12.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to page 3.12-1 above for a summary of the environmental issues and significance criteria included in this Draft EIR for the analysis of land use and planning. This Draft EIR assumes implementation of the proposed project would have a significant impact related to land use and planning if it would:

- Cause a significant environmental impact due to a conflict with applicable County land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect.

Methodology

This environmental analysis of the potential impacts related to land use and planning is based on the following information: the definition of the proposed project provided above in Chapter 2 Project Description; a review of literature (public plans and maps); and the regulatory framework summarized above in Section 3.12.2. The existing conditions of the project site, as described above in Section 3.12.1, defines the baseline conditions for the impact analysis. The analysis of the potential effects of the proposed project on land use is discussed in the Impact Analysis provided below.

Impact Analysis

Conflict with Land Use Plan, Policy or Regulation

Potential Impact LU-1: Would the proposed project cause a significant environmental impact due to a conflict with a County land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?

Consistent with the CEQA Guidelines Section 15125(d), an EIR shall discuss potential conflicts between a proposed project and applicable plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect, including those of a General Plan. The following analysis addresses that requirement, specifically whether the proposed project would be consistent with the goals, policies, and implementation measures of the KRVSP and the Kern County General Plan. The consistency analysis is presented in Table 3.12-2 and Table 3.12-3 below and addresses the relevant goals, policies, and implementation measures of the KRVSP and Kern County General Plan that are identified above in Section 3.12.2.

As noted above, only a small portion of Smith Ranch is located outside the boundary of the KRVSP, within the jurisdiction of the Kern County General Plan. This portion of the project site would not be affected by the proposed project and its existing consistency with the Land Use, Open Space, and Conservation Element of the Kern County General Plan would not change.

TABLE 3.12-2
KERN RIVER VALLEY SPECIFIC PLAN CONSISTENCY ANALYSIS BY ELEMENT

Goal, Policy, or Implementation Measure	Determination of Consistency
Chapter 2: Land Use Element	
General Land Use	
Goal 2.1.2: Protect historical and cultural resources and sites within the Kern River Valley. Policy 2.1.10: Promote the preservation of cultural and historic resources which provide ties to the past.	**Consistent.** The proposed project would result in a continuation of agricultural practices currently in use on the project site, including cultivation of pastureland and cattle grazing. The proposed project would result in agriculture-related activities that would be consistent in nature and intensity to existing agricultural land management practices. While ground-disturbing activities would occur to implement non-irrigated fields and pastures as well as installation of shallow, low-volume, solar-powered wells, these activities would be consistent with historical practices in and around the project site. During well drilling, to mitigate potential impacts to historic, cultural, and paleontological resources, Mitigation Measures CUL-1, CUL-2, CUL-3, and GEO-1 would require location of wells in areas that are lacking such resources, as well as monitoring and testing during well construction (see Section 3.7 Cultural Resources and Section 3.8 Geology and Soils). As a result, there would be no significant impact to historic, cultural, or paleontological resources within the Kern River Valley. Thus, the proposed project is consistent with this land use goal and policy.
Goal 2.1.3: Retain and enhance the scenic, quaint, and small town rural character of the individual communities within the Kern River Valley.	**Consistent.** The proposed project would not change the rural character of the project site or surrounding communities in the South Fork Valley. The project does not involve construction of any new facilities that would impact the rural character of the project site. Operation of the proposed project would involve similar agricultural practices as currently used at the proposed project site; therefore, the rural character of the area would be preserved. Thus, the proposed project is consistent with this land use goal.
Goal 2.1.5: Promote land use and development that results in sustainable use and conservation of the Valley's resources.	**Consistent.** The proposed project proposes a transition from irrigated cropland and pastureland to non-irrigated fields and pastures by planting drought tolerant vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle on the project site. This change in land cover would make the land use on the project site more sustainable, by no longer requiring supplemental water for irrigation. Thus, the proposed project is consistent with this land use goal.
Policy 2.1.1: Preserve the character of the Kern River Valley communities by encouraging land uses and development densities that are consistent with small-town rural character.	**Consistent.** The proposed project would maintain agricultural land uses on the project site, consistent with existing KRVSP designations as listed in Table 3.12-1. The proposed project would not alter land uses in the Kern River Valley and would in turn, preserve the character of the communities in the Kern River Valley. The proposed project would maintain the current development densities in the area, which are currently consistent with the Kern River Valley's small-town rural character. Thus, the proposed project is consistent with this land use policy.
Chapter 4: Open Space and Recreation Element	
Open Space/Watershed Management	
Goal 4.1.1: Protect and maintain water and related natural systems for all existing and future reasonable and beneficial uses within the South Fork Kern and Upper Kern Watersheds.	**Consistent.** The proposed project would reduce diversions of the South Fork of the Kern River flow to the project site and retain natural flow in the South Fork of the Kern River downstream of the project site. As such, the proposed project would result in increased flow downstream of the project site, which would continue to support beneficial uses downstream, as further described in Section 3.11 Hydrology and Water Quality. Thus, the proposed project is consistent with this open space/watershed management goal.
Goal 4.1.2: Ensure future watershed management decisions incorporate all property owners including government agencies and private landowners.	**Consistent.** The property owners of the Onyx Ranch and Smith Ranch have been informed of the proposed project. Additionally, the RRBWSD as Lead Agency (per CEQA Guidelines Section 15052) informed relevant government agencies of the preparation of the EIR for the proposed project via a Notice of Preparation on February 22, 2018. Public input from government agencies and private landowners will continue to be solicited throughout the entire CEQA process. Thus, the proposed project is consistent with this open space/watershed management goal.

TABLE 3.12-2 (CONTINUED)
KERN RIVER VALLEY SPECIFIC PLAN CONSISTENCY ANALYSIS BY ELEMENT

Goal, Policy, or Implementation Measure	Determination of Consistency
Goal 4.1.3: Preserve open space areas as a visual and environmental resource, and to maintain the rural atmosphere of the Kern River Valley.	**Consistent.** The proposed project would not change the rural character of the project site or surrounding community in the South Fork Valley or the Kern River Valley. The proposed project does not involve construction of new facilities that would change the rural character of the project site. Operation of the proposed project would involve similar agricultural practices as currently used on the project site; therefore, the existing rural character of the area would be preserved. Thus, the proposed project is consistent with this open space/watershed management goal.
Policy 4.1.1: To the maximum extent possible, preserve existing wetlands and the hydrological systems that support them.	**Consistent.** The proposed project would reduce diversions of Kern River flow to the agricultural fields on the project site and retain natural flow in the South Fork of the Kern River downstream of the project site. As such, the proposed project would result in increased flow downstream of the project site, as further described in Section 3.11 Hydrology and Water Quality. None of the existing riparian pastures on the project site would be modified as a result of the proposed project. The proposed project would continue to support existing riparian and wetland areas in conservation areas downstream of the project site. Thus, the proposed project is consistent with this open space/watershed management policy. See Section 3.6 Biological Resources for an analysis of the potential impacts to wetlands.
Policy 4.1.4: Minimize the alteration of natural drainage areas. Require development plans to include necessary mitigation to stabilize runoff and silt deposition through utilization of grading and flood-protection ordinances and the NPDES permit.	**Consistent**. The proposed project does not include development that would alter natural drainage areas. The proposed project would allow natural flow to remain in the South Fork of the Kern River instead of being diverted to the project site. As such the drainage patterns of the South Fork of the Kern River would not be modified; river flows would be within the normal range that typically occur in the South Fork of the Kern River and the Lower Kern River. The proposed project would not result in significant erosion, siltation, onsite or offsite flooding, or impede or redirect flood flows in or along the river. Thus the proposed project is consistent with this open space/watershed management policy. The NPDES requirements are not applicable to the proposed project.
Policy 4.1.5: Areas along rivers and streams will be conserved to enhance drainage, flood control, recreational, and other beneficial uses while acknowledging existing land use patterns.	**Consistent.** The proposed project site includes cottonwood/willow riparian habitat and riparian pastures along the South Fork of the Kern River. While the proposed project would involve reduced diversion of water to the project site, none of the cottonwood/willow riparian habitat and the riparian pastures or tributaries to the South Fork of the Kern River would be modified as a result of the proposed project. Drainage patterns would not change. Thus the proposed project is consistent with this open space/watershed management policy.
Policy 4.1.6: All storm water drainage areas should be contained in natural drainage channels, and the grading of such channels and easements shall be kept to a minimum.	**Consistent.** The proposed project does not consist of any construction activities that would involve modification or grading of the South Fork of the Kern River channel or any agricultural ditches present on the project site. All stormwater drainage on the proposed project site would remain the same with project implementation. Thus, the proposed project is consistent with this open space/watershed management policy.
Policy 4.1.7: Promote conservation of stream buffers, forests, meadows, and other areas of watershed value.	**Consistent.** The proposed project proposes a transition from irrigated cropland and pastureland to non-irrigated pastures by planting drought-tolerant native vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle on the project site. Implementation of the proposed project would not create an impact to stream buffers, forests meadows, or other areas of watershed value within the South Fork Valley. All riparian habitat within the proposed project site would remain unaltered and would continue to retain its watershed value. Thus, the proposed project is consistent with this open space/watershed management policy.

TABLE 3.12-2 (CONTINUED)
KERN RIVER VALLEY SPECIFIC PLAN CONSISTENCY ANALYSIS BY ELEMENT

Goal, Policy, or Implementation Measure	Determination of Consistency
Natural Ecosystems	
Goal 4.2.1: Preserve and maintain natural ecosystems and vegetation communities that support wild plants and animals.	**Consistent.** The proposed project would result in the transition of irrigated cropland and pastureland to non-irrigated fields and pastures by planting drought-tolerant native vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle on the project site. The proposed project would not directly affect natural ecosystems or vegetation communities. The proposed project would allow natural flow to remain in the South Fork of the Kern River instead of being diverted to the project site. As such, the proposed project would not adversely affect natural ecosystems or vegetation communities downstream of the project site that support wild plants and animals. Thus, the proposed project is consistent with this natural ecosystem goal.
Goal 4.2.2: Support and promote the restoration and maintenance of native habitat and wildlife species indigenous to the Kern Valley ecosystem.	**Consistent.** As stated above in response to Goal 4.2.1, the proposed project proposes a transition from irrigated cropland and pastureland to non-irrigated fields and pastures by planting drought-tolerant native vegetation capable of surviving a natural precipitation regime. The proposed project also would allow natural flow to remain in the South Fork of the Kern River instead of being diverted to the project site. This would support native habitat and species indigenous to the Kern River Valley. Thus, the proposed project is consistent with this natural ecosystem goal.
Policy 4.2.1: Protect threatened and endangered plant and wildlife species in accordance with State and federal laws.	**Consistent.** As stated in Section 3.6, Biological Resources, the proposed project would be required to comply with all regulations required by the USFWS and CDFW to protect endangered species (including FESA, MBTA, CESA, CFGC). Mitigation Measures BIO-1 through BIO-4 would ensure potential significant impacts to threatened or endangered plant and wildlife species are mitigated to less than significant levels (see Section 3.6 Biological Resources). Thus, the proposed project is consistent with this natural ecosystem policy.
Chapter 5: Conservation Element	
Air Quality	
Goal 5.5.1: Protect and improve air quality in the Kern River Valley.	**Consistent.** The proposed project would be implemented in accordance with all Eastern Kern Air Pollution Control District (EKAPCD) rules and regulations as explained in Section 3.5 Air Quality. During the proposed projects' operation and maintenance, the estimated air quality emissions would not exceed the EKAPCD adopted air quality standards and when compared to existing emissions would result in less fugitive dust emissions. Thus, the proposed project is consistent with this air quality goal.
Policy 5.5.1: Cooperate with the Eastern Kern Air Pollution Control District to implement their Air Quality Attainment Plans and to meet federal and State standards. Kern County shall require dust control measures for roads as conditions of approval for subdivision maps and other discretionary actions. Policy 5.5.2: Continue to enforce the Kern County grading ordinance through the Kern County Engineering, Surveying and Permit Services Department, along with dust control and other rules and measures through the Eastern Kern Air Pollution Control District to mitigate air quality effects during the construction of new development. Policy 5.5.3: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the Eastern Kern Air Pollution Control District.	**Consistent.** The proposed project would be implemented in accordance with all EKAPCD rules and regulations as explained in Section 3.5 Air Quality, including Rule 402 for fugitive dust and Rule 402.2 for agricultural operations. During the proposed projects' operation and maintenance, the estimated air quality emissions would not exceed the EKAPCD adopted air quality standards and when compared to existing emissions would result in less fugitive dust emissions. Thus, the proposed project is consistent with these air quality policies.

TABLE 3.12-2 (CONTINUED)
KERN RIVER VALLEY SPECIFIC PLAN CONSISTENCY ANALYSIS BY ELEMENT

Goal, Policy, or Implementation Measure	Determination of Consistency
Policy 5.5.10: Create incentives for the use of domestic and commercial solar and wind energy uses to conserve fossil fuels and improve air quality.	**Consistent.** The proposed project would install up to 12 shallow, low-volume, solar-powered wells and reduce pumping at existing on-site electric powered groundwater wells. Thus, the proposed project is consistent with this air quality policy.
Solar and Wind Energy	
Goal 5.6.1: Promote use of solar and wind energy in Kern River Valley. Policy 5.6.1: Encourage the use of domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.	**Consistent.** The proposed project would install up to 12 shallow, low-volume, solar-powered wells and reduce pumping at existing on-site electric powered groundwater wells. Thus, the proposed project is consistent with this solar and wind energy goal and policy.
Scenic Resources	
Goal 5.1.1: Preserve and protect scenic resources.	**Consistent.** The proposed project would not change the rural character of the project site or surrounding communities in the South Fork Valley or the Kern River Valley. The proposed project does not involve any construction activities or development that would impact the rural character of the project site or surrounding communities. As explained in Section 3.3 Aesthetics, the proposed project would not cause the local scenic publically-accessible viewsheds of the South Fork Valley, the South Fork of the Kern River, or Kern River Valley to appear visually different than the existing conditions. The proposed project would preserve existing scenic resources. Thus, the proposed project is consistent with this scenic resource goal.
Policy 5.1.1: Preserve areas with scenic qualities and natural beauty. Policy 5.1.3: Work with federal, State, regional and other appropriate public agencies, non-profit organizations, and landowners to conserve, protect, and enhance natural resources in the Specific Plan Area.	**Consistent.** The proposed project would not change the rural character of the project site or surrounding communities in the South Fork Valley or the Kern River Valley. The proposed project does not involve construction of any aboveground facilities that would affect scenic qualities or natural beauty within the South Fork Valley. As a landowner, RRBWSD will maintain the leasing of the Onyx Ranch for grazing, which would protect the existing scenic natural resources within the South Fork Valley. Public input from government agencies and private landowners will continue to be solicited throughout the entire CEQA process. Thus, the proposed project is consistent with these scenic resource policies.
Agricultural and Ranching Resources	
Goal 5.2.1: Maintain the rural character of the Kern River Valley by protecting grazing and farmland. Policy 5.2.3: Develop community awareness and support of local agriculture and grazing operations. Implementation 5.2.2: Collaborate with State, federal, and local governmental agencies, and private entities as well as landowners to preserve agricultural land.	**Consistent.** Although the type and intensity of agricultural activity would change based on reduced water application on the project site, the proposed agricultural and grazing practices would be similar to existing practices. The proposed project would not change the rural character of the project site or surrounding communities. The proposed project would continue to support existing local agriculture and grazing operations. As a landowner, the RRBWSD will maintain the leasing of the Onyx Ranch for grazing, which would protect the rural character of the South Fork Valley. Public input from government agencies and private landowners will continue to be solicited throughout the entire CEQA process. Thus, the proposed project is consistent with these agricultural and ranching resource goal, policy, and implementation measure.
Water Conservation	
Goal 5.3.1: Maintain a balance between water supply and water consumption.	**Consistent.** The proposed project would reduce diversion of the South Fork of the Kern River water historically used to irrigate cropland and pastureland on the project site. This would result in conversation of irrigated cropland and pastures on Onyx Ranch to non-irrigated fields and pastures, characterized by drought or-tolerant vegetation capable of surviving a natural precipitation regime that would serve as grazing land for cattle. The balance between water supply and consumption would be maintained with implementation of the proposed project. Thus the proposed project is consistent with this water conservation goal.

TABLE 3.12-2 (CONTINUED)
KERN RIVER VALLEY SPECIFIC PLAN CONSISTENCY ANALYSIS BY ELEMENT

Goal, Policy, or Implementation Measure	Determination of Consistency
Policy 5.3.3: Require water conservation, which may include landscaping with drought-tolerant plants, use of reclaimed water (gray water), and recycling of cooling system water, in all development.	**Consistent.** The proposed project would result in the transition of irrigated cropland and pastureland to non-irrigated fields and pastures by planting drought-tolerant native vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle on the project site. The proposed project would not involve construction or operation of facilities that would require any additional water relative to existing conditions. Thus, the proposed project is consistent with this water conservation policy.
Policy 5.3.7: Develop a regional approach to resolve water supply issues in the Kern River Valley.	**Consistent.** As stated above under Water Conservation Implementation Measure 5.3.1, the proposed project would maintain a balance between water supply and water consumption. As further discussed in Potential Impact HYDRO-2 in Section 3.11 Hydrology and Water Quality, the proposed project would result in a net increase in groundwater storage in the Kern River Valley Groundwater Basin. Although there would be seasonal localized fluctuations of the groundwater table, there would be no adverse effects to the ability of nearby wells, including those of the 13 community water systems in the South Fork Valley, to pump groundwater. The proposed project therefore would not significantly contribute to reductions in water supply in the Kern River Valley. Thus the proposed project is consistent with this water conservation policy.
Chapter 6: Public Safety Element	
Wildland Fire	
Goal 6.1.1: Protect structures from wildland fires through vegetation management. Goal 6.1.2: Ensure that infrastructure such as emergency water sources, road access, address displays, and other support systems are sufficient to protect residents against wildland fires. Policy 6.1.8: Property owners shall maintain minimum weed abatement or vegetation clearing around and within individual lots as specified by the Kern County Building Code addressing weeds (Chapter 8.46), which is administered by the Kern County Fire Department. Policy 6.1.9: Encourage the use of defensible space principles, including revegetation with less flammable species and the use of mulch to prevent erosion on bare soil. Implementation 6.1.6: Require that all roads in wildland fire areas are well marked and that homes have addresses prominently displayed. Implementation 6.1.11: The Kern County Fire Department shall continue to work with property owners to maintain minimum weed abatement or vegetation clearing around and within individual lots as specified by the Kern County Building Code addressing weeds (see Code 8.46).	**Consistent**. As explained in Potential Impact HAZ-3 in Section 3.10 Hazards and Hazardous Materials, the proposed transition from irrigated pasture and croplands to non-irrigated pasture and native vegetation would result in drier conditions and drier vegetation on the project site and would result in the potential to exacerbate wildfire risks on the project site. However, the proposed project would be required to comply the KRVSP Public Safety Element as well as other state wildfire regulations and the Kern County Fire Department Fire Hazard Reduction Program. In accordance with these regulations, the RRBWSD is currently required to and would continue to be required to, provide a minimum 10-foot fuel break along all property lines that lie within 100 feet of any structures on neighboring properties and remove any accumulation of combustible fuels that can be deemed a fire hazard. The Kern County Fire Department would continue to conduct inspections of the project site after June 1st of each calendar year to ensure that all required clearance guidelines in the Fire Hazard Reduction Program have occurred. In addition, off-road equipment used on the project site, such as farm and ranch mechanized equipment, would be required to have spark arresters to prevent igniting dry vegetation. With adherence to the adopted regulatory requirements that address fire hazard reduction, the proposed project would be consistent with these wildland fire goals, policies and implementation measures.
Flooding and Dam Inundation	
Goal 6.2.1: Prevent loss of life, reduce personal injuries and property damage, and minimize economic loss resulting from flood hazard, and dam inundation conditions.	**Consistent.** As explained in Section 3.11 Hydrology and Water Quality, there would be no significant increase in flooding or increase in the risk of flood hazards relative to the existing conditions with implementation of the proposed project. The volume of water stored in Isabella Reservoir would be continue to be managed consistent with the requirements of the Kern River Watermaster in accordance with the Isabella Reservoir Water Control Manual. The proposed project would not result in an increased risk of dam failure. Thus, the proposed project would be consistent with this flooding and dam inundation goal.

TABLE 3.12-2 (CONTINUED)
KERN RIVER VALLEY SPECIFIC PLAN CONSISTENCY ANALYSIS BY ELEMENT

Goal, Policy, or Implementation Measure	Determination of Consistency
Policy 6.2.2: Prohibit incompatible uses in primary floodway areas. Policy 6.2.3: Minimize the alteration of primary floodways, stream channels, and natural protective barriers that accommodate or channel floodwaters. Policy 6.2.6: Minimize the potential for damage from floods by protecting and restoring the natural water storage and conveyance functions of primary floodways giving preference wherever possible to nonstructural surface water management methods.	**Consistent.** The proposed project would leave natural flow in the South Fork of the Kern River. The proposed project would not alter the South Fork of the Kern River or implement any improvements in primary floodways or stream channels. As explained in Section 3.11 Hydrology and Water Quality in Potential Impact HYDRO-3, the small increase in surface flow in the South Fork of the Kern River would not change the existing occasional seasonal flooding that occurs on roads that cross the South Fork of the Kern River, such as Sierra Way and Fay Ranch Road. Thus, the proposed project would be consistent with these flooding policies.
Shallow Groundwater	
Goal 6.3.1: Ensure public health and safety risks associated with shallow groundwater have been minimized to the greatest extent possible as well as protect the groundwater quality. Policy 6.3.2: This Plan's Physical and Environmental Constraints Map shall provide the most up to date information on the location of shallow groundwater areas. Subsequent shallow groundwater studies performed by a qualified hydrologist shall be incorporated within this map.	**Consistent.** RRBWSD contracted with Thomas Harder & Co. to prepare the *Hydrogeological Evaluation of the Onyx Ranch Project* (July 2019), which is provided in Appendix E, Hydrogeological Technical Report, to this Draft EIR. The Hydrogeological Evaluation includes hydrographs that show how groundwater levels measured in monitoring wells located near the South Fork of the Kern River typically fluctuate between levels above land surface to 15 feet below land surface, and groundwater levels in wells located away from the South Fork of the Kern River typically fluctuate within a range of 10 to 20 feet. As described in Section 3.11 Hydrology and Water Quality, during high groundwater conditions, the proposed project would result in minor water level impacts of +2.9 to -15.6 feet, compared to normal seasonal fluctuations of 10 to 20 feet. The proposed project would not affect public health and safety risks associated with shallow groundwater. Thus, the proposed project is consistent with this shallow groundwater goal and policy.
Chapter 9: Public Facilities and Services Element	
Water Supply and Distribution	
Goal 9.2.1: Support affordable coordinated, comprehensive, and reliable water supply systems and facilities capable of meeting both normal and dry year water demands. Policy 9.2.1: Ensure that water purveyors provide sufficient water storage, treatment, and transmission facilities to meet the existing and projected water needs of the Kern River Valley, while emphasizing conservation goal.	**Consistent.** The proposed project would result in a net increase in groundwater storage in the Kern River Valley Groundwater Basin. Although there would be seasonal localized fluctuations of the groundwater table, there would be no adverse effects to the ability of nearby wells, including those of the 13 community water systems in the South Fork Valley, to pump groundwater. The proposed project therefore would support local water systems and support local water purveyors in the provision of existing and projected water supply needs in the Kern River Valley. Thus, the proposed project is consistent with these water supply and distribution policies.
Water Quality	
Goal 9.3.1: Protect and improve local groundwater quality. Policy 9.3.1: Ensure that water quality standards are met for existing and future users. Policy 9.3.3: Establish a coordinated effort to protect water quality by preventing further degradation of existing water resources and supply.	**Consistent.** The proposed project would reduce diversion of the South Fork of the Kern River water historically used to irrigate cropland and pastureland on the project site. As discussed in Potential Impact HYDRO-1 in Section 3.11 Hydrology and Water Quality, the proposed project would leave natural flow in the South Fork of the Kern River and would not affect water quality of the river. The proposed project would reduce irrigation return flow to groundwater beneath the project site, and therefore would not adversely affect groundwater quality. The proposed project would result in a net increase in groundwater storage in the Kern River Valley Groundwater Basin. Thus, the proposed project is consistent with these water quality goal and policies.

TABLE 3.12-2 (CONTINUED)
KERN RIVER VALLEY SPECIFIC PLAN CONSISTENCY ANALYSIS BY ELEMENT

Goal, Policy, or Implementation Measure	Determination of Consistency
Law Enforcement, Fire Protection and Emergency Response	
Goal 9.4.1: Provide adequate emergency and fire protection and law enforcement for the residents of Kern River Valley. Policy 9.4.1: Ensure that new development does not create a burden on adequate levels of law enforcement and fire protection services. Policy 9.4.2: The County will ensure adequate police and fire protection to all Kern River Valley residents.	**Consistent.** As described in Section 3.10 Hazards and Hazardous Materials, the proposed project would not include changes to adjacent roadways or other access points to the project site or create traffic that would impair any of the Kern County Fire Department's Kern County Emergency Operations Plan (EOP) operations or emergency access that would take place on the project site or in the surrounding area. The proposed project would have no impact to the emergency response or emergency evacuation plan as defined by the Kern County EOP. Thus, the proposed project is consistent with these goal and policies.
Chapter 11: Sustainability Element	
General Sustainability	
Goal 11.1.2: Encourage development to use alternative renewable energy sources and energy conservation and efficient measures.	**Consistent.** The proposed project would install up to 12 shallow, low-volume, solar-powered wells and reduce pumping at existing on-site electric powered groundwater wells. Thus, the proposed project is consistent with this general sustainability goal.
Goal 11.1.3: Encourage landscape design and maintenance and agricultural practices that reduce or eliminate the use of pesticides and herbicides, as well as conserving water. Policy 11.1.5: Promote organic agriculture in order to minimize use of chemical pesticides and herbicides and to encourage agri-tourism.	**Consistent.** The proposed project would conserve water by transitioning irrigated cropland and pastureland to non-irrigated fields and pastures by planting drought-tolerant native vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle on the project site. The proposed project would not involve construction or operation of facilities that would require any additional water relative to existing conditions. The proposed project would allow for current organic agriculture practices on Onyx Ranch to continue to be implemented. Thus, the proposed project is consistent with this general sustainability goal and policy.
Policy 11.1.4: Encourage the use of agricultural management practices that result in the efficient use of water resources. Policy 11.1.8: Encourage agricultural practices that require reduced water demand and utilize the most efficient irrigation practices.	**Consistent.** The proposed project would conserve water by transitioning irrigated cropland and pastureland to non-irrigated fields and pastures by planting drought-tolerant native vegetation capable of surviving a natural precipitation regime while also providing grazing forage for cattle on the project site. The proposed project would not involve construction or operation of facilities that would require any additional water relative to existing conditions. Thus, the proposed project is consistent with these general sustainability policies.

Source: Kern County, 2011b; ESA, 2020.

TABLE 3.12-3
KERN COUNTY GENERAL PLAN CONSISTENCY ANALYSIS BY ELEMENT

Goal, Policy, or Implementation Measure	Determination of Consistency
Land Use, Open Space, and Conservation Element	
Resource Provisions	
Goal 2. Protect areas of important mineral, petroleum, and agricultural resource potential for future use. Goal 3. Ensure the development of resource areas minimize effects on neighboring resource lands. Goal 5. Conserve prime agriculture lands from premature conversion. Policy 7. Areas designated for agricultural use, which include Class I and II and other enhanced agricultural soils with surface delivery water systems, should be protected from incompatible residential, commercial, and industrial subdivision and development activities.	**Consistent**. As explained in Section 3.4 Agriculture, with implementation of the proposed project, lands designated by the State Farmland Mapping and Monitoring Program as Prime Farmland and Unique Farmland on the Onyx Ranch would no longer be irrigated. However, the non-irrigated lands would be gradually converted to Grazing Land which is considered an agricultural use. Therefore, the proposed project would not result in the conversion of Prime Farmland or Unique Farmland to a non-agricultural use. In addition, with implementation of the proposed project, the surface water that would remain in the South Fork of the Kern River and be delivered to the RRBWSD service area where it would be used to support agricultural irrigation demand, including for lands designated as Prime Farmland and Unique Farmland. Thus, the proposed project would be consistent with these resource goals and policy.
Goal 6. Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment.	**Consistent.** The proposed project would install up to 12 shallow, low-volume, solar-powered wells and reduce pumping at existing on-site electric powered groundwater wells. Thus, the proposed project is consistent with this resource goal.
Policy 10. To encourage effective groundwater resource management for the long-term economic benefit of the County the following shall be considered: (a) Promote groundwater recharge activities in various zone districts. (d) Support the development of future sources of additional surface water and groundwater, including conjunctive use, recycled water, conservation, additional storage of surface water and groundwater and desalination.	**Consistent**. The proposed project would change the points of diversion and place of use for the water rights associated with the project site so that the water can be delivered in the RRBWSD service area on the San Joaquin Valley floor. The proposed project would result in a net increase in groundwater storage in the Kern River Valley Groundwater Basin. In addition, the proposed project would allow the RRBWSD to utilize the water rights associated with the Onyx Ranch and Smith Ranch to maximize groundwater replenishment in the Kern County Sub-basin within the RRBWSD service area and assist RRBWSD with meeting its sustainability goals under SGMA. Thus, the proposed project is consistent with this resource goal.
Policy 20. Areas along rivers and streams will be conserved where feasible to enhance drainage, flood control, recreational, and other beneficial uses while acknowledging existing land use patterns.	**Consistent.** The proposed project site includes cottonwood/willow riparian habitat and riparian pastures along the South Fork of the Kern River. While the proposed project would involve reduced diversion of water to the project site, none of the cottonwood/willow riparian habitat and the riparian pastures or tributaries to the South Fork of the Kern River would be modified as a result of the proposed project. Drainage patterns would not change. Thus the proposed project is consistent with this open space/watershed management policy.

TABLE 3.12-3 (CONTINUED)
KERN COUNTY GENERAL PLAN CONSISTENCY ANALYSIS BY ELEMENT

Goal, Policy, or Implementation Measure	Determination of Consistency
General Provisions – Air Quality	
Policy 19: In considering discretionary projects for which an Environmental Impact Report must be prepared pursuant to the California Environmental Quality Act, the appropriate decision making body, as part of its deliberations, will ensure that: (1) All feasible mitigation to reduce significant adverse air quality impacts have been adopted. (2) The benefits of the proposed project outweigh any unavoidable significant adverse effects on air quality found to exist after inclusion of all feasible mitigation. This finding shall be made in a statement of overriding considerations and shall be supported by factual evidence to the extent that such a statement is required pursuant to the California Environmental Quality Act. Policy 20: The County shall include fugitive dust control measures as a requirement for discretionary projects and as required by the adopted rules and regulations of the San Joaquin Valley Unified Air Pollution Control District and the Kern County Air Pollution Control District on ministerial permits. Policy 21: The County shall support air districts efforts to reduce PM10 and PM2.5 emissions.	**Consistent.** The proposed project would be implemented in accordance with all EKAPCD rules and regulations as explained in Section 3.5 Air Quality, including Rule 402 for fugitive dust and Rule 402.2 for agricultural operations. During the proposed projects' operation and maintenance, the estimated air quality emissions would not exceed the EKAPCD adopted air quality standards and when compared to existing emissions would result in less fugitive dust emissions. No mitigation measures are required. Thus, the proposed project is consistent with these air quality policies.
General Provisions – Archaeological, Paleontological, Cultural, and Historical Preservation	
Policy 25: The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors. Implementation Measure K. Coordinate with the California State University, Bakersfield's Archaeology Inventory Center. Implementation Measure L. The County shall address archaeological and historical resources for discretionary projects in accordance with the California Environmental Quality Act (CEQA). Implementation Measure M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.	**Consistent**. The proposed project would result in a continuation of agricultural practices currently in use on the project site, including cultivation of pastureland and cattle grazing. The proposed project would result in agriculture-related activities that would be consistent in nature and intensity to existing agricultural land management practices. While ground-disturbing activities would occur to implement non-irrigated fields and pastures as well as installation of shallow, low-volume, solar-powered wells, these activities would be consistent with historical practices in and around the project site. During well drilling, to mitigate potential impacts to historic, cultural, and paleontological resources, Mitigation Measures CUL-1, CUL-2, CUL-3, and GEO-1 would require location of wells in areas that are lacking such resources, as well as monitoring and testing during well construction (see Section 3.7 Cultural Resources and Section 3.8 Geology and Soils). As a result, there would be no significant impact to historic, cultural, or paleontological resources within the Kern River Valley. Thus, the proposed project is consistent with these policy and implementation measures.
Implementation Measure 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. Implementation Measure 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.	**Consistent.** As described in Section 3.14 Tribal Cultural Resources, the RRBWSD as the lead agency sent consultation notification letters via certified mail to Native American groups identified by the NAHC as having traditional and cultural affiliation with the geographic area of the project site (per PRC section 20180.3.1 and PRC section 21073). There are no known tribal cultural resources on the project site, and the project site is determined to have low cultural resources sensitivity. Therefore, no Native American monitoring is required during construction of the proposed shallow, low-volume wells. Thus, the proposed project is consistent with these implementation measures.

TABLE 3.12-3 (CONTINUED)
KERN COUNTY GENERAL PLAN CONSISTENCY ANALYSIS BY ELEMENT

Goal, Policy, or Implementation Measure	Determination of Consistency
General Provisions – Threatened and Endangered Species	
Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with State and federal laws. Policy 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.	**Consistent**. As stated in Section 3.6, Biological Resources, the proposed project would be required to comply with all regulations required by the USFWS and CDFW to protect endangered species (including FESA, MBTA, CESA, CFGC). Mitigation Measures BIO-1 through BIO-4 would ensure any threatened or endangered plant and wildlife species are fully protected by implementation of the proposed project (see Section 3.6 Biological Resources). Thus, the proposed project is consistent with these policies.
Policy 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.	**Consistent**. The proposed project does not include development that would alter natural drainage areas. The proposed project would allow natural flow to remain in the South Fork of the Kern River instead of being diverted to the project site. The proposed project site includes cottonwood/willow riparian habitat and riparian pastures along the South Fork of the Kern River. None of the cottonwood/willow riparian habitat and the riparian pastures or tributaries to the South Fork of the Kern River would be modified as a result of the proposed project. The proposed project would continue to support beneficial uses of the South Form of the Kern River. Thus the proposed project is consistent with this policy.
General Provisions – Surface Water and Groundwater	
Policy 34: Ensure that water quality standards are met for existing users and future development. Policy 39: Encourage the development of the County's groundwater supply to sustain and ensure water quality and quantity for existing users, planned growth, and maintenance of the natural environment.	**Consistent.** The proposed project would reduce diversion of the South Fork of the Kern River water historically used to irrigate cropland and pastureland on the project site. As discussed in Potential Impact HYDRO-1 in Section 3.11 Hydrology and Water Quality, the proposed project would leave natural flow in the South Fork of the Kern River and would not affect water quality of the river. The proposed project would reduce irrigation return flow to groundwater beneath the project site, and therefore would not adversely affect groundwater quality. The proposed project would result in a net increase in groundwater storage in the Kern River Valley Groundwater Basin. Thus, the proposed project is consistent with these policies.
Safety Element	
General Safety	
Goal 1: Minimize injuries and loss of life and reduce property damage. Goal 4: Create an awareness of the residents in Kern County through the dissemination of information about geologic, fire, and flood safety hazards. Policy 4.2, 1: That the County's program of identification, mapping, and evaluating the geologic, fire, flood safety hazard areas, and significant concentrations of hydrogen sulfide in oil field areas, presently under way by various County departments, be continued. Implementation Measure 4.2, F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by FEMA, shall be used as a source document for preparation of environmental documents pursuant to CEQA, evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats of public safety. Implementation Measure 4.5, C: Develop and maintain maps, at an appropriate scale, showing the location of all geologic hazards, including active faults, Alquist-Priolo Earthquake	**Consistent**. The proposed project would be required to comply the KRVSP Public Safety Element, Kern County General Plan Safety Element, the Kern County Fire Department Fire Hazard Reduction Program, as well as other state and local hazard reduction regulations such as the Kern County, California Multi-Hazard Mitigation Plan. In accordance with these regulations, the RRBWSD is currently required to and would continue to be required to, provide a minimum 10-foot fuel break along all property lines that lie within 100 feet of any structures on neighboring properties and remove any accumulation of combustible fuels that can be deemed a fire hazard. The Kern County Fire Department would continue to conduct inspections of the project site after June 1st of each calendar year to ensure that all required clearance guidelines in the Fire Hazard Reduction Program have occurred. In addition, off-road equipment used on the project site, such as farm and ranch mechanized equipment, would be required to have spark arresters to prevent igniting dry vegetation. With adherence to the adopted regulatory requirements that address fire hazard reduction, the proposed project would be consistent with these goals, policies and implementation measures. As explained in Section 3.11 Hydrology and Water Quality, there would be no significant increase in flooding or increase in the risk of flood hazards relative to the existing conditions with implementation of the proposed project. In addition, mapped geologic hazards have been used

TABLE 3.12-3 (CONTINUED)
KERN COUNTY GENERAL PLAN CONSISTENCY ANALYSIS BY ELEMENT

Goal, Policy, or Implementation Measure	Determination of Consistency
Fault Zones, 100-year flood hazard boundary, the extent of projected dam failure inundation and time arcs, depth of inundation, land subsidence, slope failure and earthquake induced landslides, high groundwater, and liquefaction potential.	to determine that the proposed project would not result in significant impacts related to active faults, ground shaking, dam failure inundation, slope failure, land subsidence, shallow groundwater or liquefaction. Thus, the proposed project is consistent with these goals, policies and implementation measures.
Hazardous Materials	
Implementation Measure A: Facilities used to manufacture, store, and use of hazardous materials shall comply with the Uniform Fire Code, with requirements for siting or design to prevent onsite hazards from affecting surrounding communities in the event of inundation.	**Consistent.** Currently, hazardous materials in use at the project site include fuels and oils, fertilizers, herbicides, and pesticides. The use of such materials would continue with implementation of the proposed project in compliance with all applicable regulations including the Uniform Fire Code. Thus, the proposed project would be consistent with this implementation measure.
Wildland and Urban Fire	
Policy 1: Require discretionary projects to assess impacts on emergency services and facilities. Policy 2: The County will encourage the promotion of fire prevention methods to reduce service protection costs and costs to taxpayers. Policy 4: Ensure that new development of properties have sufficient access for emergency vehicles and for the evacuation of residents. Policy 5: Require that all roads in wildland fire areas are well marked, and that homes have addresses prominently displayed. Policy 6: All discretionary projects shall comply with the adopted Fire Code and the requirements of the Fire Department. Implementation Measure A: Require that all development comply with the requirements of the Kern County Fire Department or other appropriate agency regarding access, fire flows, and fire protection facilities.	**Consistent**. As explained in Potential Impact HAZ-3 in Section 3.10 Hazards and Hazardous Materials, the proposed transition from irrigated pasture and croplands to non-irrigated pasture and native vegetation would result in drier conditions and drier vegetation on the project site and would result in the potential to exacerbate wildfire risks on the project site. However, the proposed project would be required to comply the KRVSP Public Safety Element as well as other state wildfire regulations and the Kern County Fire Department Fire Hazard Reduction Program. In accordance with these regulations, the RRBWSD is currently required to and would continue to be required to, provide a minimum 10-foot fuel break along all property lines that lie within 100 feet of any structures on neighboring properties and remove any accumulation of combustible fuels that can be deemed a fire hazard. The Kern County Fire Department would continue to conduct inspections of the project site after June 1st of each calendar year to ensure that all required clearance guidelines in the Fire Hazard Reduction Program have occurred. In addition, off-road equipment used on the project site, such as farm and ranch mechanized equipment, would be required to have spark arresters to prevent igniting dry vegetation. With adherence to the adopted regulatory requirements that address fire hazard reduction, the proposed project would be consistent with these wildland fire policies and implementation measures.
Emergency Plan	
Policy 1: Continue to maintain and update the Kern County Emergency Plan. Policy 2: Monitor, enforce, and update, as appropriate, all emergency plans as needs and as conditions change. Implementation Measure C: Require emergency plans to include procedures for traffic control and security of damaged areas.	**Consistent**. As described above for Wildland and Urban Fire and General Safety Goals, Policies, and Implementation Measures, the proposed project would be subject to and in compliance with all Kern County emergency plans. Thus, the proposed project would be in compliance with these policies and implementation measure.
Energy Element	
5.4.5 Policy 1: The County shall encourage domestic and commercial solar energy uses to conserve fossil fuel and improve air quality. 5.4.5 Policy 3: The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards.	**Consistent**. The proposed project would install up to 12 shallow, low-volume, solar-powered wells and reduce pumping at existing on-site electric powered groundwater wells. Thus, the proposed project is consistent with this energy policy.

SOURCE: Kern County, 2009; ESA, 2020.

As stated in Table 3.12-2 and Table 3.12-3, the proposed project would be consistent with the applicable land use goals, policies, and implementation measures included in the KRVSP and Kern County General Plan. The proposed project would continue to be consistent with the existing KRVSP land use designations and Kern County zoning designations for the proposed project site, as there would be no change to the existing use of the project site for agriculture and grazing. The proposed project would reduce the diversion of water from the South Fork of the Kern River and allow the surface water to flow downstream to the Isabella Reservoir. This would support existing beneficial uses and conservation lands downstream of the project site.

As stated in Table 3.12-2 and Table 3.12-3, mitigation measures are included in this Draft EIR that ensure the proposed project would be consistent with the KRVSP and Kern County General Plan. As described in Section 3.6 Biological Resources, Mitigation Measures BIO-1 through BIO-4 would be required to mitigate impacts to biological resources associated with the transition of currently irrigated fields and pastures to non-irrigated pastures and native vegetation. Potential impacts to habitat on the project site that could support special-status species, or to riparian or sensitive natural communities would be reduced to a less than significant level through implementation of Mitigation Measure BIO-1, which would require habitat monitoring and habitat compensation, if necessary. Potential impacts to tri-colored blackbird, alkali mariposa lily, and salt grass flats would be reduced to a less than significant level through implementation of Mitigation Measure BIO-2, BIO-3, and BIO-4, respectively, which would require species-specific surveys and habitat compensation, if necessary. As described in Section 3.8 Geology and Soils, Mitigation Measure GEO-1 would be required to mitigate potential impacts to paleontological resources during construction of the proposed shallow, low-volume solar wells if drilling depths reach older Alluvium that could be sensitive for such resources. With implementation of construction monitoring and testing of sensitive soils as described in Mitigation Measure GEO-1, impacts to paleontological resources would be less than significant with mitigation. As described in Section 3.7 Cultural Resources, Mitigation Measures CUL-1 and CUL-2 would require the siting of the proposed shallow, low-volume solar wells in areas that are lacking in archaeological and historic resources, and preparation and implementation of a Treatment Plan in the case of inadvertent discovery of archaeological resources. Mitigation Measure CUL-3 would ensure unanticipated discovery of human remains would be adequately protected according to generally accepted cultural or archaeological standards or practices. With implementation of these measures, impacts to cultural resources would be less than significant with mitigation.

With implementation of the applicable mitigation measures as described above, the proposed project would not conflict with applicable County land use plans, policies or regulations. Impacts would be less than significant with mitigation.

In addition to the KRVSP and Kern County General Plan, SGMA requires development and implementation of groundwater sustainability plans for purposes of mitigating an environmental impact to groundwater levels. The Kern Groundwater Authority's Groundwater Sustainability Plan includes sustainability goals for the RRBWSD Management Area and projects to be implemented to achieve the goals (Kern Groundwater Authority, 2019). The proposed project is included in the Kern Groundwater Authority's Groundwater Sustainability Plan, as one of many

projects and management actions that would support sustainability of groundwater levels, groundwater storage, groundwater quality, and land subsidence in the Kern County Sub-basin.

As stated above, with implementation of the proposed project, the RRBWSD would deliver water previously diverted to the project site to their surface recharge basins and channels within and near its service area west of the City of Bakersfield. As stated in Section 2.4 Project Objectives of this Draft EIR, the proposed project would allow the RRBWSD to utilize the water rights associated with the Onyx Ranch and Smith Ranch to maximize groundwater replenishment in the Kern County Sub-basin within the RRBWSD service area and assist the RRBWSD with meeting its sustainability goals under SGMA. One of the objectives of the proposed project is to reduce reliance on imported water from the Sacramento/San Joaquin Delta via the SWP, which has become unreliable due to environmental restrictions in the Delta. As discussed in Chapter 4 Growth Inducement of this Draft EIR, the RRBWSD has been receiving a reduced long-term average of approximately 60 percent of the contracted amount of SWP water. This reduction equals approximately 10,000 AFY. The approximately 2,000 to 12,000 AFY of water to be supplied by the proposed project would help replace the 10,000 AF of imported water, thereby augmenting the groundwater basin with a sustainable local supply to support agricultural irrigation. Therefore, implementation of the proposed project would be consistent with the RRBWSD's adopted Groundwater Sustainability Plan. Impacts would be less than significant.

Mitigation Measures

Implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, CUL-1, CUL-2, CUL-3, and GEO-1.

Significance Determination

Less than Significant Impact with Mitigation

Impact Summary

- The proposed project would be consistent with the applicable County land use plans, policies and regulations with implementation of mitigation measures for potential impacts to biological resources (BIO-1 through BIO-4), cultural resources (CUL-1, CUL-2, CUL-3) and paleontological resources (GEO-1). Impacts would be less than significant with mitigation.
- With implementation of the proposed project, the surface water diverted from the South Fork of the Kern River in the existing conditions would remain in the South Fork of the Kern River and be delivered to the RRBWSD service area where it would be used for groundwater recharge. The proposed project would be consistent with the RRBWSD's adopted Groundwater Sustainability Plan. Impacts would be less than significant.

Potential Cumulative Impacts

This section presents an analysis of the cumulative effects of the proposed project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively considerable impacts. As discussed above in Section 3.12.3 Impact Analysis and Mitigation

Measures, the proposed project would have a less than significant impact with mitigation measures relative to consistency with land use plans, policies, and regulations.

Cumulative projects are listed on Table 3-2 in Section 3.2 Cumulative Impacts; the locations are shown on Figure 3-1. The only cumulative projects that could have impacts to land use and that, combined with the proposed project, could result in cumulatively considerable impacts, are Cumulative Project A, Isabella Lake Dam Safety Modification Project, Cumulative Project C, Upper Taylor Meadow Gully Repair Project, and Cumulative Project D, Weldon Regional Water District. Project A, which is currently under construction, would bolster existing dam structure and facilities to ensure dam stability. Project C would involve repair of a meadow upstream of the proposed project site. Project D would consolidate five existing small community water purveyors in the community of Weldon into the proposed Weldon Regional Water District, and would include construction of some new water facilities such as pipelines, booster pump stations, and groundwater wells. All other projects are located too far away and outside of the KRVSP area to result in cumulatively considerable impacts.

As described above, implementation of the proposed project would be consistent with the KRVSP, existing land use designations on the project site, and existing land uses downstream of the project site. Implementation of Mitigation Measure BIO-1 through BIO-4 would ensure that impacts to special status species are reduced to a less than significant level per requirements of USFWS, CDFW, and USACE including FESA, MBTA, CESA, CFGC, and the CWA. Implementation of Mitigation Measures CUL-1, CUL-2, CUL-3, and GEO-1 would ensure impacts to unknown cultural and paleontological resources are reduced to a less than significant level. Cumulative Project A and Cumulative Project C would involve improvements (seismic and soil-related) that would essentially improve water flow within the South Fork of the Kern River, Isabella Reservoir, and the Lower Kern River. These cumulative projects would also be required to comply with all regulations required by the USFWS, CDFW, and USACE including FESA, MBTA, CESA, CFGC, and the CWA, and would be required to mitigate any potential impacts to cultural and paleontological resources similar to the proposed project. Cumulative Project D has been determined to have no impact to land use plans, policies or regulations (Tom Dodson & Associates, 2020). As such, when considered together with the cumulative projects, the proposed project would not result in cumulatively considerable impacts associated with land use.

Mitigation Measures

Implementation of Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, CUL-1, CUL-2, CUL-3, and GEO-1.

Significance Determination

Less than Significant Impact with Mitigation

Impact Summary

- The proposed project would be consistent with the applicable County land use plans, policies and regulations with implementation of mitigation measures for potential impacts to biological resources (BIO-1 through BIO-4), cultural resources (CUL-1, CUL-2, CUL-3) and paleontological resources (GEO-1). When considered together with cumulative projects, the proposed project would not result in cumulatively considerable impacts associated with land use.

3.12.4 References

Crooker, H.M, 1930. South Fork Kern River Investigation. California Division of Water Resources.

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Kern County, 2009. Kern County General Plan, Kern County Planning Department, 2009. Available at: https://kernplanning.com/planning/planning-documents/general-plans-elements/

Kern County, 2011a. Kern River Valley Specific Plan, Draft Environmental Impact Report, Kern County Planning and Community Development Department, January 2011.

Kern County, 2011b. Kern River Valley Specific Plan, Kern County Planning and Community Development Department, January 2011.

Tom Dodson & Associates, 2020. Initial Study for the Weldon Regional Water System Improvement Project. Prepared for the Kern County Local Agency Formation Commission, March 2020.

3.13 Population and Employment

This section addresses the potential impacts to population and employment associated with implementation of the proposed project. This section includes: a description of the existing population and employment conditions within Kern County and specifically in the Kern River Valley where the project site is located; a summary of applicable regulations related to population and employment; and an evaluation of the potential for the proposed project to affect population and employment and subsequently result in secondary environmental impacts. In addition, an evaluation of the potential cumulative impacts of the proposed project is provided.

The Notice of Preparation (NOP) and Initial Study determined that the proposed project would have no impact related to population and housing for the following issues:

- Inducement of substantial population growth in an area, either directly (for example by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).
- Displacement of substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.
- Displacement of substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Therefore, these issues are not discussed further in this Draft EIR (see Section 3.1 Format of the Environmental Impact Analysis and Appendix A, Public Participation Process, for additional information).

However, in considering public comments received on the NOP and Initial Study (see Appendix A, Public Participation Process), the following topic has been added to the scope of the Draft EIR. This section evaluates if the proposed project would:

- Have a substantial effect on employment within the project site and surroundings, either directly (for example, through the elimination or addition of a land use or land use characteristic that provides employment) or indirectly (for example, through a change in resources that could eliminate employment opportunities in the agriculture, recreation, or tourist sectors associated with the Kern River Valley, Isabella Reservoir, or the Kern River), that subsequently results in secondary environmental impacts.

3.13.1 Environmental Setting

Regional

Kern County Existing and Projected Population

Kern County ranks as the eleventh most populated of the 58 counties in California. The California Department of Finance (DOF) estimates that 916,464 persons are living in the 8,200-square mile County of Kern as of January 2019; previous to the 2019 count, DOF estimated a County population of 906,563 in January 2018 and a County population of 886,695 in January 2016

(DOF, 2019a; DOF, 2019b). These estimates amount to a 1.1 percent growth rate over a 1-year period and a 3.4 percent growth rate over a 3-year period (2016 to 2019).

According to the Kern Council of Governments' (Kern COG's) 2018 Regional Transportation Plan (2018 RTP), the population in Kern County increased by an average of 17,800 people per year from 2000 to 2010. This growth occurred despite 3 years of recession within the same time period. From July 2010 to July 2017, Kern County has averaged a growth of 8,200 people per year. The highest annual population increase in this period was 10,900 people in 2016 to 2017; the lowest annual increase was 4,400 people in 2015 to 2016 (Kern COG, 2018, pages 3-1 and 3-2).

Kern COG prepared a 2015 Regional Growth Forecast (2015 Kern COG Forecast) that was adopted into Kern COG's 2018 RTP. The 2015 Kern COG Forecast included a population forecast for the years 2015 through 2050, which is summarized in Table 3.13-1.

TABLE 3.13-1
POPULATION FORECAST SUMMARY FOR KERN COUNTY (2015-2050)

Year	Population Forecast
2015	874,000[1]
2020	978,000
2025	1,084,000
2030	1,192,000
2035	1,302,000
2040	1,413,000
2045	1,526,000
2050	1,641,000
2015 – 2050	
Net Increase	767,000
Annual Growth Rate	1.8%

NOTE:
[1] U.S. Census Bureau estimates that the total population in Kern County was 879,607 in 2015.
SOURCE: Kern COG, 2015.

The 2015 Kern COG Forecast projects that population growth in Kern County would average approximately 21,400 people per year from 2015 to 2035 and about 21,900 people per year from 2015 to 2050. These estimates amount to an approximate 1.8 percent annual growth rate for the years 2015 to 2050 and would result in a County population of 1,641,000 people by 2050 (Kern COG, 2015, page vi).

Kern County Existing and Projected Employment

Employment data in this section represents the number of full-time and part-time jobs in Kern County, regardless of whether the employee lives in the County or commutes from somewhere else. The California Employment Development Department (EDD) estimates that as of April

2019, Kern County's labor force includes 385,900 persons and that 32,400 persons are without employment. This amounts to an approximate 8.4 percent unemployment rate for the County in April 2019 (EDD, 2019a). The 8.4 percent unemployment rate is: down from 8.6 percent in April 2018 (EDD, 2019b); up from an 8.0 percent annual average unemployment rate in 2018 (EDD, 2019c); down from a 9.2 percent annual average unemployment rate in 2017, and down from a 10.4 percent annual average unemployment rate in 2014 (EDD, 2018). The 8.4 percent unemployment rate in April 2018 compares to a 3.9 percent unemployment rate for the State of California and a 3.6 percent unemployment rate nation-wide during the same period (Bureau of Labor Statistics, 2019).

A summary of the total employment forecast included in the 2015 Kern COG Forecast is summarized in Table 3.13-2. Employment estimates for the years preceding the 2015 Kern COG's Forecast have been included in Table 3.13-2 to define employment growth trends and allow for comparison of past employment growth with anticipated employment growth for the County. Employment data for 2010 reflects a recession-influenced low, which may have reduced the annual growth rate in the past decade (Kern COG, 2018).

TABLE 3.13-2
TOTAL EMPLOYMENT FORECAST SUMMARY FOR KERN COUNTY (2000 TO 2050)

Year	Employment (Number of Jobs)
2000	244,000
2010	274,000
2014	318,000
2035	433,000
2050	540,000
2000 – 2014	
Net Total Increase	74,000
Annual Growth Rate	1.9%
2014 – 2035	
Net Total Increase	115,000
Average Annual Increase	5,480
Annual Growth Rate	1.5%
2014 – 2050	
Net Total Increase	222,000
Average Annual Increase	6,170
Annual Growth Rate	1.5%
2000 – 2050	
Net Total Increase	296,000
Average Annual Increase	5,920
Annual Growth Rate	1.6%

SOURCE: Kern COG, 2015.

From the years 2000 to 2014, Kern County experienced an average employment growth of 5,200 jobs per year. The forecast estimates that employment would increase by 5,480 jobs per year from 2014 to 2035 and increase by 6,170 jobs per year from 2014 to 2050; this amounts to an expected 1.5 percent average annual growth rate in Kern County during both time periods (Kern COG, 2015, page vii).

According to the 2018 RTP, growth in Kern County is primarily driven by employment in the oil sector and a new renewable energy sector with growth supplemented by jobs in value-added agriculture (defined as the transformation of agricultural products to a higher value for the end customer), aerospace/defense, energy/natural resources, transportation logistics/manufacturing, and health care. The San Joaquin Valley portion of Kern County produces over 75 percent of California's in-state oil and 58 percent of the State's total natural gas. In 2016, value-added agriculture, supported by alternative fuel production, made Kern County the largest agricultural producing county in the nation. Additionally, as one of the top oil producing counties in the United States, the high-wage oil industry accounts for 4 percent of the County's employment (Kern COG, 2018, pages 3-1 and 3-2). A summary of employment trends and forecasts for each of the major economic sectors that drive employment in Kern County are shown in Table 3.13-3.

TABLE 3.13-3
EMPLOYMENT TRENDS AND FORECASTS IN KERN COUNTY BY MAJOR ECONOMIC SECTOR

Year	Employment	Change (Annual Rate of Change) 1990 to 2014	Year	Employment	Change (Annual Rate of Change) 2015 to 2050
Farming/Agriculture					
1990	29,500	31,200 (3.2%)	2015	61,300	27,300 (1.1%)
2014	60,700		2050	88,600	
Mining, Logging, and Oil and Gas Exploration and Extraction					
1990	11,900	1,200 (0.4%)	2015	13,200	3,100 (0.6%)
2014	13,100		2050	16,300	
Construction					
1990	12,000	6,200 (1.8%)	2015	18,500	15,500 (1.8%)
2014	18,200		2050	34,100	
Manufacturing					
1990	9,800	5,000 (1.8%)	2015	15,000	11,300 (1.6%)
2014	14,800		2050	26,300	
Wholesale Trade					
1990	6,300	3,100 (1.8%)	2015	10,000	11,200 (2.2%)
2014	9,400		2050	21,200	
Transportation and Warehousing, and Utilities					
1990	5,500	4,300 (2.5%)	2015	10,000	11,200 (2.2%)
2014	9,800		2050	21,200	
Administration and Support, and Waste Management Remediation Services					
1990	7,000	4,800 (2.3%)	2015	12,000	12,500 (2.1%)
2014	11,800		2050	24,500	

TABLE 3.13-3 (CONTINUED)
EMPLOYMENT TRENDS AND FORECASTS IN KERN COUNTY BY MAJOR ECONOMIC SECTOR

Year	Employment	Change (Annual Rate of Change) 1990 to 2014	Year	Employment	Change (Annual Rate of Change) 2015 to 2050
Information					
1990	3,400	-1,000 (-1.5%)	2015	2,400	800 (0.8%)
2014	2,400		2050	3,200	
Finance and Insurance					
1990	5,100	400 (0.4%)	2015	5,500	1,500 (0.7%)
2014	5,500		2050	7,000	
Professional, Scientific and Technical Services					
1990	6,900	4,000 (2.0%)	2015	11,100	11,200 (2.0%)
2014	10,900		2050	22,300	
Management of Companies and Enterprises					
1990	3,000	0 (0.0%)	2015	3,100	2,500 (1.7%)
2014	3,000		2050	5,500	
Educational Services					
1990	18,400	14,300 (2.5%)	2015	33,100	16,400 (1.2%)
2014	32,700		2050	49,500	
Health Care and Social Assistance					
1990	12,300	18,900 (4.1%)	2015	31,900	39,100 (2.3%)
2014	31,200		2050	71,000	
Real Estate and Rental & Leasing					
1990	1,600	1,600 (3.1%)	2015	3,200	2,200 (1.5%)
2014	3,200		2050	5,400	
Arts, Entertainment and Recreation					
1990	1,400	1,100 (2.6%)	2015	2,500	2,000 (1.6%)
2014	2,500		2050	4,500	
Accommodation and Food Services					
1990	11,700	9,900 (2.7%)	2015	22,000	16,800 (1.6%)
2014	21,600		2050	38,800	
Other Services					
1990	5,100	2,800 (1.9%)	2015	8,000	15,800 (1.2%)
2014	7,900		2050	11,800	
Government					
1990	26,900	4,700 (0.7%)	2015	32,000	15,800 (1.2%)
2014	31,600		2050	47,800	

SOURCE: Kern COG, 2015.

Local

The population and employment trends and forecasts above provide information about the existing conditions in Kern County. However, the following discussion of the existing and future population and employment trends for the Kern River Valley provides the environmental setting for the analysis of impacts to agriculture-related and recreation-related employment as a result of the proposed project.

As shown in Figure 2-2 in Chapter 2 Project Description of this Draft EIR, the project site is located within the Kern River Valley in an unincorporated area of the County. The majority of the project site is within the Kern River Valley Specific Plan (KRVSP) area. The small portion of the project site outside of the KRVSP area (in the northern portion of Smith Ranch) is in an unincorporated area of the County (see Figure 3.12-1 in Section 3.12 Land Use of this Draft EIR). Since this portion of the project site not within the KRVSP area is relatively small and sparsely populated, the U.S. Census data for the majority of the project site within the KRVSP area is used to describe the local population and employment for the entire project site.

Kern River Valley Existing and Projected Population

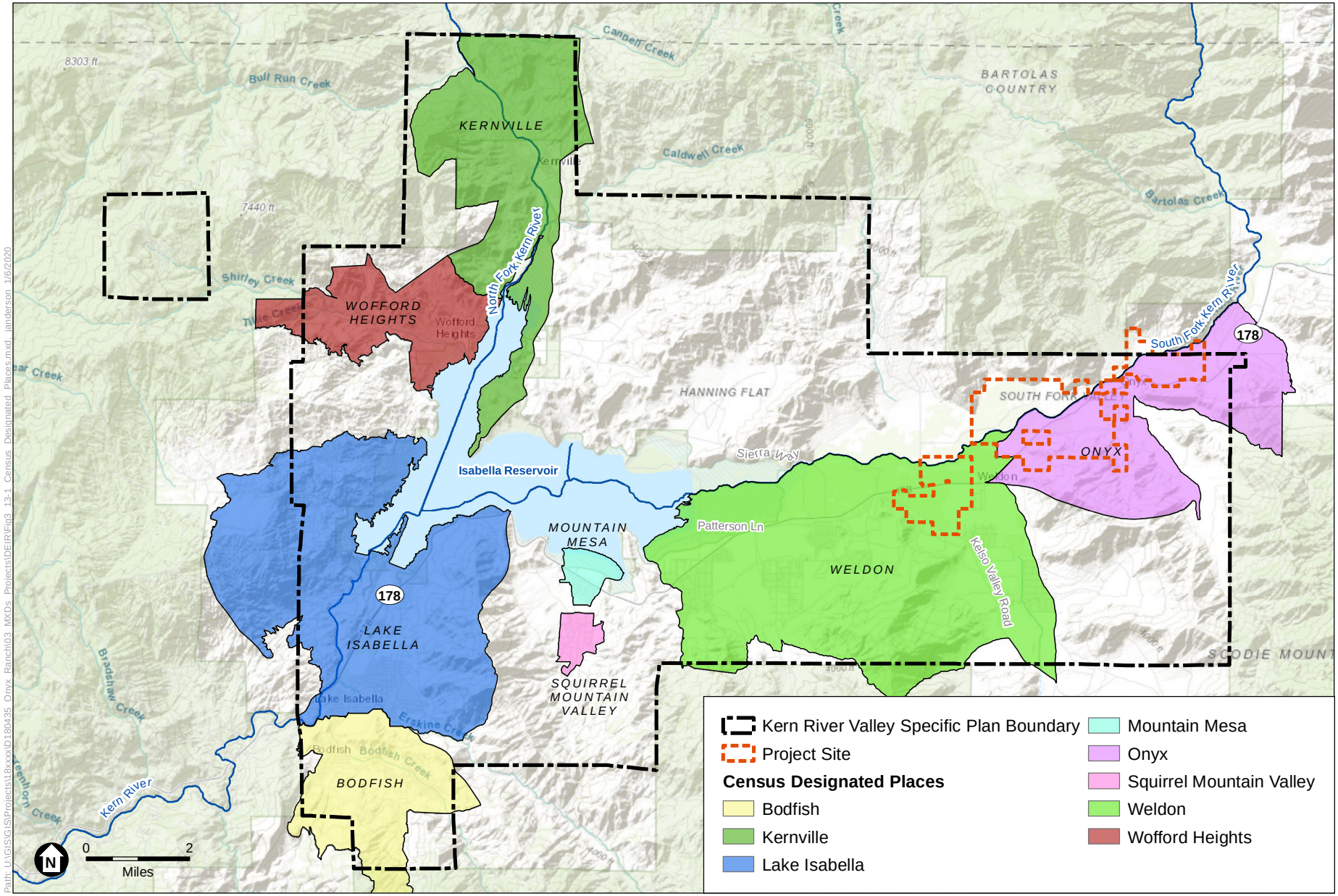
The Kern River Valley includes eight separate Census Designated Places (CDPs): Kernville, Wofford Heights, Lake Isabella, Bodfish, Mountain Mesa, Squirrel Mountain Valley, Weldon (includes South Lake and Kelso Valley), and Onyx. The locations of these CDPs are provided in Figure 3.13-1. A CDP is a geographic area comprising a densely settled concentration of population that is not within an incorporated place, but is locally identifiable by name. It is a place that is treated similar to a city or municipality by the U.S. Census for the purpose of counting population because it resembles a city in population density and structure. However, a CDP has no separate town rights or a council representation.

The remainder of the Kern River Valley includes other unincorporated County areas that are sparsely populated. The U.S. Census Bureau delineates this geographic region as the Lake Isabella Census County Division (CCD); the CCD boundaries are shown in Figure 3.13-2. The Lake Isabella CCD includes all eight CDPs listed above and accounts for almost all of the Kern River Valley population; therefore, the demographic analysis for the Kern River Valley in this section will be based on the Lake Isabella CCD demographic information from the 2000 and 2010 Census. Official U.S. Census data is published only once every decade as mandated in Article 1, Section 2 of the Constitution. Since research for the upcoming 2020 Census is still in progress, the 2000 and 2010 Census counts represent the best, most recent data and were used to capture population trends in the Kern River Valley (characterized by the Lake Isabella CCD), Kern County, and the State of California. These population counts are included in Table 3.13-4.

TABLE 3.13-4
POPULATION IN THE KERN RIVER VALLEY, COUNTY, AND STATE FOR THE YEARS 2000 - 2010

U.S. Census Bureau Geographic Region	Population		
	2000	2010	% Change
Kern River Valley (Lake Isabella CCD)	15,561	16,234	4.3%
Kern County	661,645	839,631	26.9%
California	33,871,648	37,253,956	10%

SOURCES: U.S. Census, 2000a; U.S. Census, 2000b; U.S. Census, 2010a; U.S. Census, 2010b.



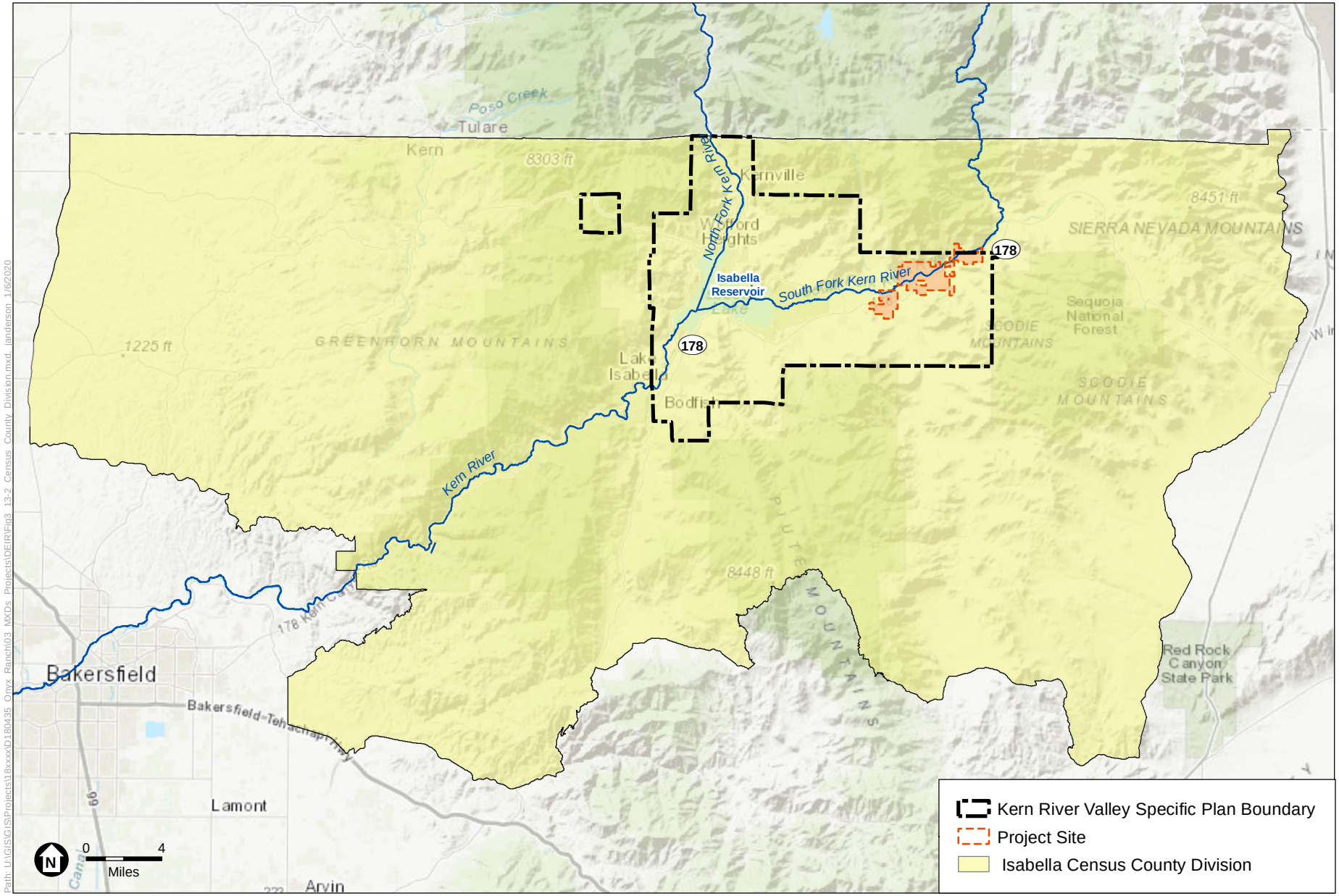
SOURCE: ESRI; Kern County

Onyx Ranch South Fork Valley Water Project

Figure 3.13-1

Census Designated Places

ESA



Path: U:\GIS\G1S\Projects\18xxxx\D180435_Onyx_Ranch\03_MXDs_Projects\DEIR\Fig3_13-2_Census_County_Division.mxd, janderson, 1/6/2020

SOURCE: ESRI; Kern County

Onyx Ranch South Fork Valley Water Project

Figure 3.13-2

Isabella Census County Division

ESA

According to the 2010 Census, the Kern River Valley increased in population by 4.3 percent between the years 2000 and 2010 (with 15,561 persons in the year 2000 compared to 16,234 persons in the year 2010). In comparison, the population of Kern County increased by 26.9 percent and the statewide population increased by 10 percent during the same period.

Table 3.13-5 includes population projections in the Kern River Valley up to year 2030. Kern COG projects that the population in the Kern River Valley will increase to 17,637 persons with 4,095 employment opportunities in 2020 and 19,625 persons with 5,208 employment opportunities by the year 2030 (Kern County, 2011a, page 4.12-7). This reflects an 11.3 percent increase in population in the Kern River Valley from years 2020 to 2030, while there is a projected 21.9 percent increase in population for Kern County during the same decade (Kern COG, 2015, page 15). Additionally, this reflects a 27 percent increase in employment opportunities in the Kern River Valley from years 2020 to 2030, while there is a projected 15.8 percent increase in employment for Kern County during the same decade (Kern COG, 2015, page 17).

TABLE 3.13-5
POPULATION AND EMPLOYMENT PROJECTIONS IN THE KERN RIVER VALLEY FOR THE YEARS 2020-2030

Kern River Valley	2020	2025	2030
Population	17,637	18,448	19,625
Employment	4,095	4,660	5,208

SOURCE: Population and Employment Projections, Kern COG, 2009 as cited in Kern County, 2011a.

Kern River Valley Existing and Projected Employment

The 2017 American Community Survey's (ACS's) 5-year estimates for employment characteristics in the Kern River Valley are included in Table 3.13-6. The estimates of industry distribution in the Kern River Valley (for all 8 CDPs) and the project site (the Onyx and Weldon CDPs only) are included in Table 3.13-7.

TABLE 3.13-6
EMPLOYMENT CHARACTERISTICS ESTIMATES FOR THE KERN RIVER VALLEY AND KERN COUNTY FOR THE YEAR 2017

Census Designated Place (CDP)	Population (16 Years and Older)	Civilian Labor Force[1]	Employed Population[2]
Kernville	1,049	571	571
Wofford Heights	1,606	538	518
Lake Isabella	3,816	1,550	1,346
Bodfish	1,273	434	344
Mountain Mesa	622	116	98
Squirrel Mountain Valley	1,076	319	290
Weldon	2,010	890	797
Onyx	540	144	144
Lake Isabella CCD Total[3]	13,720	5,316	4,783
Kern County	648,709	376,770	335,688

NOTES:

[1] All non-institutionalized civilians who are either employed or unemployed.

[2] Employed includes all civilians 16 years old and over who were either (1) "at work" -- those who did any work at all during the reference week as paid employees, worked in their own business or profession, worked on their own farm, or worked 15 hours or more as unpaid workers on a family farm or in a family business; or (2) were "with a job but not at work."

[3] Includes estimates for 8 CDPs listed above and unincorporated county areas.

SOURCE: American Community Survey, 2017.

TABLE 3.13-7
KERN RIVER VALLEY INDUSTRY INFORMATION FOR THE YEAR 2017
(EMPLOYED CIVILIAN POPULATION 16 YEARS AND OVER)

Industry	No. of Residents	Percentage of Residents
Kern River Valley		
Agriculture, forestry, fishing and hunting, and mining	231	4.8%
Construction	361	7.5%
Manufacturing	107	2.2%
Wholesale Trade	105	2.2%
Retail trade	737	15.4%
Transportation and warehousing, and utilities	141	2.9%
Information	81	1.7%
Finance and insurance, and real estate and rental and leasing	197	4.1%
Professional, scientific, and management, and administrative and waste management services	545	11.4%
Educational services, and health care and social assistance	1,169	24.4%
Arts, entertainment, and recreation, and accommodation and food services	553	11.6%
Other services, except public administration	283	5.9%
Public administration	273	5.7%
Kern River Valley Total	**4,783**	**100%**
Onyx CDP		
Construction	48	33.3%
Wholesale Trade	29	20.1%
Educational services, and health care and social assistance	51	35.4%
Arts, entertainment, and recreation, and accommodation and food services	16	11.1%
Onyx CDP Total	**144**	**100%**
Weldon CDP		
Agriculture, forestry, fishing and hunting, and mining	23	2.9%
Construction	30	3.8%
Wholesale Trade	25	3.1%
Retail trade	201	25.2%
Finance and insurance, and real estate and rental and leasing	53	6.6%
Professional, scientific, and management, and administrative and waste management services	99	12.4%
Educational services, and health care and social assistance	160	20.1%
Arts, entertainment, and recreation, and accommodation and food services	90	11.3%
Other services, except public administration	99	12.4%
Public administration	17	2.1%
Weldon CDP Total	**797**	**100%**

SOURCE: American Community Survey, 2017.

Employment data presented in this section use defined terminology from the ACS to characterize existing employment settings in the KRVSP.[1] A key distinction in the data is that employment rates listed for each CDP do not indicate the number of persons employed as a percentage of the entire working-age (16 years old and over) population; but rather, they reflect the number of persons employed as a percentage of the ACS-defined labor force. Employment data in this section, therefore, exclude the many retirees (see "Not in Labor Force" definition) that live in the Kern River Valley, and present a focused summary of people who work or are seeking work in the Kern River Valley. However, Table 3.13-6 includes total 16 years old and over population estimates, which account for retirees and others that are excluded in the ACS-defined labor force/employment rate estimates. Therefore, employment as a percentage of the entire working-age population can be deduced for each CDP if needed.

According to the ACS, in the Kern River Valley, 4,783 persons of its 5,316-person civilian labor force are employed. This amounts to a 90 percent employment rate. Of the 4,783 Kern River Valley employees, 231 (4.8 percent) work in the agriculture, forestry, fishing and hunting, and mining industries; and 553 (11.6 percent) work in the arts, entertainment, and recreation, and accommodation and food services industries. The dominant occupation types in the Kern River Valley are management, business, science, and arts jobs (33.2 percent); sales and office jobs (23.5 percent); and service jobs (21.7 percent).

In addition, according to the ACS, the entire 144-person civilian labor force in the community of Onyx is employed, contributing to a 100 percent employment rate in the CDP. Of the 144 people who work in Onyx, 16 (11.1 percent) work in the arts, entertainment, recreation, accommodation and food services industries. The dominant occupation types in the community of Onyx are jobs in management, business, science, and arts (35.4 percent) and those in natural resources, construction, and maintenance (33.3 percent).

Of the 890-person civilian labor force that lives in the community of Weldon, 797 are employed, contributing to a 93 percent employment rate in the CDP. Of the 890 Weldon employees, 23 (2.9 percent) work in the agriculture, forestry, fishing and hunting, and mining industries and 90 (11.3

[1] "Employed" –all civilians 16 years old and over who either (1) were "at work," that is, those who did any work at all during the ACS reference week as paid employees, worked in their own business or profession, worked on their own farm, or worked 15 hours or more as unpaid workers on a family farm or in a family business; or (2) were "with a job but not at work," that is, those who did not work during the reference week but had jobs or businesses from which they were temporarily absent due to illness, bad weather, industrial dispute, vacation, or other personal reasons. Excluded from the employed are people whose only activity consisted of work around the house or unpaid volunteer work for religious, charitable, and similar organizations; also excluded are all institutionalized people and people on active duty in the United States Armed Forces.

"Unemployed" – All civilians 16 years old and over are classified as unemployed if they (1) were neither "at work" nor "with a job but not at work" during the reference week, and (2) were actively looking for work during the last 4 weeks, and (3) were available to start a job. Also included as unemployed are civilians who did not work at all during the reference week, 67 were waiting to be called back to a job from which they had been laid off, and were available for work except for temporary illness.

"Employment Rate" – the number of employed people as a percentage of the civilian labor force.

"Labor Force" – Consists of people classified as employed or unemployed in accordance with the criteria described above, except members of the U.S. Armed Forces.

"Not in Labor Force" – All people 16 years old and over who are not classified as members of the labor force. This category consists mainly of students, homemakers, retired workers, seasonal workers interviewed in an off season who were not looking for work, institutionalized people, and people doing only incidental unpaid family work (less than 15 hours during the reference week).

percent) work in the arts, entertainment, and recreation, and accommodation and food services industries. The dominant occupation types in Weldon are service jobs (45.9 percent) and management, business, science, and arts jobs (20.7 percent).

Table 3.13-5 provides employment projections for the Kern River Valley from Kern COG. Kern COG projects that the employment in the Kern River Valley will increase to 5,208 persons by the year 2030 (Kern County, 2011a, page 4.12-7). This amounts to a 13.8 percent increase in employment from years 2020 to 2030, and compares to projected 15.9 percent employment increase for Kern County during the same decade. No projections for specific CDPs, such as Onyx and Weldon, have been forecasted.

Cumulative Setting

As discussed in this Draft EIR in Section 3.2 Cumulative Impacts Methodology, the geographic area addressed in the analysis of cumulative impacts varies depending on the environmental topic being analyzed. The geographic area for the analysis of the potential cumulative impacts of the proposed project related to population and employment is limited to the Kern River Valley as described above. This is because impacts relative to population and employment are assessed from an area broader than the project site. For example, the effect of a loss in population or employment numbers may be felt within the Kern River Valley, where residents or employees travel between home and their place of employment within that area.

3.13.2 Regulatory Framework

State of California

State law requires each City and County to adopt a General Plan for future growth. The plan must include a housing element that identifies housing needs for all economic segments and provides opportunities for housing development to meet that need. At the State level, the California Department of Housing and Community Development (HCD) estimates the relative share of California's projected population growth that would occur in each county based on Department of Finance (DOF) population projections and historic growth trends. Where there is a regional council of governments, HCD provides the regional housing need information to the council. In Kern County, this would be provided to Kern COG. The Kern COG then assigns a share of the regional housing need to each of the Cities and the County. The process of assigning shares provides Cities and Counties the opportunity to comment on the proposed allocations. HCD oversees the process to ensure that the Kern COG distributes each City's and the County's share of the State's projected housing needs.

Each City and County in California must update its General Plan Housing Element on a regular basis (generally every 5 years). Among other requirements, the Housing Element must incorporate policies and identify potential sites that would accommodate the jurisdiction's share of the regional housing need. Before adopting an update, the City or County must submit the draft Housing Element to the HCD for review. The HCD will advise the local jurisdiction whether its Housing Element complies with the provisions of California Housing Element Law.

Local

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, policies, and implementation measures of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the KRVSP area, which was addressed in the KRVSP adopted by Kern County in 2011. The 2030 KRVSP planning horizon reflects and responds to the regional population, employment, and housing projections for the area developed by Kern COG, and ensures rational, managed development of the Kern River Valley area (Kern County, 2011b). The KRVSP consists of elements that include goals, policies, and implementation measures related to the planning, growth, population and employment, agriculture, open space, and natural resources within the Kern River Valley. The applicable element and its goal is as follows:

Economic Development Element

The Economic Development Element focuses on promoting small business and tourism enterprises for the Kern River Valley area. The Element identifies goals, policies, and implementation measures to encourage businesses that enhance the economy while maintaining unique values to the Kern River Valley area. The applicable goal and policy are as follows:

> **Goal 8.1.1:** Encourage and facilitate a wide range of business activities that enhance the local economy while maintaining the rural atmosphere of the Kern River Valley.

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009). The Kern County General Plan helps to ensure that day-to-day decisions conform with long-range policies designed to protect and further the public interest related to the County's growth and development.

3.13.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to page 3.13-1 above for a summary of the environmental issues and significance criteria included in this Draft EIR for the analysis of population and employment. This Draft EIR assumes that implementation of the proposed project would have a significant impact related to population and employment if it would:

- Have a substantial effect on employment at the project site and surroundings, either directly (for example, through the elimination or addition of a land use or land use characteristic that provides employment) or indirectly (for example, through a change in resources that could eliminate employment opportunities in the agriculture, recreation, or tourist sectors associated

with the Kern River Valley, Isabella Reservoir, or the Kern River), that subsequently results in secondary environmental impacts.

Methodology

This environmental analysis of the potential impacts related to population and employment is based on the following information: the definition of the proposed project provided above in Chapter 2 Project Description; a review of public documents regarding population and employment; and the regulatory framework summarized above. The existing conditions of the proposed project site, as described above in Section 3.13.1, defines the baseline conditions for the impact analysis. The analysis of the potential effects of the proposed project on employment, and subsequently the physical environment, is discussed in the Impact Analysis provided below.

CEQA does not require an analysis of economic impacts of the proposed project. The basic purposes of CEQA are to: inform the public and decision makers about potential significant environmental effects of proposed activities; identify ways to avoid or reduce significant impacts; prevent significant damage to the environment through mitigation measure or alternatives; and to disclose to the public reasons why a project is approved if significant environmental impacts would result (CEQA Guidelines Section 15002). In other words, the intent of CEQA is to identify potential adverse impacts to the physical environment. As such, the Impact Analysis presented below identifies first whether the proposed project would affect employment within the Kern River Valley and then determines whether changes in employment would cause impacts to the physical environment. Such impacts are referred to as secondary environmental impacts.

Impact Analysis

Employment and Secondary Environmental Impacts

Potential Impact EMP-1: Would the proposed project have a substantial effect on employment at the project site and surroundings, either directly (for example, through the elimination or addition of a land use or land use characteristic that provides employment) or indirectly (for example, through a change in resources that could eliminate employment opportunities in the agriculture, recreation, or tourist sectors associated with the Kern River Valley, Isabella Reservoir, or the Kern River), that subsequently results in secondary environmental impacts?

The proposed project would involve changing the point of diversion and place of use for surface water currently used for irrigation on the project site located along the South Fork of the Kern River. This would result in: (1) the conversion of irrigated fields and pastures to non-irrigated pastures with native vegetation; and (2) the surface flows currently diverted to the project site remaining in the South Fork of the Kern River and flowing downstream to the Isabella Reservoir, through the Isabella Dam, and downstream in the Lower Kern River to the RRBWSD service area. The associated implications of these changes to the project site related to employment are described below.

Agriculture-Related Employment

The proposed project has the potential to directly impact employment on the Onyx Ranch and the Smith Ranch due to changes in agricultural activities that may occur as a result of the reduction in the amount of surface water diverted to the project site. The number of RRBWSD staff required to manage the Onyx Ranch and the Smith Ranch would not be anticipated to change. In addition, the number of non-RRBWSD employees on the Smith Ranch would not be anticipated to change. However, the RRBWSD currently leases land on the Onyx Ranch to lessees who employ up to 14 workers to implement agricultural operations on that portion of the project site. With implementation of the proposed project, approximately 882 acres of currently irrigated pastures would be converted to non-irrigated pastures and/or native vegetation and approximately 778 acres currently used for row crops would be converted to non-irrigated pastures and/or native vegetation (refer to Table 2-1 in Chapter 2 Project Description). As described in Chapter 2 Project Description, the transition from irrigated fields and pastures to non-irrigated pastures would be anticipated to take up to approximately 3 years. The non-irrigated pastures would be seeded with native, drought-tolerant species that would not require annual planting and harvesting. Once the transition is complete, operation of the proposed project would involve management of the non-irrigated pastures for grazing lands and native vegetation. Management activities would be less intensive for the drought-tolerant vegetation than for the existing row crops because the proposed project would not require annual replanting or harvesting. The management of livestock would be similar to existing operations on the project site and would include transporting cattle to new areas on-site for grazing when the forage material has been consumed; however, the 60 round trips currently used to transport cattle up to 75 miles to other off-site pasture would be reduced to 30 round trips. With the change in agricultural activities on the Onyx Ranch, the proposed project may result in up to two fewer employees than the existing conditions once the field transitions are completed. However, the Onyx Ranch lessees operate on multiple lands in the Kern River Valley and the operational workers employed by the lessees do not work exclusively on Onyx Ranch. As such, these operational workers may retain employment with the same lessee and there may be no loss of employment due to the proposed project.

As indicated in Table 3.13-7 above, according to the ACS, the industry category of “agriculture, forestry, fishing and mining” currently employs approximately 231 people, or 4.8 percent of the employed civilian population at/over the age of 16, in the Kern River Valley (American Community Survey, 2017). Within the community of Onyx, no residents were employed by this industry category and, in Weldon, 23 people, or 2.9 percent of the employed civilian population at/over the age of 16, were employed by “agriculture, forestry, fishing and mining.” The anticipated reduction of up to two employees on the Onyx Ranch may decrease total employment in the “agriculture, forestry, fishing and mining” industry category in the Kern River Valley from 231 to 229, or a reduction from approximately 4.8 percent to 4.7 percent of the employed civilian population at/over the age of 16, relative to the existing conditions. For the community of Weldon, the proposed project may decrease total employment in this industry category from 23 people to 21 people, or a reduction from approximately 2.9 percent to 2.6 percent of the employed civilian population at/over the age of 16, relative to the existing conditions. The potential reduction in employment as a result of the proposed project would not represent a substantial change to agriculture-related employment in the Kern River Valley. Therefore, no significant impact to agriculture-related employment would occur.

In addition, the potential reduction in employment on the Onyx Ranch would not cause any secondary environmental impacts, such as to traffic or air quality, since fewer employees may be traveling to the project site with the proposed project. As a result, with implementation of the proposed project, no significant impact to the physical environment would occur as a result of the potential changes in agriculture-related employment on the project site.

Recreation-Related Employment

The proposed project has the potential to indirectly impact recreation-related employment in the Kern River Valley due to changes in flow in the South Fork of the Kern River downstream of the project site. As shown in Table 3.13-7, according to the ACS, in the Kern River Valley, 563 people were employed in the "arts, entertainment, recreation, accommodation and food services" industry, which would include fishing, rafting, camping, boating, hiking, and other outdoor activities. There are recreational businesses and concessions along the South Fork of the Kern River (e.g., rafting, camping, fishing, lodging, etc.) and the Lower Kern River. Isabella Reservoir also supports recreational opportunities and related businesses and concessions in the Kern River Valley. Outdoor recreation businesses that provide services in Kern County, including on the Kern River, are listed on the Kern County Outdoor Recreation web site.[2] Outdoor adventure businesses, including those in the communities of Kernville and Wofford Heights, lead visitors on half-day and overnight whitewater rafting and kayaking trips on the Upper North Fork of the Kern River and the Lower Kern River; outfit recreational visitors with gear for kayaking and stand-up paddle boarding on Isabella Reservoir; and lead visitors on guided fishing trips.

Public campgrounds such as Hobo and Sandy Flat in the Lower Kern Recreation Area and private campground businesses such as the Lake Isabella/Kern River KOA also operate in close proximity to Isabella Reservoir. The campgrounds advertise easy access to the boating, jet skiing, fishing, windsurfing, and swimming opportunities on Isabella Reservoir and close proximity to the whitewater rafting and kayaking businesses on the North Fork of the Kern River and the Lower Kern River. Among other factors, recreational-related businesses are dependent on flow in the South Fork of the Kern River.

As explained in Chapter 2 Project Description, the flow rate of the additional project–related surface water moving downstream in the South Fork of the Kern River to the Isabella Reservoir could vary from about 6 cubic feet per second (cfs) to 60 cfs. These surface water flows are a small percentage of the normal range of flows that typically occur in the South Fork of the Kern River and the Lower Kern River. The South Fork of the Kern River flows at the USGS Onyx Gage have typically ranged from 0 cfs to 14,000 cfs, and the Lower Kern River regulated flows below the Isabella Dam have typically ranged from 150 cfs to 4,500 cfs (for non-flashflood events) (Thomas Harder & Co., 2015). The addition of project-related flows to the South Fork of the Kern River would support existing recreational opportunities and businesses in the Kern River Valley; as such, the persons they employ would not be affected by the proposed project. Therefore, no significant impact to recreation-related employment would occur.

[2] http://www.visitkern.com/outdoor-recreation

Since there would be no impact to recreation-related employment, the proposed project would not cause any secondary environmental impacts. With implementation of the proposed project, no significant impact to the physical environment would occur as a result of changes in recreation-related employment in the Kern River Valley.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- Implementation of the proposed project may result in the loss of up to two agriculture-related employees on Onyx Ranch, which would reduce the percentage of the civilian population employed in the "agriculture, forestry, fishing and mining" industry in the Kern River Valley from 4.8 percent to 4.7 percent. Therefore, no significant impact to agriculture-related employment would occur, and the reduction in agriculture-related employment would not result in significant secondary impacts to the physical environment.
- With implementation of the proposed project, the addition of project-related flows to the South Fork of the Kern River would support existing recreational opportunities and businesses in the Kern River Valley; as such, the persons they employ would not be affected by the proposed project. Therefore, no significant impact to recreation-related employment would occur. Since there would be no impact to recreation-related employment, the proposed project would not cause any significant secondary impacts to the physical environment.

Potential Cumulative Impacts

Cumulative impacts associated with population and employment could occur if two or more related impacts occurred at the same time as the proposed project and in the immediate vicinity of each other. The cumulative projects to be considered in the analysis of cumulative impacts are listed in Table 3-2 and shown in Figure 3-1 in Section 3.2 Cumulative Impacts Methodology. The only cumulative projects that could contribute to the proposed project's cumulative impacts to population and employment are Cumulative Project A, Isabella Lake Dam Safety Modification Project, Cumulative Project C, Upper Taylor Meadow Gully Repair Project, and Cumulative Project D, Weldon Regional Water District. The other identified cumulative projects are located too far away to contribute to the potential cumulative impacts of the proposed project.

As described above, implementation of the proposed project would not result in secondary environmental impacts associated with potential changes to agriculture-related and recreation-related employment.

Cumulative Projects A and C would involve improvements (seismic and soil-related) that would essentially improve water flow within the Kern River, the South Fork of the Kern River, and Isabella Reservoir. Cumulative Project D would involve formation of a new Water District and

implementation of new physical facilities including groundwater wells, pipelines, booster pump stations, storage tanks and reservoirs, and a new office in the community of Weldon in the South Fork Valley. Cumulative Project C is located about 5 miles north of the proposed project site and the path of drainage from Cumulative Project C to the project site would be even farther. Cumulative Project A is located approximately 6 miles west of the proposed project site. Cumulative Project D is located directly adjacent to the proposed project site. It is anticipated that construction work on all three projects would result in temporary additional construction workers in the Kern River Valley. Cumulative Projects A and C are infrastructure-related projects and would not require a permanent change in employment; however, Project D would ultimately distribute water to customers within the new Weldon Regional Water District and would employ up to 20 persons in support of the new Water District (Tom Dodson & Associates, 2020). Given the potential for a permanent increase and no decrease in workers respective to the employment defined in Table 3.13-7, the impacts to employment associated with Cumulative Projects A, C, and D and the proposed project would not combine to create a significant cumulative impact as well as cumulative secondary environmental impacts.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- The cumulative projects would not combine with the proposed project to create a substantial adverse impact to employment in the Kern River Valley. As a result, there would be no cumulative secondary impacts to the physical environment.

3.13.4 References

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3.14 Tribal Cultural Resources

This section addresses the potential impacts related to tribal cultural resources associated with implementation of the proposed project. This section includes: a description of the existing setting for tribal cultural resources on the project site and in the Kern River Valley; a summary of applicable regulations related to tribal cultural resources; and an evaluation of the potential for the proposed project to result in environmental impacts related to tribal cultural resources on the project site. In addition, an evaluation of the potential cumulative impacts is provided. This section is based on: the results of the consultation notification sent to the California Native American Tribes conducted by the RRBWSD for the proposed project, consistent with CEQA as amended by Assembly Bill (AB) 52; and the *Cultural Resources Review, Onyx Ranch South Fork Valley Water Project,* a confidential report prepared by ASM Affiliates (May 2020).

The NOP and Initial Study prepared for the proposed project indicated that the Draft EIR would analyze the potential for significant impacts related to tribal cultural resources if the proposed project would:

- 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 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).
- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is a 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, and considering the significance of the resource to a California Native American Tribe.

The analysis of these potential impacts is provided below in Section 3.14.3 Impact Analysis and Mitigation Measures.

Public comments that were received during the NOP public review period resulted in no addition to the scope of the Draft EIR related to the analysis of tribal cultural resources.

3.14.1 Environmental Setting

Location and Setting on the Project Site

The 4,109-acre project site is located in northeastern Kern County, in the Kern River Valley, within the South Fork Valley (see Figures 2-1 and 2-2 in Chapter 2 Project Description of this Draft EIR). The project site is located approximately 5 miles from the eastern boundary of the Isabella Reservoir along the South Fork of the Kern River. The majority of the project site, consisting of approximately 3,418 acres, is located within lands collectively known as the Onyx

Ranch. The remaining approximately 691 acres are parcels within the Smith Ranch, of which the RRBWSD owns one-third interest.

Pre-Contact Setting

The Kern River Valley region, including the South Fork Valley, has received minimal archaeological attention compared to other areas of the State. In part, this is because the majority of California archaeological work has concentrated in the Sacramento Delta, Santa Barbara Channel, and central Mojave Desert areas (Moratto, 1984). Based on previous archaeological research in the Kern River Valley (and the southern Sierra Nevada in general), the Pre-Contact Period appears to exhibit similarities to the archaeological record in the western Mojave Desert/Great Basin. As detailed by Schiffman and Garfinkel (1981), Moratto (1984), and Cuevas (2002), the Pre-Contact Setting is summarized below.

Lamont Phase (6,000 to 3,200 YBP)

Little if any evidence for early occupation or use of the southern Sierra Nevada has so-far been identified. Occasional discoveries of Early Archaic, referred to in this region as the Lamont Phase (6000 to 3200 years before present (YBP), include projectile points that suggest at least occasional use of the mountains for hunting. These dart points are similar to the Pinto series commonly found on the desert, potentially demonstrating cultural connections with these lowland populations. Although the archaeological record is not yet clear, small camps may have been occupied in the South Fork Valley during this period as well.

Canebrake Phase (3200 to 1350 YBP)

Population appears to have increased during the subsequent Canebrake Phase (3200 to 1350 YBP). According to Cuevas (2002:26), pine nut cache sites at higher elevations first appear during this period, with Moratto (1984:333) noting the establishment of camps near pinyon groves. Sierra Concave Base projectile points, essentially equivalent to Humboldt points in the Great Basin, are the primary diagnostic from this time period.

Sawtooth Phase (1350 to 650 YBP)

The Sawtooth Phase (1350 to 650 YBP) is the chronological equivalent of the Rose Spring Period in the Great Basin and, as in that region, it experienced the transition from the atlatl and dart to the bow and arrow. Sites dating to this period are common. Ornaments appear for the first time, including *Olivella* shell beads, indicating trade connections with the coast.

Chimney Phase (650 YBP to Historic Contact)

The final time period, the Chimney Phase (650 YBP to Historic Contact), reflects the immediately pre-contact/ethnographic Tubatulabal cultural pattern. This included a general hunting and gathering subsistence system, as described below.

Ethnographic Setting

The project site falls within the traditional territory of the Tubatulabal tribe. The Tubatulabal are Uto-Aztecan speakers, thus having cultural and linguistic connections with Shoshone and Kawaiisu groups in the deserts to the east and mountains to the south, respectively. Unlike these Great Basin tribes, Tubatulabal language was not part of the Numic branch of Uto-Aztecan but instead constituted its own branch, Tubatulabic (Kroeber, 1925; Voegelin, 1938). This suggests that they have been in place, and linguistically separated, from these language-relatives for quite some time, perhaps 5000 years (Lamb, 1958).

Reflecting their geographical and linguistic position between the Native Californian and Great Basin peoples, the Tubatulabal reflected a combination of both cultural patterns. Their mythology and religion were primarily Great Basin in tenor (Voegelin, 1938), with an emphasis on individual shamanistic ceremonies rather than periodic rituals. Their subsistence practices, however, combined emphases on the pinyon pine, like their Great Basin relatives, with the acorn, like the Yokuts to the west. In fact, the name Tubatulabal means “pine nut eaters” and was used by their Yokuts neighbors.

The Tubatulabal were loosely organized into three bands, the Pahkanapil on the South Fork of the Kern River, the Palagewan on the North Fork of the Kern River, and the Bankalachi on the western side of the Kern River Valley (Smith 1978). These bands were aggregations of small hamlets, with each hamlet containing two to six households of extended families. Although the Pahkanapil band was the larger of the bands, total Tubatulabal population prior to contact is estimated at only 300 to 500 people (Voegelin, 1938).

Voegelin recorded two Tubatulabal hamlets in the vicinity of the project location. The first is *Omomip*, name untranslated, which she mapped at two nearby locations. The first location is in the hills above the South Fork of the Kern River, whereas the second is a current tribal allotment, on the north bank of the South Fork Valley floor, against the mountain slope. It is in the vicinity of the historical Onyx Ranch headquarters and appears to have been initially associated with wage labor on the ranch by tribal members (according to Powers [1987:51], Tubatulabal families provided several generations of cowboys to the ranch). As a federal allotment, it is outside of the project site. Judging from the historical circumstances, these duplicated hamlet names appear to represent a shift in the settlement location (the traditional location in the foothills to the current location on the allotment) by most, but not all of its occupants, to better accommodate employment on the ranch.

The second hamlet is *Yowolup*, Red Dirt Place, at a spring at the South Fork Valley edge, west of the current location of the community of Onyx. It was unoccupied in 1932, but was estimated to have about 35 occupants historically. It has not been relocated though it appears to have been northeast and outside of the project site.

By about 1870, most of the remaining Tubatulabal were living and farming in the South Fork Valley, with many tribal members working for the Euro-American farmers and ranchers that were settling in the area. The Dawes Severalty Act of 1887 was passed with the intention of promoting private ownership of small farms by tribal members (Clemmer and Stewart, 1986). In 1893, the

Tubatulabal were awarded a series of allotments as a result of this act, many of which were named for the families that received them. These allotments were held in trust, restricting how the occupants could use them; perhaps the greatest of which is no right to build permanent structures on the property. As a result of this historical event, the Tubatulabal fall within the unusual (though not unique) position of not having full status as a "federally recognized tribe" yet; nonetheless, retaining a kind of recognition that allows them to receive some, but not all, forms of tribal assistance from the Bureau of Indian Affairs.

Cumulative Setting

As discussed in Section 3.2 Cumulative Impacts Methodology, the geographic area addressed in the discussion of cumulative impacts varies based on the environmental resource topic being analyzed. The geographic area of the analysis of the potential cumulative impacts of the proposed project and cumulative projects related to tribal cultural resources is limited to the Kern River Valley and surrounding areas, as described above. This is because impacts relative to tribal cultural resources are generally site-specific. For example, the effect of project-related ground disturbance to tribal cultural resources would tend to be limited to the localized area of a project and could only be cumulative if ground disturbance occurred as the result of two or more projects in the vicinity of the same tribal cultural resource.

3.14.2 Regulatory Framework

State of California

Assembly Bill 52 and Related Public Resources Code Sections

AB 52 was approved by Governor Brown on September 25, 2014. The act amended Public Resources Code (PRC) section 5097.94, and added PRC sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. These PRC sections were added to CEQA, which is codified in PRC Sections 21000 et seq. AB 52 applies specifically to projects for which an NOP or a notice of intent to adopt a negative declaration or mitigated negative declaration (MND) is filed.

The primary intent of AB 52 is to include California Native American Tribes early in the environmental review process and to establish a new category of resources related to Native Americans, known as tribal cultural resources, that require consideration under CEQA. PRC Section 21074(a)(1) and (2) defines tribal cultural resources as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American [T]ribe" that are either included or determined to be eligible for inclusion in the California Register or included in a local register of historical resources, or a resource that is determined to be a tribal cultural resource by a lead agency in its discretion and supported by substantial evidence. On July 30, 2016, the California Natural Resources Agency adopted the final text for the tribal cultural resources update to the CEQA Guidelines Appendix G, which was approved by the Office of Administrative Law on September 27, 2016.

PRC Section 21080.3.1 requires that within 14 days of a lead agency determining that an application for a project is complete, or a decision by a public agency to undertake a project, the lead agency provide formal notification to the designated contact, or a Tribal representative, of California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project (as defined in PRC Section 21073) and who have requested in writing to be informed by the lead agency (PRC Section 21080.3.1(b)). Tribes interested in consultation must respond in writing within 30 days from receipt of the lead agency's formal notification and the lead agency must begin consultation within 30 days of receiving the Tribe's request for consultation (PRC Sections 21080.3.1(d) and 21080.3.1(e)).

PRC Section 21080.3.2(a) identifies the following as potential consultation discussion topics: the type of environmental review necessary; the significance of tribal cultural resources; the significance of the proposed project's impacts on the tribal cultural resources; project alternatives or appropriate measures for preservation of tribal cultural resources; and mitigation measures. Consultation is considered concluded when either: (1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or (2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC Section 21080.3.2(b)).

If a California Native American Tribe has requested consultation pursuant to PRC Section 21080.3.1 and does not provide comments to the lead agency, or otherwise does not engage in the consultation process, or if the lead agency has complied with Section 21080.3.1(d) and the California Native American Tribe has not requested consultation within 30 days, then the lead agency may certify an EIR or adopt an MND (PRC Section 21082.3(d)(2) and (3)).

PRC Section 21082.3(c)(1) states that any information, including, but not limited to, the location, description, and use of the tribal cultural resources, that is submitted by a California Native American Tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public without the prior consent of the California Native American Tribe that provided the information. If the lead agency publishes any information submitted by a California Native American Tribe during the consultation or environmental review process, then that information shall be published in a confidential appendix to the environmental document unless the Tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public.

CEQA

CEQA is applicable to discretionary actions by State or local lead agencies. Under CEQA, lead agencies must analyze impacts to cultural resources. Significant impacts under CEQA occur when "historically significant" or "unique" cultural resources are adversely impacted, which occurs when such resources could be altered or destroyed through project implementation. Historically significant cultural resources are defined by eligibility for or by listing in the California Register of Historic Resources (CRHR). In practice, the federal NRHP criteria for significance applied under Section 106 are generally (although not entirely) consistent with CRHR criteria (see PRC Section 5024.1, Title 14 CCR, Section 4852 and Section 15064.5(a)(3)).

A significant cultural resource under CEQA is an archaeological resource and/or historical property that:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(2) Is associated with the lives of persons important in our past;

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

A unique archeological resource under CEQA, in slight contrast, is a resource that represents:

> an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC Section 21083.2(g)).

Preservation in place is the preferred approach under CEQA to mitigating adverse impacts to significant or unique cultural resources. Significant adverse impacts occur when a historical resource is adversely impaired by project implementation, including physical destruction, demolition or alteration (CEQA Guidelines, Section 15064.5[b][c]).

Assembly Bill 52 (PRC Section 21080) amended CEQA to broaden the category of historical resources to include tribal cultural resources. It further formalized the relationship between lead agencies and tribal organizations to include, upon tribal request, government-to-government consultation between a lead agency and a tribal organization about a proposed project.

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for eligibility for the California Register are based upon National Register criteria (PRC Section 5024.1(b)). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a prehistoric or historic-period property must be significant at the local, state, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Is associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally determined eligible for the National Register.
- California Registered Historical Landmarks from No. 770 onward.
- Those California Points of Historical Interest that have been evaluated by the State Office of Historic Preservation (OHP) and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register).
- Individual historical resources.
- Historical resources contributing to historic districts.
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

Local

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, policies, and implementation measures of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the Kern River Valley Specific Plan (KRVSP) area, which was addressed in the

KRVSP adopted by Kern County in 2011. The KRVSP provides an element that includes a goal, policy, and implementation measure related to tribal cultural resources within the Kern River Valley. The applicable element and its goal, policy, and implementation measure are as follows:

Land Use Element

The Land Use Element discusses established and future development patterns within the Kern River Valley. The Land Use Element identifies goals, policies, and implementation measures to protect and preserve historic and cultural resources in the Kern River Valley. The applicable goal, policy, and implementation measure are as follows:

Goal 2.1.2: Protect historical and cultural resources and sites within the Kern River Valley.

Policy 2.1.10: Promote the preservation of cultural and historic resources which provide ties to the past.

Implementation 2.1.1: The Kern County Planning and Community Development Department shall work with local Native American groups and historic organizations to inventory a specific list of historic resources and sites utilizing community input. The list of historic resources and sites shall be protected to the greatest extent possible. New discretionary projects shall incorporate protective measures for those historic resources and sites identified.

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009). The Land Use, Open Space, and Conservation Element of the General Plan provides for the conservation of Kern County's agricultural and natural resources as well as tribal cultural resources (Kern County, 2009).

Land Use, Open Space and Conservation Element

The Land Use, Open Space, and Conservation Element identifies goals, policies, and implementation measures to promote the preservation of cultural and historic resources. The applicable policy and implementation measures are as follows:

General Provisions – Archaeological, Paleontological, Cultural, and Historical Preservation

Policy 25. The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.

Implementation Measure K. Coordinate with the California State University, Bakersfield's Archaeology Inventory Center.

Implementation Measure L. The County shall address archaeological and historical resources for discretionary projects in accordance with the California Environmental Quality Act (CEQA).

Implementation Measure 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.

Implementation Measure 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.

3.14.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to pages 3.14-1 above for a summary of the environmental issues included in this Draft EIR for the analysis of tribal cultural resources. This Draft EIR assumes that the implementation of the proposed project would have a significant impact related to tribal cultural resources if it would:

- 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:
  - 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).
  - 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, considering the significance of the resource to a California Native American Tribe.

Methodology

The analysis of impacts to tribal cultural resources is based on: the tribal notification that RRBWSD commenced in accordance with AB 52 and the lack of response from the California Native American Tribes that were notified; the information provided in Section 3.7 Cultural Resources of this Draft EIR; and information provided in the *Cultural Resources Review, Onyx Ranch South Fork Valley Water Project*, a confidential report prepared by ASM Affiliates (May 2020). The potential for the project site to contain tribal cultural resources was assessed based on these sources including the findings of: the cultural resource records search (i.e., presence and proximity of known resources); the sacred lands file (SLF) search requested from the NAHC; land use history research; subsurface geological conditions; and the proposed ground disturbance activities as a result of the proposed project.

Archival Research

Sacred Lands File Search

The NAHC maintains a confidential SLF which contains sites of traditional, cultural, or religious value to the Native American community. The NAHC was contacted to request a search of the SLF. The NAHC responded that there was no record of sacred lands in the SLF for the project site.

Cultural Resources Archival Research

As discussed in Section 3.7 Cultural Resources, a cultural resources records search was conducted at the California Historic Resources Information System (CHRIS), Southern San Joaquin Valley Information Center (SSJVIC) housed at California State University, Bakersfield. The SSJVIC records search found that: 24 survey reports have been conducted within a 0.5-mile radius of the project site; and 26 survey reports have been conducted within the project site. As a result of these surveys, 24 resources (21 recorded and 3 unrecorded) have been found with 0.5-mile of the project site and 19 resources (17 recorded and 2 unrecorded) have been found on the project site.

The 19 resources found on the project site consist of nine historic built structures/features and 10 archeological sites (four historic in age and six prehistoric in age). The historic resources include six historic ditches: Historic Ditch (P-15-013671); Miller Ditch (P-15-018209); Hillside Ditches (P-15-018210 and P-15-019039); Landers Ditch (not recorded); and Prince Ditch (not recorded). The remaining three historic resources consist of the Grant Homestead (P-15-013794), the Onyx Ranch Complex (P-15-017841), and Kelso Valley Road (P-15-017740). The 10 archaeological resources include: two historical cemeteries (P-15-000099 and P-15-013673); two historic refuse dumps (P-15-013791 and P-15-013793); two prehistoric milling stations (P-15-000105 and P-15-000106); one prehistoric lithic scatter (P-15-013792); two prehistoric sites with rock art (P-15-002427 and P-15-0024280); and one isolated millingstone.

Of the six historic ditches, only three, the Miller Ditch (P-15-18209), the Landers Ditch (not recorded); and the Prince Ditch (not recorded), have been previously evaluated for listing in the National Register and through concurrence with the SHPO were determined not eligible. Additionally, the Hillside Ditches (P-15-018210) have been recommended not eligible for listing in the National Register.

Assembly Bill 52 Tribal Consultation

There were no California Native American Tribes that have requested notification about projects under environmental review by the RRBWSD as the lead agency pursuant to AB 52 and PRC Section 21080.3.1(b). Nonetheless, on December 12, 2019, pursuant to the requirements of AB 52 requiring government to government consultation, the RRBWSD mailed consultation notification letters (dated December 8, 2020) to the California Native American Tribes identified by the NAHC as having traditional and cultural affiliation with the geographic area of the project site (PRC Section 21080.3.1 and PRC section 21073). The notification letter provides for a 30-day response period that ended on January 13, 2020. A summary is provided below in Table 3.14-

1. The letters included a description of the proposed project, the project location, a notification of the type of consultation being initiated, record search results, and a map of known sites on and within a 0.5-mile of the project site. As of the date of publication of this Draft EIR, no responses have been received, and no tribal cultural resources have been identified as a result of the consultation.

TABLE 3.14-1
SUMMARY OF AB 52 CORRESPONDENCE

Contact	Tribe/Organization	Date AB 52 Notice Sent	Response Received
Mr. Robert Robinson, Chairperson and Ms. Julie Turner, Secretary	Kern Valley Indian Community	December 12, 2019	No response
Ms. Delia Dominguez, Chairperson	Kitanemuk & Yowlumne Tejon Indians	December 12, 2019	No response
Mr. Robert L Gomez, Jr. Chairperson	Tubatulabals of Kern Valley	December 12, 2019	No response
Ms. Brandy Kendricks	Kern Valley Indian Community	December 12, 2019	No response
Nuui Cunni Native American Cultural Center	Nuui Cunni Native American Cultural Center	December 12, 2019	No response
Mr. Octavio Escobedo, Chair and Mr. Colin Rambo, CRM	Tejon Indian Tribe	December 12, 2019	No response

Impact Analysis

Tribal Cultural Resources

Potential Impact TCR-1: Would the proposed project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is 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)?

Potential Impact TCR-2: Would the proposed project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is a 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, and considering the significance of the resource to a California Native American Tribe?

AB 52 requires lead agencies to evaluate a proposed project's potential to impact tribal cultural resources (TCR) and establishes a formal consultation process for California Native American Tribes as part of CEQA. TCR includes sites, features, places, cultural landscapes, sacred places,

and objects with cultural value to a California Native American Tribe that are eligible for inclusion in the California Register or included in a local register of historical resources. AB 52 also gives lead agencies the discretion to determine, supported by substantial evidence, whether a resource qualifies as a TCR. Consultation is required upon request by a California Native American Tribe that has previously requested that the agency provide it with notice of such projects, and that is traditionally and culturally affiliated with the geographic area of a proposed project.

There are no California Native American Tribes that have requested notification about projects from the RRBWSD pursuant to AB 52 and PRC Section 21080.3.1(b). Nonetheless, the RRBWSD commenced tribal notification in accordance with AB 52 on December 12, 2020, via a mailing to all of the Tribes identified by the NAHC as having traditional and cultural affiliation with the geographic area of the project site. The 30-day notification response window closed on January 13, 2020. As of the date of publication of this Draft EIR, no Tribes have commented on the request. No existing TCR are known to exist within the project site. Should there be an inadvertent discovery of a tribal cultural resource, the RRBWSD must follow the existing regulatory requirements of AB 52. Therefore, with implementation of the proposed project, potential impacts to tribal cultural resources would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- No existing tribal cultural resources are known to exist within the project site. Should there be an inadvertent discovery of a tribal cultural resource, the RRBWSD must follow the existing regulatory requirements of AB 52. Therefore, with implementation of the proposed project, potential impacts to tribal cultural resources would be less than significant.

Potential Cumulative Impacts

A cumulative impact analysis for tribal cultural resources evaluates whether impacts of a project and related cumulative projects, when taken as a whole, would be considerable or would compound or increase environmental impacts on tribal cultural resources. The cumulative projects to be considered in the analysis of cumulative impacts are listed in Table 3-1 and shown on Figure 3-1 in Section 3.2 Cumulative Impacts Methodology. The only cumulative projects that could have impacts to cultural resources and that, combined with the proposed project, could result in cumulatively considerable impacts, are Cumulative Project C, Upper Taylor Meadow Gully Repair Project, and Cumulative Project D, Weldon Regional Water District. All other projects are located too far away to result in potential cumulatively considerable impacts.

As stated above for Potential Impact TCR-1 and TCR-2, no existing tribal cultural resources are known to exist within the project site, and, with implementation of the proposed project, impacts to tribal cultural resources would be less than significant. Therefore, to the extent impacts on tribal cultural resources from cumulative projects may occur, the contribution from the proposed project would not be cumulatively considerable.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- No existing tribal cultural resources are known to exist within the project site and, with implementation of the proposed project, potential impacts to tribal cultural resources would be less than significant. Therefore, to the extent impacts on tribal cultural resources from cumulative projects may occur, contribution from the proposed project would not be cumulatively considerable.

3.14.4 References

ASM Affiliates, 2020. Cultural Resources Review, Onyx Ranch South Fork Valley Water Project, Kern County, California. Prepared for Rosedale-Rio Bravo Water Storage District. May 2020.

Kern County, 2009. Kern County General Plan, Kern County Planning Department, September 2009. Available at: https://kernplanning.com/planning/planning-documents/general-plans-elements/.

Kern County, 2011. Kern River Valley Specific Plan (KRVSP), Kern County Planning and Community Development Department, January 2011.

3.15 Utilities, Service Systems, and Energy

This section addresses the potential impacts related to utilities, service systems, and energy with implementation of the proposed project. This section includes: a description of existing applicable utility/service system providers as well as existing energy sources for the South Fork Valley; a summary of applicable regulations related to the utilities/service systems and energy sources available for the South Fork Valley; and an evaluation of the potential for the proposed project to result in environmental impacts related to utilities/service systems and energy on the project site and in the South Fork Valley. In addition, an evaluation of the potential cumulative impacts is provided.

The NOP and Initial Study determined that the proposed project would have no impact or a less than significant impact related to utilities and service systems for the following issues:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- 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.
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs.
- Comply with federal, state, and local statutes and regulations related to solid waste.

Therefore, these issues are not discussed further in this Draft EIR. (See Section 3.1 Format of the Environmental Impact Analysis and Appendix A Public Participation Process for additional information.)

The NOP and Initial Study determined that the proposed project would have no impact related to utilities and services systems for the following environmental issue and the issue would not be discussed in this Draft EIR:

- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

However, public comments related to the issue of sufficient water supplies were received during the NOP public review period. As a result, this issue has been added to the scope of this Draft EIR. The analysis of this potential impact is provided below in Section 3.15.3 Impact Analysis and Mitigation Measures.

The CEQA Guidelines were revised on December 28, 2018, which resulted in the addition of Energy as an environmental topic to the Appendix G Environmental Checklist. As a result, the expanded significance criteria and associated analyses pertaining to energy are included below in Section 3.15.3 Impact Analysis and Mitigation Measures.

The RRBWSD contracted with Environmental Science Associates to conduct modeling for air quality, GHG, and energy impacts associated with the proposed project. The details regarding assumptions and calculations that support the modeling are provided in Appendix B Air Quality, Greenhouse Gases, and Energy to this Draft EIR.

3.15.1 Environmental Setting

Regional and Local Setting

The 4,109-acre project site is located in northeastern Kern County, in the Kern River Valley, within the South Fork Valley (see Figures 2-1 and 2-2 in Chapter 2, Project Description, of this Draft EIR). The project site is located approximately four miles east of the eastern extent of the Isabella Reservoir and situated adjacent to and on either side of the South Fork of the Kern River.

Since its settlement in the 1860s, the primary land use in the South Fork Valley has been irrigated agriculture and ranching (Crooker, 1930). Historical water supply for the irrigation of crops on the project site has been accomplish through a system of unlined earthen irrigation ditches that divert surface water from the South Fork of the Kern River to the ditches on the project site. Currently crop irrigation is also supplemented with groundwater pumped from production wells[1] on the project site.

Figure 2-4 in Chapter 2 Project Description of this Draft EIR indicates the locations of the existing tracts, agricultural fields, and ditches on the project site and where the ditches originate or end off-site. Of the approximately 3,418 acres of land on the Onyx Ranch portion of the project site, approximately 2,269 acres are currently used for an agricultural purpose. The remainder of the Onyx Ranch, consisting of approximately 1,149 acres, is either developed or mountainous and, therefore, not suitable for agriculture. For the Smith Ranch portion of the project site, of the approximately 691 acres, approximately 308 acres are riparian pasture, 171 acres are mountainous areas, and approximately 242 acres are used for irrigated pasture purposes. The riparian and irrigated pastures have been irrigated for at least the last twenty years.

As indicated in Figure 2-3, in addition to SR 178 which traverses through the two parts of the project site, there are three developed areas on the project site: (1) the Onyx Ranch Headquarters located along the northern boundary of the project site; (2) the Onyx Store, adjacent single family residence, and sheds located along the southern side of SR 178, in the central-eastern portion of the project site; and (3) buildings associated with the Smith Ranch located in the eastern portion of the project site. A review of aerial photographs of the project site indicated that the structures on the Onyx Ranch were constructed prior to 1952 (Kennedy/Jenks, 2008). Based on a site visit

[1] A production well is a well from which water is pumped for beneficial use, as opposed to monitoring wells that are used to measure groundwater levels and groundwater quality.

in 2019, it was concluded that little change to development has occurred on the project site since then.

The structures and supporting facilities that comprise the Onyx Ranch Headquarters include ranch-style residential structures, rows of cabins, barns, silos, storage sheds, water wells, corals, and storage areas for equipment and debris. The Onyx Store, which was founded in 1861, continues to operate today. Adjacent to the Onyx Store is a single-family residence, storage sheds, and a parking lot. The proposed project does not involve any changes to the Onyx Ranch Headquarters or the Onyx Store.

The structures and facilities associated with the Smith Ranch include a residence, two barns, two corrals, a saddle house, storage sheds, associated outbuildings, and two water wells. The proposed project does not involve any changes to these structures or facilities.

Water Supply

Refer to Section 3.11 Hydrology and Water Quality, of this Draft EIR for a detailed discussion of the existing surface water and groundwater conditions, including water quality, within the Hydrological Study Area defined in Section 3.11 and shown on Figure 3-11.1. The subsections below discuss surface water and groundwater relative to utilities, particularly, the availability of water supplies.

Surface Water Conditions

The Hydrological Study Area is located in portions of three watersheds within the Sierra Nevada Mountains: North Fork Kern Watershed; South Fork Kern Watershed; and Kern Watershed (see Figure 3.11-1). As shown in Figure 3.11-1, the project site is located in the South Fork Kern Watershed. To the north surface runoff within the North Fork Kern Watershed drains into the North Fork of the Kern River and then into the Isabella Reservoir. Surface runoff within the South Fork Kern Watershed flows to the South Fork of the Kern River and then into the Isabella Reservoir. The outflow from the Isabella Reservoir occurs via controlled releases at the Isabella Dam to the Lower Kern River. The Kern River and Kern Watershed occur in the southwestern corner of the Hydrological Study Area.

Within the Hydrological Study Area, inflow to surface water in the Kern River Valley area includes precipitation on the land surface and in Isabella Reservoir, river inflow in the North Fork and South Fork of the Kern River and smaller tributaries, groundwater discharge to surface water, and groundwater pumping for irrigation. Outflow of surface water from the South Fork Valley area includes infiltration from precipitation, the South Fork of the Kern River, tributaries, earthen irrigation ditches, and applied irrigation water; evapotranspiration from the land surface and evaporation from Isabella Reservoir; crop consumptive use; seepage from Isabella Reservoir; and releases to the Lower Kern River at the Isabella Dam.

Relative to utilities and water supplies, a number of diversion points and irrigation ditches are located within the Hydrological Study Area, as shown on Figure 2-4; all are used as water supply for irrigation of crops and water for livestock. A detailed discussion of water rights and the

existing diversion volumes associated with the project site is provided in Chapter 2 Project Description of this Draft EIR (see Section 2.5 Project Setting, and Section 2.6 Water Rights and Proposed Diversion).

Groundwater Conditions

The project site is located within the Kern River Valley Groundwater Basin as described in DWR Bulletin 118 (DWR, 2004). In general, the groundwater basin includes the alluvial valley areas of the North Fork of the Kern River, South Fork of the Kern River, Canebrake Creek, and other tributary creeks. The South Fork of the Kern River and the surrounding land area is not located within a critically overdrafted groundwater basin identified by the DWR. As such, the Basin is not subject to a sustainable groundwater management act (SGMA) plan because it is considered to be a "low priority" basin by the DWR.

The alluvial aquifer system in the South Fork Valley is relatively shallow and permeable, with the alluvium generally less than 300 feet thick (Thomas Harder & Co., 2015, 2019). The extent of the alluvium is shown in Figure 3.11-2. In the area east of Isabella Reservoir that includes the project site, the alluvial aquifer sediments consist primarily of sand and gravel with very high permeability. Pumping tests for the wells on the Onyx Ranch constructed in 2015 indicated that the aquifer hydraulic conductivities[2] were in the range of approximately 145 feet per day to 220 feet per day.

Groundwater within the Kern River Valley Groundwater Basin flows in a westerly direction in approximately the same direction as the surface water drainage (see Figure 3.11-2) (Thomas Harder & Co., 2019). Available data indicate that groundwater levels in the South Fork Valley portion of the Hydrological Study Area have been relatively stable since 1929. Figure 10 in Appendix E, Hydrogeological Technical Reports, of this Draft EIR provides hydrographs[3] for five wells within the Hydrological Study Area. As shown in the hydrographs, the groundwater levels measured in monitoring wells located near the South Fork of the Kern River (Wells HYD-1 and HYD-11) typically fluctuate between levels above land surface to 15 feet below land surface, depending on their location and time of measurement. Additionally, the hydrographs show that the groundwater levels in wells located away from the South Fork of the Kern River (Wells SP-2 and 26S/34E-13J01) typically fluctuate within a range of 10 to 20 feet and have been relatively stable over the period of record.

In the Kern River Valley area and within the Hydrological Study Area, groundwater is a water supply source for all uses (i.e., domestic, commercial, industrial, recreational, and agricultural). The groundwater rights in the Kern River Valley are not adjudicated, and there is no established groundwater management plan for the Kern River Valley Groundwater Basin. Groundwater producers generally pump as much as is needed to meet demands until water levels drop to a

[2] Hydraulic conductivity is the ease with which water moves through porous spaces and fractures in soil or rock. It is subject to a hydraulic gradient and affected by saturation level and permeability of the material.

[3] A hydrograph is a graph showing the rate of flow (discharge) versus time past a specific point in a river, channel, or conduit carrying flow.

point of declining production. Consequently, the Kern River Valley has been subject to various moratoria due to groundwater quality and quantity issues (Kern County, 2011b).

The existing groundwater wells with historical records located in the Hydrological Study Area are shown in Figure 3.11-3 in Section 3.11, Hydrology and Water Quality (Thomas Harder & Co., 2019). Most of the wells are used for agricultural irrigation or water for livestock. There are 13 community water systems within the local area, also shown and listed on Figure 3.11-3. There are 29 monitoring wells (non-pumping wells) used by Audubon California to monitor groundwater levels within the Kern River Preserve. It is further noted that, although many of the wells shown on Figure 3.11-3 were identified from historical records, many may not exist anymore. In addition, there may be wells that do not have records. The total number of active wells within the Hydrological Study Area is unknown.

Energy

Regional Energy Conditions

Electricity

The production of electricity requires the consumption or conversion of energy resources including water, wind, oil, gas, coal, solar, geothermal, and nuclear resources, into energy. The delivery of electricity involves a number of system components for distribution and use. The electricity generated is distributed through a network of transmission and distribution lines commonly called a power grid.

Energy capacity, or electrical power, is generally measured in watts (W), while energy use is measured in watt-hours (Wh). For example, if a light bulb has a capacity rating of 100 W, the energy required to keep the bulb on for 1 hour would be 100 Wh. If ten 100-W bulbs were on for 1 hour, the energy required would be 1,000 Wh or 1 kilowatt-hour (kWh). On a utility scale, a generator's capacity is typically rated in megawatts (MW), which is one million watts, while energy usage is measured in megawatt-hours (MWh) or gigawatt-hours (GWh), which is one billion watt-hours.

Southern California Edison (SCE) provides electrical services to the project site. SCE provides electrical services to approximately 15 million people, 15 counties, 180 incorporated cities, 5,000 large businesses, and 280,000 small businesses throughout its 50,000-square-mile service area, across central, coastal and southern California (SCE, 2019). This area is bounded by Mono County to the north, Ventura County to the west, San Bernardino County to the east, and Orange County to the south. SCE produces and purchases energy from a mix of conventional and renewable generating sources.

The energy sources used by SCE include hydropower (greater than 30 MW), coal, gas, nuclear sources, and renewable resources, such as wind, solar, small hydropower (less than 30 MW), and geothermal sources. In 2017, SCE's power system experienced a peak demand of 23,508 MW (SCE, 2018; CEC, 2019). Approximately 32 percent of SCE's 2017 electricity purchases were

from renewable sources (CEC, 2017a). The annual electricity sale to customers in 2018 was approximately 87,143,000 MWh (SCE, 2018).

Propane

Natural gas is a combustible mixture of simple hydrocarbon compounds, such as methane, propane, butane, and ethane) that is used as a fuel source. Natural gas consumed in California is obtained from naturally occurring petroleum hydrocarbon reservoirs. Within the South Fork Valley, propane is used; there is no natural gas (i.e., methane) delivery system. The propane, also referred to as liquid propane gas or LPG, is compressed into a liquid form and either sold in portable canisters, or delivered via truck to a permanent storage tank on the particular property. California Propane, an industry advocate group, estimates the annual use of propane within California to be about 220,000,000 gallons per year (California Propane, 2010).

Transportation Energy

According to the California Energy Commission (CEC), transportation accounted for nearly 38.5 percent of total energy consumption in California during 2015 (CEC, 2017b). In 2018, 15.5 billion gallons of gasoline and 1.6 billion gallons of diesel fuel were consumed in California (CEC, 2018a). Petroleum-based fuels currently account for more than 90 percent of California's transportation fuel use (CEC, 2017c).

The State is now working on developing flexible strategies to reduce petroleum use. Over the last decade, California has implemented several policies, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHGs from the transportation sector, and reduce vehicle miles traveled (VMT). Accordingly, gasoline consumption in California has declined. The CEC predicts that the demand for gasoline will continue to decline over the next 10 years, and there will be an increase in the use of alternative fuels (CEC, 2017b). According to fuel sales data from the CEC, fuel consumption in Kern County was approximately 345 million gallons of gasoline and 97 million gallons of diesel fuel in 2018 (CEC, 2018a).

Local Energy Conditions

Current uses of propane on the project site is limited to that used for heating of buildings and weed burning. Existing operations include five electric wells and five solar-powered wells. Solar-powered wells that are not connected to the electrical grid and, therefore, only operate during daylight hours. The five electric wells, the Mack, Nicoll, Pruitt, Landers, and Scodie wells, are located on the Onyx Ranch. These five wells have a current annual usage of 1,029 MWhs, which is 0.001 percent of SCE's annual consumption. Detailed calculations are provided in Appendix B, Air Quality, Greenhouse Gases, and Energy, of this Draft EIR.

Gasoline and diesel use on the project site is limited to that used in the agriculture equipment, cattle transport vehicles, and worker vehicles. As the agricultural equipment use and worker vehicle trips are anticipated to either remain the same or decrease, the existing consumption was not quantified. Existing diesel usage associated with cattle transport on the project site is approximately 1,419 gallons per year, which is 0.001 percent of the State's annual consumption.

Detailed calculations are provided in Appendix B, Air Quality, Greenhouse Gases, and Energy, of this Draft EIR.

Cumulative Setting

The cumulative study area is based on the service area for each of the water and energy utilities described above. Propane is trucked to the project site and stored in propane tanks. Physical impacts to utilities and service systems are usually associated with population in-migration and growth in an area, which increase the demand for a particular service, leading to the need for expanded or new facilities. There is no potential for growth associated with the proposed project (see Chapter 4 Growth Inducement), thereby limiting its potential to contribute to an increased demand for a particular service. As described below in the Methodology section, the proposed project would place a negligible demand on groundwater (i.e., the solar-powered wells for livestock water) and energy.

As discussed in Section 3.2 Cumulative Impacts Methodology, the geographic area addressed in the analysis of cumulative impacts varies based on the environmental resource topic being analyzed. The geographic area of the analysis of the potential cumulative impacts of the proposed project and cumulative projects related to water and energy is limited to the Hydrological Study Area, as depicted in Figure 3.11-1 and described above.

3.15.2 Regulatory Framework

Federal

Energy Policy Act of 1992

The Energy Policy Act (EPAct) of 1992 was passed to reduce U.S. dependence on foreign petroleum and improve air quality. EPAct includes several provisions intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, State, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. Financial incentives are also included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the EPAct to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 includes provisions for renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a Federal purchase requirement for renewable energy.

U.S. Department of Transportation, US Department of Energy, and US Environmental Protection Agency on Transportation Energy

On the federal level, the U.S. Department of Transportation, U.S. Department of Energy, and U.S. EPA are three agencies with substantial influence over energy policies related to transportation fuels consumption. Generally, federal agencies influence transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through funding of energy-related research and development projects, and through funding for transportation infrastructure projects.

State of California

California Public Utilities Commission

The California Public Utilities Commission (CPUC) is a State agency created by a constitutional amendment to regulate privately owned utilities providing telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation services, and in-State moving companies. The CPUC is responsible for assuring that California utility customers have safe, reliable utility services at reasonable rates, while protecting utility customers from fraud. The CPUC regulates the planning and approval for the physical construction of electric generation, transmission, or distribution facilities; and local distribution pipelines of natural gas (CPUC, 2019).

California Energy Commission

The California Energy Commission (CEC) is California's primary energy policy and planning agency. The CEC has five major responsibilities: (1) forecasting future energy needs and keeping historical energy data; (2) licensing thermal power plants 50 MW or larger; (3) promoting energy efficiency through appliance and building standards; (4) developing energy technologies and supporting renewable energy; and (5) planning for and directing State response to energy emergencies.

Senate Bill 1389

Senate Bill (SB) 1389 (Public Resources Code PRC sections 25300–25323) requires the CEC to prepare a biennial integrated energy policy report that assesses major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors and provides policy recommendations to conserve resources; protect the environment; ensure reliable, secure, and diverse energy supplies; enhance the State's economy; and protect public health and safety (Public Resources Code PRC section 25301(a)).

California Building Standards Code (Title 24, Parts 6 and 11)

The California Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations [CCR], Title 24, Part 6) were adopted to ensure that building construction and system design and installation achieve energy efficiency and preserve outdoor and indoor environmental quality. The current California Building Energy Efficiency Standards (Title 24 standards) are the 2016 Title 24 standards, which became effective January

2017. The 2016 Title 24 standards include efficiency improvements to the residential standards for attics, walls, water heating, and lighting; and efficiency improvements to the non-residential standards include alignment with the American Society of Heating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 national standards.

The CEC first adopted Energy Efficiency Standards for Residential and Nonresidential Buildings (CCR, Title 24, Part 6) in 1978 in response to a legislative mandate to reduce energy consumption in the State. Although not originally intended to reduce GHG emissions, increased energy efficiency and reduced consumption of electricity, natural gas, and other fuels would result in fewer GHG emissions from residential and nonresidential buildings subject to the standard. The standards are updated periodically (typically every three years) to allow for the consideration and inclusion of new energy efficiency technologies and methods. The current Title 24, Part 6 standards (2016 standards) were made effective January 2017. The next update to the Title 24 energy efficiency standards (2019 standards) go into effect January 2020.

The California Green Building Standards Code (California Code of Regulations (CCR), Title 24, Part 11), commonly referred to as the CALGreen Code, became effective January 2017. The 2016 CALGreen Code includes mandatory measures for non-residential development related to site development, energy efficiency, water efficiency and conservation; material conservation and resource efficiency; and environmental quality. Most mandatory measure changes, when compared to the previously applicable 2013 CALGreen Code, were related to the definitions and to the clarification or addition of referenced manuals, handbooks, and standards. For example, several definitions related to energy that were added or revised affect electric vehicle (EV) chargers and charging, and hot water recirculation systems. For non-residential mandatory measures, Table 5.106.5.3.3 of the CALGreen Code, identifying the number of required EV charging spaces has been revised in its entirety. Refer to Section 3.7, Greenhouse Gas Emissions, of this Draft EIR for additional details regarding these standards.

Local

Kern River Valley Specific Plan

A specific plan is prepared for any defined geographic area that might benefit from specialized land use regulations and development standards. In Kern County, specific plans are used to implement goals, policies, and implementation measures of the General Plan in a more detailed and refined manner unique to a smaller area of the County. The majority of the project site is located within the Kern River Valley Specific Plan (KRVSP) area, which was addressed in the KRVSP adopted by Kern County in 2011. The KRVSP consists of elements that include goals, policies, and implementation measures related to public facilities, energy and sustainability within the Kern River Valley. The applicable elements and their goals and polices are as follows:

Conservation Element

The Conservation Element focuses on practices that can ensure the long-term survival of resources that Kern River Valley residents enjoy and cherish. The Conservation Element

identifies goals, policies, and implementation measures to maintain resources in the Kern River Valley Area. The applicable goal and policies are as follows:

Air Quality

Policy 5.5.10: Create incentives for the use of domestic and commercial solar and wind energy uses to conserve fossil fuels and improve air quality.

Solar and Wind Energy

Goal 5.6.1: Promote use of solar and wind energy in Kern River Valley.

Policy 5.6.1: Encourage the use of domestic and commercial solar energy uses to conserve fossil fuels and improve air quality.

Public Facilities and Services Element

The Public Facility and Services Element describes the systems that must be maintained to ensure that existing residents and businesses have adequate service from public facilities and utilities. The goal and policy that are applicable to the proposed project are as follows:

Water Supply and Distribution

Goal 9.2.1: Support affordable coordinated, comprehensive, and reliable water supply systems and facilities capable of meeting both normal and dry year water demands.

Policy 9.2.1: Ensure that water purveyors provide sufficient water storage, treatment, and transmission facilities to meet the existing and projected water needs of the Kern River Valley, while emphasizing conservation goal.

Sustainability Element

The Sustainability Element focuses on reinforcing the goal to promote sustainable and strategic growth which utilizes energy and other resource-efficient practices. The goal and policy that are applicable to the proposed project are as follows:

General Sustainability

Goal 11.1.2: Encourage development to use alternative renewable energy sources and energy conservation and efficient measures.

Policy 11.1.8: Encourage agricultural practices that require reduced water demand and utilize the most efficient irrigation practices.

Kern County General Plan

The Kern County General Plan is a policy document with planned land use maps and related information designed to provide long-range guidance to County officials making decisions affecting development and the resources of the unincorporated Kern County jurisdiction (Kern County, 2009).

Energy Element

The Energy Element identifies goals, policies, and implementation measures to protect the Kern County's energy resources and encourage orderly energy development while affording the maximum protection for the public's health, safety, and the environment.

> **5.4.5 Policy 1:** The County shall encourage domestic and commercial solar energy uses to conserve fossil fuel and improve air quality.
>
> **5.4.5 Policy 3:** The County should permit solar energy development in the desert and valley planning regions that does not pose significant environmental or public health and safety hazards

3.15.3 Impact Analysis and Mitigation Measures

Significance Criteria

Refer to pages 3.15-1 and 3.15-2 above for a summary of the environmental issues and significance criteria included in this Draft EIR for the analyses of utilities, service systems, and energy. This Draft EIR assumes implementation of the proposed project would have a significant impact related to utilities, service systems, and energy if it would:

- Have a substantial effect on water supplies available to serve the adjacent land uses and communities, and associated local water suppliers from existing entitlements and resources.
- Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Methodology

Water Supplies

The methodology used to analyze the proposed project's potential impact on water supplies relies on the surface water and groundwater analyses provided in Section 3.11, Hydrology and Water Quality, which includes groundwater modeling to estimate the potential impacts of the proposed project to groundwater supplies. As stated in Section 3.11, setting information provided in this Environmental Setting comes from the *Hydrogeological Evaluation of the Onyx Ranch Project*, prepared by Thomas Harder & Co, and dated July 2019, which is provided in Appendix E Hydrogeological Technical Report to this Draft EIR.

Energy

The methodology used to analyze the proposed project's potential energy usage, including electricity, propane, and transportation fuels during implementation of the proposed project is provided below. Specific assumptions and data sources needed to quantify energy consumption during both field transition and maintenance are detailed in Appendix B Air Quality, Greenhouse Gases, and Energy to this Draft EIR.

Energy consumption during transition of irrigated fields and pastures to non-irrigated fields and pastures and maintenance of the proposed project would have similar sources and impacts. Therefore, the analysis discusses both project implementation and maintenance together. Energy consumption related to the proposed project would result from the reduced operation of the existing onsite electrical wells, construction of up to 12 shallow, low-volume wells powered by solar facilities and the transportation of cattle between pastures.

Electricity

The existing Pruitt well and Scodie well would continue to be used to the same extent as in the existing conditions to supply water to the Boone Field. The use of the other three existing electric wells would be reduced and anticipated to draw somewhere between 0 MWh per year and the current 1,029 MWh consumption. The proposed project would include the development of up to 12 shallow, low-volume wells powered by solar facilities to provide livestock water and improved livestock distribution for more effective use of the available forage. The analysis compares electrical consumption anticipated for the proposed project to existing energy consumption on the project site and SCE's annual consumption.

Propane

Propane is not expected to be consumed as a part of the proposed project. No facilities are being built that would require use of propane during construction or operation. Therefore, propane associated with the proposed project has not been quantified.

Transportation Fuels

Transportation fuels would be consumed for transportation of cattle from pasture to pasture when the cattle cannot be moved on foot. Currently there are 60 annual round trips associated with cattle transport with an average of 75 miles per trip. Currently, heavy duty diesel trucks are used to transport the cattle from one pasture to another. With operation and maintenance of the proposed project, the 60 annual round trips currently used to transport cattle would be reduced to 30, however the average distance traveled between pastures would remain the same. As such, there would be a 50 percent reduction in vehicle miles traveled for cattle transport. Fuel consumption from cattle hauling was estimated using EMFAC2017 (CARB, 2017). The analysis compares the fuel consumption of the project to both the statewide and existing conditions fuel consumption.

Impact Analysis

Water Supplies

Potential Impact UTIL-1: Would the proposed project have a substantial effect on water supplies available to serve the adjacent land uses and communities, and associated local water suppliers from existing entitlements and resources?

As discussed above in Section 3.15.1 Environmental Setting, (Surface Water Conditions), surface water in the Hydrological Study Area in the South Fork Valley is used as a source of irrigation water supply for farming and livestock. As discussed in Section 2.6, Water Rights and Proposed

Diversion, there are numerous water rights holders for surface water flows along the South Fork of the Kern River. This includes the water rights held by the RRBWSD for the project site. The proposed project would reduce irrigation on the project site and allow water that is currently diverted under existing conditions to stay in the South Fork of the Kern River and flow downstream into Isabella Reservoir, then the Lower Kern River, and then to the existing RRBWSD diversion structures and recharge basins for storage in their groundwater bank (Thomas Harder & Co., 2019; see Appendix E of this Draft EIR). No water supply associated with any other Kern River water rights holders would be affected or changed. Therefore, relative to surface water and implementation of the proposed project, there would be no change in surface water supplies available to serve adjacent land uses, communities, and local water suppliers. No impact on surface water supplies would occur. Therefore, relative to surface water, there would be no impact on water supplies available to serve adjacent land uses, communities, and local water suppliers in the South Fork Valley.

As discussed above in Section 3.15.1 Environmental Setting (Groundwater Conditions), groundwater in the Hydrological Study Area in the South Fork Valley is the source of drinking water and irrigation water. Groundwater levels are dynamic and fluctuate over space and time depending on inflows such as precipitation and infiltration and outflows such as pumping and discharges to surface water. As discussed in Section 3.11, Hydrology and Water Quality, and shown on Figure 3.11-5, based on the hydrogeological modeling of the proposed project, groundwater levels during periods of low groundwater conditions would increase in some portions of the Hydrological Study Area and decrease in others. An increase of up to approximately 4.1 feet would occur at Well 20N01 located about one mile from Isabella Reservoir. A decrease of approximately -5.9 feet would occur at the Onyx Ranch Headquarters domestic well. As shown on Figure 3.11-5, only two RRBWSD wells, both within the project site and along the northern side of the South Fork of the Kern River, would experience an estimated, temporary groundwater level decrease of up to 5 or more feet. All other wells, including those for the offsite community water systems, would experience temporary groundwater level decreases of less than 5 feet and may experience an increase in groundwater levels in areas farther away from the project site. Given that there will be such minor water level decreases of less than 5 feet during low groundwater conditions and that normal seasonal fluctuations are 10 to 20 feet, it is not anticipated that any existing groundwater wells would be prevented from accessing groundwater and likewise that pump performance (flow rate and pressure) fluctuations would be negligible and not noticeable to water users. Note that the wells that would experience the largest effect are owned by the RRBWSD.

As discussed in Section 3.11 Hydrology and Water Quality and shown on Figure 3.11-6, based on the hydrogeological modeling of the proposed project, groundwater levels during high groundwater conditions are predicted to increase in some portions of the Hydrological Study Area and decrease in others. This would include a temporary increase of up to approximately 2.9 feet at Well 20N01, located about one mile east of Isabella Reservoir and a temporary decrease of approximately 15.6 feet within the project site at the Nicoll Field – Old Ag Well, located about ½ mile north of Weldon. It is important to note that groundwater levels throughout the Kern River Valley Groundwater Basin would be up to tens of feet higher in the late rainy season and decreases in groundwater levels as a result of the proposed project would mean that groundwater

levels may not rise as high as they would in some areas without the project. Given that there would be such minor water level changes of +2.9 to -15.6 feet during high groundwater conditions and that normal seasonal fluctuations are 10 to 20 feet, it is not expected that any existing groundwater wells would be prevented from accessing groundwater and likewise that pump performance (flow rate and pressure) fluctuations would be negligible and not noticeable to water users. Note that the wells that would experience the largest effect are owned by the RRBWSD. As determined in Section 3.11 Hydrology and Water Quality, the impacts to groundwater levels at wells in the Hydrological Study Area would be less than significant.

There are 13 community water systems within the Hydrological Study Area (see Figure 3.11-5 and 3.11-6) that use groundwater as their drinking water supply. The maximum predicted project-related fluctuations in groundwater levels are in the vicinity of the Rainbird Valley Mutual Water Company in Weldon and the South Fork Elementary School Water System west of Weldon. Based on the hydrogeological-model predicted groundwater level changes at Wells 14J02 and 18M01 (see Figures 3.11-5 and 3.11-6), which are the wells closest to these community water systems, the maximum decrease in groundwater levels would be up to approximately 12 feet deeper relative to the existing conditions. However, the maximum fluctuation would occur when groundwater levels are highest throughout the South Fork Valley, which would be during the spring (i.e., rainy season) during periods of above-normal precipitation. This means that groundwater levels with the proposed project may not rise as high as they would without the proposed project, but would still rise. As previously discussed, given that there would be such minor water level changes and that normal seasonal fluctuations are 10 to 20 feet, it is not expected that any existing groundwater wells would be prevented from accessing groundwater and likewise that pump performance (flow rate and pressure) fluctuations would be negligible and not noticeable to water users. Note that the wells that would experience the largest effect are owned by the RRBWSD. During low groundwater level conditions when there would be an increased potential for affecting access to groundwater, Wells 14J02 and 18M01 may experience groundwater level fluctuations of up to about -2.0 and -1.3 feet, respectively. These temporary and seasonal decreases are negligible and would not be expected to prevent access to groundwater within these wells. Therefore, relative to groundwater, there would be a less than significant impact on groundwater supplies available to serve adjacent land uses, communities, and local water suppliers in the South Fork Valley.

In addition, as discussed in Section 3.11, Hydrology and Water Quality, the proposed project is predicted to result in a net increase of groundwater in storage across the Hydrological Study Area, as compared to the existing conditions. Comparison of the change in groundwater storage between the existing condition and the proposed project simulated over the 13-year model period estimates a net increase in groundwater storage from the current decrease in storage of -39,706 AF to an estimated smaller decrease in storage of -21,482 AF. Therefore, the proposed project would result in a beneficial effect by reducing loss of groundwater storage by approximately 18,224 AF. Therefore, relative to groundwater storage, there would be no impact on water supplies available to serve adjacent land uses, communities, and local water suppliers in the South Fork Valley.

Downstream of the Isabella Reservoir, the proposed project would result in additional flow in the Lower Kern River and the delivery of project-related water to the RRBWSD's service area. As stated in Chapter 2 Project Description, several entities have water rights or access to surface water via agreement along the Lower Kern River downstream of the Isabella Dam, including the City of Bakersfield, Olcese Water District, North Kern Water Storage District, Kern Delta Water District, Buena Vista Water Storage District, and Kern County Water Agency (Kern River Interests). In addition, the RRBWSD receives Kern River water from the City of Bakersfield and other Kern River Interests through contractual arrangements. As explained in Section 3.11 Hydrology and Water Quality, with implementation of the proposed project, based on the 13-year model period of 2005 to 2017, it is estimated that an average of 7,265 net AFY of redirected flows from the Onyx Ranch and the Smith Ranch would result in an average of 6,014 net AFY of new water flowing through the Isabella Reservoir and the Isabella Dam and into the Lower Kern River. The difference, which amounts to a 17 percent "no injury factor," accounts for model-estimated losses that are anticipated to occur between Onyx Ranch and Isabella Reservoir as a result of the proposed project. These losses are associated with increased streambed infiltration, evapotranspiration, and subsurface outflow. Therefore, up to 6, 014 AFY of water on average for the model period could be released out of Isabella Reservoir without injury to other legal users. In addition, Project Element 5 of the proposed project discussed in Chapter 2 Project Description of this Draft EIR consists of coordination with the USACE, Kern River Watermaster, and the Kern River Interests to release the surface water from the project site through the Isabella Dam and ensure it is not diverted by others between the Isabella Dam and the existing diversion points in the RRBWSD service area. The RRBWSD would coordinate with the Lower Kern River Interests to address scheduling releases and computing any losses between the Isabella Reservoir and the existing RRBWSD diversion points within its service area. With implementation of the proposed project, there would be no impact on water supplies available to serve the existing water rights and entitlements of the Kern River Interests.

In addition, proposed project would result in the delivery of Kern River water to existing recharge facilities in the RRBWSD service area, which would have a beneficial impact to groundwater supplies in the RRBWSD service area and the Kern County Sub-basin.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- Implementation of the proposed project would result in no change in surface water supplies available to serve adjacent land uses, communities, and local water suppliers in the South Fork Valley. No impact on surface water supplies would occur in the South Fork Valley.
- With implementation of the proposed project, the maximum predicted offsite project-related seasonal fluctuation in groundwater levels would be negligible relative to normal seasonal fluctuations in the Hydrological Study Area. It is not expected that existing groundwater

wells adjacent to the project site would be prevented from accessing groundwater and likewise that pump performance (flow rate and pressure) fluctuations would be negligible and not noticeable to water users. Therefore, there would be a less than significant impact on groundwater supplies available to serve adjacent land uses, communities, and local water suppliers in the South Fork Valley.

- Implementation of the proposed project is predicted to result in a net increase of groundwater in storage across the Hydrological Study Area, as compared to the existing conditions. The existing decrease in groundwater storage is estimated to be -39,706 AF and, the groundwater storage with the proposed project, is estimated to be -21,482 AF. Therefore, the proposed project would result in a beneficial effect by reducing loss of groundwater storage by approximately 18,224 AF. Therefore, relative to groundwater storage, there would be no impact on water supplies available to serve adjacent land uses, communities, and local water suppliers in the South Fork Valley.
- With implementation of the proposed project, based on the 13-year model period of 2005 to 2017, it is estimated that an average of 6,014 net AFY of new water would flow through the Isabella Dam and into the Lower Kern River. This represents a 17 percent "no injury factor" that accounts for model-estimated losses that are anticipated to occur between Onyx Ranch and Isabella Reservoir as a result of the proposed project. The RRBWSD would coordinate with the Kern River Interests to address scheduling releases and compute any losses between the Isabella Dam and the existing RRBWSD diversion points at their spreading basins. There would be no impact on water supplies available to serve the existing water rights and entitlements of the Kern River Interests.

Energy Consumption

Potential Impact ENERGY-1: Would the proposed project result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?

Energy consumption related to the proposed project would result from operation of the existing onsite electrical wells, transportation of cattle between pastures, and construction of the up to 12 shallow, low-volume wells powered by solar facilities.

With implementation of the proposed project, energy consumption from the five existing onsite non-solar electrical wells on the project site are anticipated to be reduced. Annual electrical usage would range from 74 MWh to 1,029 MWh. This is less than 0.001 percent of SCE's annual consumption and between 7 and 100 percent of existing energy consumption on the project site. Additionally, the proposed project would install up to 12 shallow, low-volume wells powered by solar facilities to provide livestock water and improved livestock distribution for more effective use of the available forage. Energy consumption from public energy sources would not increase because the wells would be solar powered and not connected to the electrical grid.

With implementation of the proposed project, cattle transport would result in diesel fuel consumption based on 30 round trips per year, which would be a 50 percent reduction based on existing conditions of 60 round trips per year. Annual diesel fuel consumption associated with the

proposed project would be approximately 689 gallons per year, which is less than 0.0001 percent of State consumption and half of the consumption for the existing conditions.

Construction of the proposed 12 shallow, low-volume wells powered by solar facilities on the project site would require diesel fuel and gasoline. Construction equipment, such as a drill rig, that would be used short-term for the well construction would be operated by diesel fuel and, therefore, would result in additional consumption of energy during well construction. Gasoline would be consumed during worker commutes to the project site. However, the wells would be provided on an as needed basis. In the event that all 12 wells would be constructed at the same time, due to the short duration of construction (approximately 36 total days for 12 wells to be constructed), the energy consumption associated with all wells constructed simultaneously would be minimal. These construction activities would result in the consumption of approximately 2,768 gallons of diesel fuel and 210 gallons of gasoline.

Overall, energy consumption would not increase during operation of the proposed project and would potentially decrease due to fuel reduction from cattle transport and the reduced operation of the five existing wells. Energy consumption during construction of the 12 shallow, low-volume wells powered by solar facilities on the project site would be minimal, as discussed above. Annual electrical usage would range from 74 MWh to 1,029 MWh, which is less than 0.001 percent of SCE's annual consumption. Therefore, implementation of the proposed project would not result in the wasteful, inefficient, and unnecessary consumption of energy. The impact would be less than significant.

In addition, as discussed above for Potential Impact UTIL-1, although groundwater levels with the proposed project may not rise as high as they would without the proposed project, given that there would be minor water level impacts of less than -5 feet during low groundwater conditions and +2.9 to -15.6 feet during high groundwater conditions, with normal seasonal fluctuations from 10 to 20 feet, it is not expected that any existing groundwater wells would be prevented from accessing groundwater and likewise that pump performance (flow rate and pressure) fluctuations would be negligible and not noticeable to water users. With implementation of the proposed project, the change in energy consumption by the existing groundwater wells adjacent to the project site would also be minor and within the normal seasonal fluctuations. Therefore, energy consumption impacts would be less than significant.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- Energy consumption would not increase during operation of the proposed project. Energy consumption during construction of the 12 shallow, low-volume wells powered by solar facilities would be minimal (2,768 gallons of diesel fuel and 210 gallons of gasoline). Therefore, the implementation of the proposed project would not result in the wasteful,

inefficient, and unnecessary consumption of energy. The impact would be less than significant.

- With implementation of the proposed project, the change in energy consumption by existing groundwater wells adjacent to the project site would also be minor and within the normal seasonal fluctuations. Therefore, energy consumption impacts would be less than significant.

Energy Efficiency

Potential Impact ENERGY-2: Would the proposed project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

CALGreen and Title 24

The proposed project would not provide any development that would be subject to the CALGreen building standards or Title 24. Therefore, implementation of the proposed project would not conflict with the implementation of CALGreen or Title 24. No impact would occur.

Kern River Valley Specific Plan

The Kern River Valley Specific Plan's Conservation Element promotes the use of solar and wind energy over conventional energy sources. The proposed project would support these goals and policies with the installation of 12 shallow, low-volume wells powered by solar facilities on the project site and the reduction in use of the existing electric wells. No impact would occur.

The proposed project would not conflict with or obstruct implementation of a State or local plan for renewable energy or energy efficiency. No impact would occur.

Mitigation Measures

None required.

Significance Determination

No Impact

Impact Summary

- The proposed project would not conflict with the implementation of CALGreen or Title 24. No impact would occur.
- The proposed project would support the goals and policies of the Kern River Valley Specific Plan related to use of solar energy and energy conservation. No impact would occur.
- The proposed project would not conflict with or obstruct implementation of a State or local plan for renewable energy or energy efficiency. No impact would occur.

Potential Cumulative Impacts

This section presents an analysis of the cumulative effects of the proposed project in combination with other past, present, and reasonably foreseeable future projects that could cause cumulatively considerable impacts. Cumulative projects are listed in Table 3-2 in Section 3.2, Cumulative Impacts Methodology. Locations are shown in Figure 3-1.

Water Supply

The only cumulative project with the potential to affect surface water supplies or groundwater supplies in the Hydrological Study Area is Cumulative Project D, Weldon Regional Water District. Cumulative Project D is the formation of a new California Water District in the unincorporated community of Weldon that would consolidate the following five local water purveyors: Long Canyon Water Company, Tradewinds Water Association, Bella Vista Mutual Water Company, Lake Isabella KOA, and Rainbird Valley Mutual Water Company. The new Water District's proposed service area boundary includes 611 agricultural, commercial, and residential parcels (Tom Dodson & Associates, 2020). As stated in the MND adopted for the new Water District, Cumulative Project D would abandon and destroy three existing groundwater wells and construct two new groundwater wells, and is not anticipated to extract a significantly greater amount of groundwater as a result of the consolidation of the existing water purveyors (Tom Dodson & Associates, 2020). Cumulative Project D would have sufficient water supplies available to serve the project from existing entitlements, and no new or expanded entitlements are required.

As discussed above, the proposed project would have no impact to surface water supplies, would not be anticipated to prevent any existing groundwater wells in the South Fork Valley or Hydrological Study Area from accessing groundwater, or otherwise affect pump performance. Therefore, the proposed project, when considered together with Cumulative Project D, would not result in significant cumulative impacts to water supply.

Energy

The only cumulative project with the potential to affect energy consumption or supply in the Kern River Valley is Cumulative Project D, Weldon Regional Water District. Cumulative Project D would distribute water to customers within the new Weldon Regional Water District and would employ up to 20 persons in support of the new Water District (Tom Dodson & Associates, 2020). The new Water District would be supplied power from SCE to each of the well sites and tank sites, and emergency backup generators would also be installed at each site. As stated in the MND adopted for the new Water District, Cumulative Project D is not anticipated to require a significant amount of electricity and would not result in wasteful, inefficient, or unnecessary energy consumption. Cumulative Project D would have less than significant impacts to energy (Tom Dodson & Associates, 2020).

As discussed above, the implementation and operation of the proposed project would result in similar or reduced consumption of electricity and transportation fuels relative to the existing conditions. Given the minimal energy consumption compared to State consumption as well as the reduction from the consumption in the existing conditions, the proposed project, when considered

together with Cumulative Project D, would not result in a cumulatively considerable impact. The proposed project would result in a less than significant cumulative impact related to energy.

Mitigation Measures

None required.

Significance Determination

Less than Significant Impact

Impact Summary

- None of the cumulative projects would have adverse effects to surface water or groundwater supplies within the South Fork Valley or the Hydrological Study Area defined for the proposed project. Therefore, when considered together with the cumulative projects, the proposed project would not result in cumulatively considerable impacts related to water supply.
- None of the cumulative projects would have adverse effects to energy in the Kern River Valley. Therefore, when considered together with the cumulative projects, the proposed project would not result in cumulatively considerable impacts related to energy.

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CHAPTER 4
Growth Inducement

4.1 Overview

The California Environmental Quality Act (CEQA) Guidelines (Section 15126.2(d)) require that an EIR discuss the potential growth-inducing impacts of a proposed project. The CEQA Guidelines provide the following guidance for such discussion:

> *Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*

A project can have direct and/or indirect growth-inducement potential. Direct growth inducement would result if a project involves construction of new housing. A project can have indirect growth-inducement potential if it establishes substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or if it involves a construction effort with substantial short-term employment opportunities that indirectly stimulates the need for additional housing and services to support the new employment demand. Similarly, under CEQA, a project would indirectly induce growth if it removes an obstacle to additional growth and development, such as removing a constraint on a required public service.

Water storage and supply is one of the primary public services needed to support growth and community development. While water supply plays a role in supporting growth, it is not the single determinant of such growth. Other factors, including general plan policies, land use plans, and zoning, the availability of wastewater treatment and solid waste disposal capacity, public schools, transportation services, and other essential public infrastructure, also influence business and residential population growth. Economic factors, in particular, greatly affect development rates and locations.

Growth inducement itself is not necessarily an adverse environmental impact. It is the potential consequences of growth, the secondary effects of growth, which may result in environmental

impacts. Potential secondary effects of growth include increased demand on other public services; increased traffic and noise; degradation of air quality; loss of plant and animal habitats; and the conversion of agriculture and open space to developed uses. Growth inducement may result in adverse impacts if the growth is not consistent with the land use plans and growth management plans and policies for the area, as "disorderly" growth could indirectly result in additional adverse environmental impacts. Thus, it is important to assess the degree to which the growth accommodated by a project would or would not be consistent with applicable land use plans.

As stated in Chapter 2 Project Description, the proposed project would change the points of diversion and place of use for Rosedale-Rio Bravo Water Storage District's (RRBWSD's) water rights associated with the Onyx Ranch and Smith Ranch parcels so that the water can be delivered to the RRBWSD service area on the San Joaquin Valley floor and used for irrigation and groundwater recharge. As such, this chapter evaluates the potential for the proposed project to induce growth in the RRBWSD's service area. This chapter reviews the population growth projections for the RRBWSD service area and describes the existing and projected water demand and water supply conditions. It provides a description of the RRBWSD's role in providing water to customers within their service area and evaluates the potential for the proposed project to induce growth.

4.2 Population

This section presents population growth encompassing the RRBWSD's service area in around the City of Bakersfield in Kern County. This discussion uses the RRBWSD's service area as the population setting because the water supply associated with the proposed project would be used within the RRBWSD's service area. The RRBWSD service area consists predominately of rural agricultural land uses. Eastern portions of the RRBWSD are within the Metropolitan Bakersfield Planning Area within the designated City of Bakersfield Sphere of Influence (SOI) and are experiencing development and population growth. Based on the Kern Council of Governments (COG) most recent Regional Transportation Plan (RTP), the population in Metropolitan Bakersfield grew by 10,093 persons, or 2.6 percent annually, from the years 1980 to 2017, resulting in the estimated 598,900-person population in 2017. The total population for the City of Bakersfield in 2017 was 383,512, approximately 64 percent of the Metropolitan Bakersfield Planning Area (Department of Finance, 2018). The RTP projects that the population in Metropolitan Bakersfield will continue to grow by 13,651 people-per-year, or at a reduced rate of 1.8 percent annually, from the years 2017 to 2042. These growth rate projections for 2042 would result in Metropolitan Bakersfield increasing to a population of 764,900 by 2030 and 947,000 by 2042 (Kern COG, 2018).

4.3 Water Supply and Demand

This section presents the RRBWSD's relationship to water supply availability. Currently, the RRBWSD service area contains approximately 44,000 acres of land, of which approximately 27,500 acres are utilized for irrigated agriculture and approximately 7,500 acres are developed for residential, commercial and industrial uses. The urban development is primarily located in the eastern end of the RRBWSD's service area and is anticipated to increase as the city develops to

the west (RRBWSD, 2019a). Water use in the RRBWSD varies from year to year depending on the crops that are grown and the amount of land that remains fallow. However, as more permanent crops are grown and more land is converted to urban development, the fluctuations in water use have become less pronounced (RRBWSD, 2013).

In 1966, the RRBWSD entered into long-term contracts for delivery of surface water supplies from the Kern River and the State Water Project (SWP) with the Kern County Water Agency and short-term contracts for water from the Friant Kern Canal (which is part of the U.S. Bureau of Reclamation Central Valley Project) (RRBWSD, 2013). RRBWSD's long-term contract with the Kern County Water Agency is for 34,900 AFY from the SWP. However, the amount of SWP water delivered to the RRBWSD has been significantly diminished to a long-term average of approximately 60 percent of the contracted amount due to environmental and legal restrictions on pumping water from the Sacramento-San Joaquin Delta. As a result, the RRBWSD SWP supplies currently make up approximately 25 percent of the RRBWSD water supply portfolio. The Kern River Agreement with owners of interest in the waters of the Kern River contributes 10,000 AFY to the RRBWSD water supply. The combination of the Kern River Agreement and another long-term contract for rights to purchase Miscellaneous Quantity Water from the City of Bakersfield (comprised of surplus Kern River Water not needed by the City to satisfy its other obligations) accounts for approximately 17 percent of the RRBWSD water supply portfolio. Temporary contracts with the Bureau of Reclamation for the Friant-Kern floodwaters, Kern River flood flows, spot-market water purchases, beneficial rainfall, and the groundwater basin-safe yield make up approximately 44 percent of the RRBWSD water supply portfolio (RRBWSD, 2019b).

Water used for irrigation within the RRBWSD's service area is primarily obtained from groundwater pumping, although about 10,000 to 15,000 AFY of surface water is delivered by RRBWSD to landowners for use during wet years. Consumptive use within the RRBWSD is currently estimated to be about 93,000 AFY, including the consumptive use of precipitation (RRBWSD, 2013, 2018). For the period from 1993 through 2011, the average annual consumptive use has been estimated to be about 92,000 AFY. Table 4-1 summarizes consumptive use within the RRBWSD service area since 1976. As shown in the table, average urban use has doubled since 1990 as crop use has been decreased slightly. This trend is expected to continue.

TABLE 4-1
HISTORIC CONSUMPTIVE USE WITHIN THE RRBWSD
(AVERAGE AFY)

Period	Crop Use	Urban Use	Subtotal
1976-1990	86,968	3,772	90,740
1991-2005	84,311	6,920	91,231
1993-2011	--	--	92,000
2012	84,500*	8,500	93,000
1995-2017	84,500	8,000	92,500

* Includes crop use plus fallow and undeveloped land use.
SOURCE: Rosedale Rio-Bravo Water Storage District, 2013; Rosedale-Rio Bravo Water Storage District, 2018.

4.4 Growth-Inducement Potential

The purpose of the proposed project is to enable the RRBWSD to change the points of diversion and place of use of the surface water on the Onyx and Smith Ranches in order to move the water downstream for diversion and use in the RRBWSD's service area. Implementation of the proposed project would not have direct growth inducement effects, as it does not propose development of new housing, either in the Kern River Valley or the RRBWSD service area, that would attract additional population. Nor would the project build or extend roads or other any other essential utility infrastructure that could indirectly induce growth. Furthermore, implementation of the proposed project would not result in permanent or short-term employment that would indirectly stimulate the need for additional housing and services to support the new employment demand. In fact, as identified in Section 3.13 Population and Employment, employment may be slightly reduced as a result of the project. Therefore, the proposed project would not indirectly induce population growth by establishing new employment opportunities or housing to accommodate such employees.

Based on the 13-year modeled period of 2005 to 2017, the proposed project would make approximately 2,000 to 12,000 AFY available for recharge into the San Joaquin Valley Groundwater Basin (groundwater basin). As stated in Section 2.4 Project Objectives, the proposed project would allow the RRBWSD to utilize the water rights associated with the Onyx Ranch and Smith Ranch to maximize groundwater replenishment in the Kern County Sub-basin within the RRBWSD service area and assist the RRBWSD with meeting its sustainability goals under SGMA. One of the objectives of the proposed project is to reduce reliance on imported water from the Sacramento/San Joaquin Delta via the SWP, which has become unreliable due to environmental restrictions in the Delta. As discussed in Section 4.3 above, the RRBWSD has been receiving a reduced long-term average of approximately 60 percent of the contracted amount of SWP water. This reduction equals approximately 10,000 AFY. The approximately 2,000 to 12,000 AFY to be supplied by the proposed project would help replace the 10,000 AFY of imported water, thereby augmenting the groundwater basin with a sustainable local supply. The project therefore provides water supply reliability to the RRBWSD through increased used of local water supplies.

The RRBWSD does not have the authority to make land use decisions to halt or alter growth and development patterns or approvals, nor does it have the authority to address any of the potential significant, secondary effects of planned growth. Authority to implement those measures lies with the County of Kern, the City of Bakersfield, and other local and communities. The proposed project would reduce the reliance on Delta water and offset the use of imported water with a local water supply for RRBWSD's landowners and customers. Increased groundwater storage as part of the proposed project may support planned population growth by Kern County that has been identified within the RRBWSD service area. Although, as shown above in Table 4-1, in recent years only about 8 percent to 9 percent of total consumptive use of water supplies within the RRBWSD service area is for urban use. As stated in Chapter 2 Project Description, Section 2.4 Project Objectives of this Draft EIR, RRBWSD's mission is to "acquire surface water supplies for the preservation of water levels and quality throughout the district to ensure an affordable and sustainable water supply for all landowners." The landowners within the RRBWSD's service area

are predominantly agricultural and require water for irrigation purposes. Therefore, the proposed project would not remove any obstacles to growth and would not indirectly have a significant impact on growth inducement. As a result, impacts to growth inducement would be less than significant.

4.5 References

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CHAPTER 5
Alternatives Analysis

5.1 Introduction

5.1.1 CEQA Requirements

According to the California Environmental Quality Act (CEQA), an Environmental Impact Report (EIR) must describe a reasonable range of alternatives to a proposed project that would feasibly attain most of the basic project objectives and would avoid or substantially lessen any of the proposed project's significant environmental effects. Section 15126.6(f) of the CEQA Guidelines provides direction on the required alternatives analysis:

> *The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.*

The alternatives may include a different type of project, modification of the project, or suitable alternative project sites. An EIR need not consider every conceivable alternative to a project. Rather, the alternatives must be limited to ones that meet the project objectives, are feasible, and would avoid or substantially lessen at least one of the significant environmental effects of the project. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. Section 15126.6(b) of the CEQA Guidelines states an EIR:

> *…must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly.*

Section 15126.6(d) of the CEQA Guidelines provides further guidance on the extent of the alternatives analysis required:

> *The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A*

> *matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.*

The EIR must briefly describe the rationale for selection and rejection of alternatives and the information the lead agency relied on when making the selection. It also should identify any alternatives considered but rejected as infeasible by the lead agency during the scoping process and briefly explain the reasons for the exclusion. Alternatives may be eliminated from detailed consideration in the EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid any significant environmental effects.

Section 15126.6(e) (1) of the CEQA Guidelines also requires that the No Project Alternative must be addressed in this analysis. The purpose of evaluating the No Project Alternative is to allow decision-makers to compare the potential consequences of the proposed project with the consequences that would occur without implementation of the proposed project.

Finally, an EIR must identify the environmentally superior alternative. The No Project Alternative may be the environmentally superior alternative to the proposed project based on the minimization or avoidance of physical environmental impacts. CEQA Guidelines (Section 15126.6(e)(2)) requires that, if the environmentally superior alternative is the No Project Alternative, the EIR shall identify an environmentally superior alternative among the other alternatives.

5.1.2 Project Objectives

As explained above in Section 5.1.1, based on the CEQA Guidelines, several factors need to be considered in determining the range of alternatives to be analyzed in this Draft EIR and the level of analytical detail that should be provided for each alternative. Those factors include the ability of the alternatives to meet the objectives of the proposed project. As stated in Chapter 2 Project Description of this Draft EIR, the objectives of the proposed project are as follows:

- Maximize the beneficial use of water rights associated with the Onyx Ranch and Smith Ranch in Kern County.
- Reduce dependence upon the imported water from the Sacramento/San Joaquin Delta (Delta) and provide a cost-effective, long-term method to replace a portion of the RRBWSD's contracted State Water Project (SWP) water supply that has become unreliable due to environmental restrictions in the Delta.
- Allow the RRBWSD to utilize the water rights associated with the Onyx Ranch and the Smith Ranch to maximize groundwater replenishment in the Kern County Sub-basin within the RRBWSD service area and assist RRBWSD with meeting its sustainability goals under SGMA.
- Increase water flows in the South Fork of the Kern River within existing habitat areas when consistent with water supply objectives.

- Incorporate project elements and project characteristics that address potential environmental effects on visual aesthetics, air quality, cultural resources, sensitive biological resources, water supply, and water quality.
- Include project elements that avoid:
  - Unreasonably affecting fish, wildlife, or other in-stream beneficial uses.
  - Unreasonably affecting the overall economy or environment of the South Fork Valley as well as the Kern River Valley.
  - Injuring any legal users of the waters of the South Fork of the Kern River.

5.1.3 Environmental Impacts of the Proposed Project

As explained above in Section 5.1.1, based on the CEQA Guidelines, several factors need to be considered in determining the range of alternatives to be analyzed in this Draft EIR and the level of analytical detail that should be provided for each alternative. Those factors include the nature of the significant impacts of the proposed project and the ability of alternatives to avoid or lessen the significant impacts associated with the proposed project.

Chapter 3 of this Draft EIR identifies the potential impacts associated with implementation of the proposed project, including short-term and long-term impacts. Mitigation measures are provided to reduce the identified potential significant impacts to a less than significant level. Therefore, no significant and unavoidable impacts would result from implementation of the proposed project. A summary of the significance of the impacts for each environmental topic analyzed in Chapter 3 is presented below in Table 5-1. The significant impacts of the proposed project and the mitigation measures to be incorporated to reduce the potential significant impacts to a less than significant level are provided in Table ES-1 in the Executive Summary of this Draft EIR.

TABLE 5-1
SUMMARY OF PROPOSED PROJECT IMPACT ANALYSIS

Environmental Resource	Proposed Project Significance Determination
Aesthetics	LTS
Agriculture	LTS
Air Quality	LTS
Biological Resources	LTSM
Cultural Resources	LTSM
Geology and Soils	LTSM
Greenhouse Gas Emissions	LTS
Hazards and Hazardous Materials	LTS
Hydrology and Water Quality	LTS
Land Use and Planning	LTS
Population and Employment	LTS
Tribal Cultural Resources	LTS
Utilities, Service Systems, and Energy	LTS

NOTES:
LTS = Less than Significant
LTSM = Less than Significant with Mitigation

5.2 Alternatives Considered and Rejected

As explained above in Section 5.1.1, based on the CEQA Guidelines, several factors are considered in determining the range of alternatives to be analyzed in this Draft EIR and the level of analytical detail that should be provided for each alternative. Those factors include the feasibility of the alternatives.

The CEQA Guidelines Section 15126.6(c) recommends that an EIR identify alternatives that were considered for analysis but rejected as infeasible and briefly explain the reasons for their rejection. According to the CEQA Guidelines, the following factors may be used to eliminate alternatives from detailed consideration: the alternative's failure to meet most of the basic project objectives; the alternative's infeasibility; or the alternative's inability to avoid significant environmental impacts.

The RRBWSD may make an initial determination as to which alternatives are potentially feasible and, therefore, merit in-depth consideration, and which are clearly infeasible. Alternatives that are remote and speculative, or the effects of which cannot be reasonably predicted, need not be considered (CEQA Guidelines Section 15126.6(f)(3)). Alternatives that have been considered and rejected as infeasible are discussed below.

5.2.1 Alternative Locations

CEQA Guidelines Section 15126.6(f)(2) provides guidance regarding consideration of one or more alternative location(s) for a proposed project, stating that putting the proposed project in another location should be considered if doing so would allow significant effects of the proposed project to be avoided or substantially lessened. Only locations that would avoid or substantially lessen any of the significant effects of the proposed project need to be considered for inclusion in the EIR. If no feasible alternative locations exist, the EIR must disclose the reasons for this conclusion. Among the factors that may be considered when addressing the feasibility of an alternative site is suitability, economic viability, availability of infrastructure, general plan consistency, and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site.

The proposed project's location is critical to implementation of the project objectives for several reasons. The proposed project requires access to a conveyance mechanism to carry water from the project site to the RRBWSD's existing infrastructure within its service area. While other conveyance options were considered by the RRBWD, such as existing canal systems as well as new canals and pipelines, the South Fork of the Kern River and the Kern River presented the best conveyance option with the least amount of additional conveyance infrastructure required. The parcel or parcels used for the proposed project, therefore, needs to be located along or adjacent to the South Fork of the Kern River or the Kern River.

Additionally, the proposed project's location requires a parcel or parcels with water rights, as well as a parcel or parcels that are large enough to have associated water rights for the amount of surface water needed to address the purpose of the proposed project to be feasible. While other parcels exist within Kern County that are near water conveyance infrastructure such as the South

Fork of the Kern River or the Kern River, most parcels do not have pre-1914 water rights associated with the land in a quantity that provides for an adequate amount of surface water to meet the objective of the proposed project to reduce dependence upon the imported water from the Sacramento-San Joaquin Delta and provide a cost-effective, long-term method to replace a portion of the RRBWSD's contracted SWP water supply that has become unreliable due to environmental restrictions in the Delta.

Due to the need for access to a unique conveyance mechanism, the required acreage, and the water rights criteria, no other feasible alternative location to the location of the proposed project could be identified or were available for acquisition with terms that would meet the project objectives. As a result, an alternative site location for the proposed project is rejected as infeasible and failure to meet a basic project objective and, therefore, the Alternative Locations is rejected from further consideration in this analysis.

5.2.2 Delta Conveyance Project Alternative

The Department of Water Resources (DWR) is undertaking an environmental review and planning process for a single-tunnel solution to modernize the Sacramento-San Joaquin Delta conveyance (DWR, 2020). This project was introduced by Governor Newsom in Executive Order N-10-19 on February 12, 2019. The Sacramento-San Joaquin Delta Conveyance Project (Delta Conveyance Project) is proposed to replace previous efforts that included a two-tunnel proposal (DWR, 2019). The environmental review process for the single-tunnel Delta Conveyance Project began with issuance of the Notice of Preparation of an Environmental Impact Report on January 15, 2020. The Delta Conveyance Project would develop new diversion and conveyance facilities in the Delta necessary to restore and protect the reliability of SWP water deliveries and, potentially, Central Valley Project (CVP) water deliveries south of the Delta (DWR, 2020). The project would involve construction and operation of new intake facilities on the Sacramento River, new conveyance facilities to transport water to the south Delta, associated forebays and a pumping plant, and south Delta conveyance facilities. Previous construction estimates indicated the project would be built in 13 years (The Press, 2019). The environmental review and permitting process for the Delta Conveyance Project is anticipated to take up to three years to complete (DWR, 2019), which, given the current schedule, would not be completed until 2023. Given the previous 13-year construction timeline and potential project delays, it is anticipated that the Delta Conveyance Project would be constructed by 2036 or later.

As discussed in Chapter 4 Growth Inducement of this Draft EIR, in 1966, the RRBWSD entered into long-term contracts for delivery of surface water supplies from the Kern River and the SWP with the Kern County Water Agency and short-term contracts for water from the Friant Kern Canal (which is part of the U.S. Bureau of Reclamation CVP) (RRBWSD, 2013). The RRBWSD's long-term contract with the Kern County Water Agency is for 34,900 AFY from the SWP. However, the amount of SWP water delivered to the RRBWSD has been significantly diminished to a long-term average of approximately 60 percent of the contracted amount due to environmental and legal restrictions on pumping water from the Sacramento-San Joaquin Delta. The RRBWSD SWP supplies currently make up approximately 25 percent of the RRBWSD water supply portfolio.

As a result of the water delivery limitations from the Delta, one of the stated objectives of the proposed project is to reduce dependence upon the imported water from the Sacramento-San Joaquin Delta and provide a cost-effective, long-term method to replace a portion of the RRBWSD's contracted SWP water supply that has become unreliable due to environmental restrictions in the Delta. However, as an alternative to the proposed project, the Delta Conveyance Project would involve construction and operation of facilities that could reliably transport water via the SWP and CVP infrastructure, from which the RRBWSD receives a portion of its water supply. The Delta Conveyance Project could provide water for recharge into the Kern County Sub-basin as an alternative to the proposed project. However, the RRBWSD cannot sufficiently rely on SWP or CVP water supplied by the Delta Conveyance Project to substitute the water generated by the proposed project. The RRBWSD needs approximately 11,500 AFY on-line by the year 2025 to meet its SGMA objectives (RRBWSD, 2019). Given the length of time expected to complete environmental review, permitting, and construction (up to 16 years in the year 2036), the Delta Conveyance Project is not a feasible alternative from a schedule implementation standpoint. As a result, the Delta Conveyance Project Alternative would not meet the project objective to reduce dependence upon the imported water from the Sacramento-San Joaquin Delta as stated above.

The previous two-tunnel iteration of the Delta Conveyance Project included significant and unavoidable impacts to groundwater, water quality, soils, fish and aquatic resources, land use, agriculture, recreation, aesthetics, cultural resources, transportation, public service and utilities, air resources, noise, hazards and hazardous materials, minerals, and paleontological resources (DWR, 2017). It is reasonable to assume that the environmental review conducted for the new single-tunnel Delta Conveyance Project would result in similar significant environmental impacts. With incorporation of mitigation measures, the proposed project would not result in any significant and unavoidable impacts. Therefore, the Delta Conveyance Project Alternative would not effectively reduce any significant impacts of the proposed project.

Since this alternative would not reduce any significant impacts of the proposed project, is infeasible from a schedule implementation standpoint, and does not meet the most basic project objective, the Delta Conveyance Project Alternative is rejected from further consideration in this analysis.

5.2.3 Commercial Use Alternative

The Commercial Use Alternative would include development of the project site (specifically the Onyx Ranch portion of which the RRBWSD has full ownership) for a commercial use other than agriculture as intended with the proposed project. One option for the Commercial Use Alternative is installation of solar panels on a portion of the Onyx Ranch, similar to what was proposed in 2010 by the applicant Renewable Resources (Kern County, 2010). Another option for the Commercial Use Alternative is installation of tourism-based commercial development (e.g., guest ranch or resort) with the intention of generating income from the operation of a tourism-based commercial development. For these two commercial options, RRBWSD would maintain water rights and sell the development rights for the parcels that make up the Onyx Ranch.

Irrespective of the development type, the Commercial Use Alternative would involve large-scale development of the project site. If solar panels would be installed, earthmoving activities such as grading and trenching would be required. Access roads and concrete would be installed along with the solar panels, underground electrical infrastructure, and a transformer (Kern County, 2010). If a tourism-based commercial development would be chosen, more extensive ground disturbance would be required, such as excavation for building foundations and supporting utilities such as water, wastewater, and electricity. In either case, a zoning amendment would be needed for the areas zoned for A-1 (Limited Agriculture) to be consistent with the Kern River Valley Specific Plan Land Use Designations.

Depending on the kind of development chosen for this alternative, some of the project objectives may be met. If the project site is used for solar development, a small amount of water would be required onsite for solar panel maintenance. Similar to the proposed project, based on water rights, this alternative would allow the remaining water to be left in the South Fork of the Kern River, flow to the Isabella Reservoir, and be released through the Isabella Dam to the Lower Kern River where it would be diverted to the RRBWSD's service area for groundwater recharge in the Kern County Sub-basin. If a tourism-based commercial development alternative is constructed, it is assumed that substantial amounts of water would be required to serve the demand of the occupied development and this demand would be addressed with groundwater pumping on the project site. Similar to the proposed project, this would allow for the surface water to remain in the South Fork of the Kern River and ultimately flow to the diversion points for the RRBWSD service area. For either commercial development option, the project objectives involving maximization of the use of water rights, reducing dependence on SWP water, and increased flows in the South Fork of the Kern River within existing habitat areas, would be met.

If either option of the Commercial Use Alternative is implemented, the environmental impacts associated with construction and operation would be greater than those associated with the proposed project. Due to the amount of ground disturbance and the reduction of surface water that would occur in the agricultural ditches and agricultural fields on the project site, this alternative would result in significant impacts to biological resources, cultural resources, and paleontological resources that could be greater than the impacts of the proposed project. With incorporation of Mitigation Measures BIO-1 through BIO-4, CUL-1 through CUL-3, and GEO-1, the proposed project would not result in any significant and unavoidable impacts. Therefore, the Commercial Use Alternative would not effectively reduce any significant impacts when compared to the proposed project.

This alternative would result in increased air emissions, greenhouse gas emissions, noise levels, and employee traffic during construction that would not be impacts of the proposed project. Additionally, as a result of the zone change and conversion of agricultural land to a commercial use, there would be impacts to aesthetics, agriculture, land use, population and employment, and long-term traffic that would not be impacts of the proposed project.

Since the Commercial Use Alternative would not meet all of the project objectives, would not reduce any significant environmental impacts of the proposed project, and would result in

additional impacts that would not be impacts of the proposed project, this alternative is rejected from further consideration in this analysis.

5.3 Alternatives Analysis

As described above, according to CEQA Guidelines Section 15126.6(a), the purpose of analyzing project alternatives is to identify alternatives that "…would avoid or substantially lessen any of the significant effects of the project." Based on the analysis contained in Chapter 3 of this Draft EIR, with incorporation of mitigation measures, the potential significant impacts to biological resources, cultural resources, and paleontological resources would be reduced to a less than significant level. Therefore, the proposed project would not result in any significant and unavoidable environmental impacts.

According to CEQA Guidelines Section 15126.6(b), "the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project." Alternatives to the proposed project, including alternative locations, were evaluated above in Section 5.2. Based on the analyses, the Alternative Locations, the Delta Conveyance Project Alternative, and the Commercial Use Alternative were rejected from further consideration in this Draft EIR. One alternative, the 50 Percent Reduction Alternative, was determined to be appropriate as an alternative to the proposed project and, therefore, is analyzed below.

According to Section 15126.6(e) of the CEQA Guidelines, an EIR alternatives analysis should include the analysis of a No Project Alternative to allow decision-makers to compare the impacts of approving a proposed project with the impacts in the foreseeable future of not approving that project. Therefore, as required, the No Project Alternative is analyzed below.

5.3.1 Analysis Format

In accordance with CEQA Guidelines Section 15126.6(d), alternatives are evaluated in sufficient detail to determine whether the overall environmental impacts would be less than, similar to, or greater than the corresponding impacts of the proposed project. Furthermore, alternatives are evaluated to determine whether the project objectives, identified in Section 5.1.2 above, would be substantially attained by the alternative. The evaluation of each of the alternative follows the process described below:

- A description of the alternative.
- The environmental impacts of the alternative before and after incorporation of the mitigation measures provided for each environmental topic analyzed in the EIR are described. Post-mitigation, the environmental impacts of the alternative and the proposed project are compared for each environmental topic. Where the impact of the alternative would be clearly less than the impact of the proposed project, the comparative impact is said to be "less." Where the alternative's net impact would clearly be more than the net impact of the proposed project, the comparative impact is said to be "greater." Where the impacts of the alternative and the proposed project would be roughly equivalent, the comparative impact is said to be "similar." Where the impacts of the alternative would be the same as the proposed project, the comparative impact is said to be the "same." The evaluation also documents whether an

impact of the proposed project would be avoided with implementation of the alternative or whether a mitigation measure(s) required for the proposed project would not be required for the alternative.

- The comparative analysis of the alternative's impacts with the impacts of the proposed project is followed by a discussion of the extent to which the proposed project objectives are or are not attained by the alternative.

5.3.2 No Project Alternative

Description of the Alternative

The No Project Alternative would not involve a change in the point of diversion and place of use of the surface water on the Onyx Ranch and the portions of Smith Ranch in which the RRBWSD owns one-third interest. The water currently applied to fields and pastures on the project site would continue to flow through agricultural ditches, be used for agricultural irrigation, and percolate into the ground as return flow. The fields and pastures currently irrigated with surface water on the Onyx Ranch and the Smith Ranch would not be converted to non-irrigated pasture or native vegetation. Similar to the proposed project, the Boone Field, which has non-transferrable riparian rights, would continue to be irrigated. The surface water would not remain in the South Fork of the Kern River, flow downstream to Isabella Reservoir, be released through the Isabella Dam to the Lower Kern River, or arrive at the RRBWSD's service area. The surface water would continue to be diverted and used for agricultural operations on the project site. None of the 12 shallow, low-volume wells powered by solar facilities with their associated aboveground 2,000 - 4,000 gallon water tanks for livestock water would be constructed. Existing agricultural practices at the project site would continue in the same manner and intensity as in the existing conditions.

Environmental Impacts of the Proposed Alternative

Aesthetics

Under the No Project Alternative, the irrigated fields and pastures on the Onyx Ranch and the Smith Ranch would remain irrigated agricultural crops and pastures. They would not be transitioned to non-irrigated pastures for grazing and native vegetation. Therefore, the farmland would remain green during more months of the year than conditions that would occur with the proposed project. The No Project Alternative would also avoid ground disturbance for construction of up to 12 shallow, low-volume wells powered by solar facilities and their associated 2,000 to 4,000 gallon water tanks; with the proposed project, each well site would disturb an area of 20 feet by 40 feet resulting in a maximum total disturbance of 0.22 acres if all 12 wells were constructed. The analysis in Section 3.3 Aesthetics of this Draft EIR found that, with the addition of drier fields covered with vegetation capable of surviving a natural precipitation regime as well as development of up to 12 shallow, low-volume wells powered by solar facilities and their associated water tanks for livestock water, the proposed project would result in a less than significant impact to aesthetic resources without the need for implementation of mitigation measures. Since the No Project Alternative would result in aesthetic conditions that are similar to the existing conditions and would not involve a change to the visual aesthetics on the project site, this alternative would result in less aesthetic impacts when compared to the less than significant impacts of the proposed project.

Agriculture

The No Project Alternative would result in no change to the irrigated agricultural fields and pastures on the Onyx Ranch as well as the irrigated fields and pastures on RRBWSD's one-third interest in the Smith Ranch. Under the No Project Alternative, the 680 acres of Prime Farmland and 202 acres of Unique Farmland on the Onyx Ranch would continue to be irrigated, resulting in no change to consistency with the Farmland Mapping and Monitoring Program (FMMP) designations. The analysis in Section 3.4 Agriculture of this Draft EIR found that the proposed project's reduced irrigation would no longer meet the FMMP definitions of Prime Farmland and Unique Farmlands, however, the agricultural practices would be maintained in the form of cattle grazing, resulting in a less than significant impact to farmland conversion. The No Project Alternative would result in no change to consistency with the FMMP designations for the project site and, therefore, result in less impacts when compared to the less than significant impacts of the proposed project.

Air Quality

The No Project Alternative would result in no change to the existing agricultural operations on the Onyx Ranch and the Smith Ranch. The No Project Alternative would involve use of existing agricultural equipment onsite and would not generate additional air emissions above the existing conditions that could result in an impact to air quality. The analysis in Section 3.5 Air Quality of this Draft EIR found that the proposed project would result in air emissions due to field and pasture transitions and construction of up to 12 shallow, low-volume wells powered by solar facilities; however, the emission levels would not exceed the EKAPCD thresholds of significance for ROG, NOx, CO, and SOx and the impacts of the proposed project were found to be less than significant. Additionally, the analysis of the proposed project found that, when compared to existing agricultural-generated emissions in the existing conditions (the No Project Alternative), the proposed project would result in fewer PM10 and PM2.5 emissions (Draft EIR page 3.5-33). Therefore, the No Project Alternative would result in no change to existing air quality conditions which would be a less than significant impact, but greater when compared to the less than significant impacts of the proposed project.

Biological Resources

The No Project Alternative would result in the continued management of the existing irrigated agricultural fields and pastures for cattle grazing, including the use of the irrigation ditches for the flow of surface water, on the Onyx Ranch and the Smith Ranch. As a result, the No Project Alternative would not alter the existing extent of natural communities, riparian habitats, or wetland habitats that support special-status species, including creeping rye grass turfs, red willow thickets, cattail marsh, mulefat thickets, sandbar willow thickets, and salt grass flats. The analysis in Section 3.6 Biological Resources of this Draft EIR found that the proposed project would have the potential to impact sensitive natural communities, riparian habitats, and wetland habitats (creeping rye grass turfs, red willow thickets, cattail marsh, mulefat thickets, sandbar willow thickets, and salt grass flats) that also support tri-colored blackbird, least Bell's vireo, southwestern willow flycatcher, and yellow billed cuckoo as well as the alkali mariposa lily. However, potential impacts would be reduced to less than significant levels with implementation of Mitigation Measures BIO-1 through BIO-4. The No Project Alternative would avoid the

potential impacts to the sensitive natural communities, riparian habitats, and wetland habitats and these special-status species. Therefore, the No Project Alternative would result in less potential biological resource impacts than the less than significant impacts of the proposed project with incorporation of mitigation measures.

Cultural Resources

The No Project Alternative would result in no change to existing agricultural operations, including the use of the irrigation ditches for the flow of surface water, on the Onyx Ranch and the Smith Ranch and would avoid construction of up to 12 shallow, low-volume wells that require ground disturbance and drilling between 20 to 50 feet below the ground surface. The No Project Alternative would continue the use of the existing agricultural equipment on the project site that would involve ground-disturbing activities to till the soil. These activities are part of the existing condition and would not result in an impact to cultural resources. The analysis in Section 3.7 Cultural Resources of this Draft EIR found that the proposed project, with the construction of up to 12 shallow, low-volume wells, would have the potential to result in a change in the significance of a cultural resource that could be a unique archaeological resource or human remains; however, potential impacts would be reduced to less than significant levels with implementation of Mitigation Measure CUL-1 through CUL-3. The No Project Alternative would avoid the potential impacts to unknown cultural resources that are impacts of the proposed project. Therefore, the No Project Alternative would result in less potential cultural resource impacts than the less than significant impacts of the proposed project with incorporation of mitigation measures.

Geology and Soils

The No Project Alternative would maintain the existing conditions of the irrigated agricultural fields and pastures and the agricultural operations, including the use of the irrigation ditches for the flow of surface water on the Onyx Ranch and the Smith Ranch, and would avoid construction of up to 12 shallow, low-volume wells that require ground disturbance and drilling between 20 to 50 feet below the ground surface. Therefore, the No Project Alternative would not change the existing conditions for seismic and other geologic hazards, soil conditions including erosion, or paleontological resources. The analysis in Section 3.8 Geology and Soils of this Draft EIR found the proposed project would have the potential for the finer soils along the South Fork of the Kern River to experience soil erosion as surface water diversions to the Onyx Ranch and the Smith Ranch are reduced and the flow in the South Fork of the Kern River increases. However, the analysis of the proposed project found that project-related flow rates would be within the normal range of flows that typically occur in the South Fork of the Kern River and the Lower Kern River. Additionally, the potential impacts related to seismic and geologic hazards as well as soils associated with the proposed project were determined to be less than significant. For paleontological resources, construction of the 12 shallow, low-volume wells would require drilling at depths between 20 to 50 feet below the ground surface for the proposed project and could have the potential to uncover paleontological resources. With implementation Mitigation Measure GEO-1, the potential impact would be reduced to a less than significant level. The No Project Alternative would avoid the ground disturbing activities associated with the wells for the proposed project that have the potential to uncover paleontological resources. Therefore, the No

Project Alternative would result in less geological, soil, and paleontological impacts when compared to the less than significant impacts of the proposed project with incorporation of a mitigation measure.

Greenhouse Gas Emissions

The No Project Alternative would result in continued agricultural operations on the Onyx Ranch and the Smith Ranch. The total existing emissions from agricultural activities during the existing conditions (No Project Alternative) on the project site (electric well usage and cattle transport) are equal to approximately 300 $MTCO_2e$ annually. The analysis in Section 3.9 Greenhouse Gas Emissions of this Draft EIR found that the proposed project would result in a decrease in emissions of greenhouse gas emissions when compared to the existing conditions. The vehicle miles traveled for cattle transport would be decreased by 50 percent from the existing conditions, resulting in approximately 7 $MTCO_2e$ annually compared to 14 $MTCO_2e$ under the existing conditions. The proposed project would not pump groundwater to replace the loss of irrigation water; therefore, the annual operation of the existing electric-powered wells would decrease. Overall, given the reduction in vehicle miles traveled for transporting cattle, the reduction in electricity consumption due to reduced groundwater pumping for irrigation, the fact that no additional electricity would be required to operate the proposed solar wells, and the minimal annual emissions from the new well construction, the net GHG emissions from the proposed project would be reduced relative to existing conditions (No Project Alternative). As a result, the No Project Alternative would result in greater greenhouse gas emissions which would be a less than significant impact, but greater in comparison to the less than significant impacts of the proposed project.

Hazards and Hazardous Materials

The No Project Alternative would result in continued agricultural operations on the Onyx Ranch and the Smith Ranch. The agricultural fields and pastures would continue to be irrigated with surface water and would have row crop-related activities and cattle grazing. The existing agricultural practices under the No Project Alternative are located within areas designated as high fire severity zones and very high fire severity zones; but there would be no changes to the vegetation on the project site under the No Project Alternative, and compliance with the applicable wildfire regulations and the Kern County Fire Department Fire Hazard Reduction Program would continue to address the existing fire hazards. Under the No Project Alternative, the existing potential for standing water that could attract vectors (mosquitos) would continue due to the application of water for irrigation purposes. There also would be no change to vectors such as flies and rodents as a result of the continuation of storage of supplemental feed and manure onsite. The analysis of the proposed project in Section 3.10 Hazards and Hazardous Materials of this Draft EIR, found the reduced water application on the transitioned fields would result in drier vegetation material; however, adherence to the applicable wildfire regulations and the Kern County Fire Department Fire Hazard Reduction Program would result in impacts to wildland fire hazards that would be less than significant. In terms of vectors, the proposed project would result in a decrease in the potential for standing water that could attract vectors, such as mosquitoes, or provide conditions for breeding. Additionally, the presence of supplemental feed and manure on the project site would have the potential for vectors such as flies and rodents to occur. Consistent

with the current grazing management practices used on the project site, the proposed project would be implemented in accordance with the South Fork Mosquito Abatement District requirements that address vector control. As a result, the No Project Alternative would result in similar impacts from wildland fire hazards and vector hazards when compared to the less than significant impacts of the proposed project.

Hydrology and Water Quality

The No Project Alternative would result in continued diversion of water from the South Fork of the Kern River to the Onyx Ranch and the Smith Ranch consistent with pre-1914 water rights for the parcels that make up the project site. The No Project Alternative would result in the diversion of surface water from the South Fork of the Kern River through earthen ditches where it would be applied to the agricultural fields and pastures. With the No Project Alternative, the groundwater levels beneath the project site would remain the same, fluctuating with the natural precipitation regime, and accounting for the existing groundwater pumping efforts associated with the agricultural operations. As explained in Section 3.11 Hydrology and Water Quality of the Draft EIR, the proposed project would reduce or eliminate the water application on the fields and pastures on the Onyx Ranch and the Smith Ranch. This would result in less percolation of surface water from the South Fork of the Kern River into the underlying groundwater basin, resulting in seasonal temporary fluctuations of groundwater levels by several feet and up to 15.6 feet, including for community water systems, but within the range of variability of groundwater levels of approximately 10 to 20 feet. However, overall groundwater storage in the Kern River Valley Groundwater Basin would increase with implementation of the proposed project. As a result, the groundwater impacts of the proposed project were found to be less than significant. The No Project Alternative would have no additional decrease in groundwater levels relative to the existing conditions and would have less impacts when compared to the less than significant impacts of the proposed project. The other hydrology and water quality impacts related to erosion and changes in drainage patterns as a result of the No Project Alternative would result in less impacts in comparison to the less than significant impacts of the proposed project.

Land Use and Planning

The No Project Alternative would result in the continued agricultural land use on the Onyx Ranch and the Smith Ranch. The analysis in Section 3.12 Land Use and Planning of this Draft EIR found that the continued agricultural operations on the Onyx Ranch and the Smith Ranch with the proposed project would be consistent with the applicable land uses, the plans, and policies including the Kern River Valley Specific Plan, Kern County General Plan, Kern County Zoning Code, and the Kern Groundwater Authority's Groundwater Sustainability Plan, resulting in a less than significant impact. As a result, the No Project Alternative would result in similar land use impacts when compared to the less than significant impacts of the proposed project.

Population and Employment

The No Project Alternative would result in continued agricultural operations on the Onyx Ranch and the Smith Ranch. Approximately 14 non-RRBWSD employees currently work on the Onyx Ranch and would continue to do so under the No Project Alternative. The No Project Alternative would not affect the recreation-related employment in the Kern River Valley. As described in

Section 3.13 Population and Employment of this Draft EIR, the proposed project's change in agricultural practices may result in approximately two fewer employees on the Onyx Ranch. This potential reduction in employment would reduce the percentage of the civilian population employed in the "agriculture, forestry, fishing and mining" industry in the Kern River Valley from 4.8 percent to 4.7 percent, which would not represent a substantial change to agriculture-related employment in the Kern River Valley and the surrounding region, or result in secondary environmental impacts. Section 3.13 found that the proposed project would result no impact to recreation-related employment in the Kern River Valley or result in secondary environmental impacts. As a result, the No Project Alternative would result in similar impacts to employment when compared to the less than significant impacts of the proposed project.

Tribal Cultural Resources

The No Project Alternative would result in no change to existing agricultural operations on the Onyx Ranch and the Smith Ranch and would avoid construction of up to 12 shallow, low-volume wells powered by solar that require ground disturbance and drilling between 20 to 50 feet below the ground surface. The No Project Alternative would involve use of existing agricultural equipment onsite that would involve ground-disturbing activities to till the soil. These activities are part of the existing condition and would not result in an impact to tribal cultural resources. The analysis in Section 3.14 Tribal Cultural Resources of this Draft EIR found that no existing tribal cultural resources are known to exist on the project site. Should there be an inadvertent discovery of a tribal cultural resource with the No Project Alternative as well as the proposed project, the RRBWSD must follow the existing regulatory requirements of AB 52. Therefore, the proposed project would result in less than significant impacts, and no mitigation measures would be required. The No Project Alternative would have similar potential impacts to unknown tribal cultural resources when compared to the less than significant impacts of the proposed project.

Utilities, Service Systems, and Energy

The No Project Alternative would result in the continued use of the same water supply systems as currently implemented on the project site. In addition, with the No Project Alternative, the existing wells on the project site would continue to be used to pump water for irrigation purposes which would result in continued use of electricity to operate the wells. As analyzed in Section 3.15 Utilities, Service Systems, and Energy of this Draft EIR, the proposed project would not be anticipated to prevent any existing groundwater wells in the South Fork Valley or Hydrological Study Area from accessing groundwater or otherwise affect pump performance. The proposed project's shallow, low-volume wells powered by solar facilities would not draw power from the electrical grid and, therefore, would result in a less than significant impacts related to energy consumption. As a result, the No Project Alternative would result in similar impacts related to utilities, service systems, and energy when compared to the less than significant impacts of the proposed project.

Ability to Meet Project Objectives

The No Project Alternative would meet none of the project objectives. The beneficial use of water rights associated with the Onyx Ranch and the RRBWD's one-third interest in the Smith Ranch would not be maximized. This alternative would not meet the project objective of reducing

dependence upon imported water from the Sacramento/San Joaquin Delta by providing a cost-effective, long-term method to replace a portion of the RRBWSD's contracted SWP water supply that has become unreliable due to environmental restrictions in the Delta. The objective to increase surface water flow on the South Fork of the Kern River within habitat areas also would not be met.

Other project objectives pertaining to the inclusion of project elements and project characteristics that avoid unreasonable effects to biological resources, the economy, and overall environment would not be met since the proposed project would not be implemented under the No Project Alternative.

Furthermore, continuing the existing agricultural operations on the Onyx and the Smith Ranch under the No Project Alternative is not economically feasible for the RRBWSD. Continuing the agricultural operations on the project site alone would not be financially sustainable for the RRBWSD as the payoff of the debt service associated with the property acquisition is required. The current lease income for the Onyx Ranch is significantly less than the total operating expenses including capital outlays, maintenance, utilities, and wages and benefits. If the proposed project would not be implemented, the RRBWSD would be obligated to find another use for the project site. Therefore, the implementation of the No Project Alternative is not feasible.

5.3.3 50 Percent Diversion Alternative

Description of the Alternative

The 50 Percent Diversion Alternative would involve the diversion of 50 percent less surface water from the South Fork of the Kern River to the RRBWSD's service area than with the proposed project. The amount of surface water the proposed project would allow to remain in the South Fork of the Kern River for downstream diversion to RRBWSD's service area would be variable based on the annual water flow in the South Fork of the Kern River. The 50 Percent Diversion Alternative assumes the water diversion to RRBWSD's service area would be capped at approximately half. This alternative assumes that the 50 percent reduction in diversion of surface water to RRBWSD's service area would result in irrigation of approximately 50 percent of the agricultural fields and pastures on the Onyx Ranch while the remaining 50 percent of the fields and pastures on the Onyx Ranch would be transitioned to non-irrigated pastures for grazing and native vegetation. This alternative also would result in a 16.5 percent reduction in irrigated acres at Smith Ranch, and similar to the proposed project, no substantial changes to agricultural practices at the Smith Ranch would be anticipated. Additionally, this alterative would require the installation of, on an as needed basis, up to 6 shallow, low-volume wells powered by solar facilities, with their associated aboveground tanks, for livestock water. Some or all of the same ditches on the project site would be used for the 50 Percent Diversion Alternative, but 50 percent more surface water would be diverted to the ditches on the project site when compared to the proposed project.

Environmental Impacts of the Proposed Alternative

Aesthetics

The 50 Percent Diversion Alternative would involve transition of approximately half of the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and native vegetation. The remaining 50 percent of the project site would continue as irrigated agricultural crops and pastures. Therefore, approximately half of the farmland would remain green during more months of the year, while the other half would constitute drier conditions similar to the proposed project. The 50 Percent Diversion Alternative would involve construction of up to 6 shallow, low-volume wells powered by solar facilities and their associated water tanks for livestock water; each well site would disturb an area of 20 feet by 40 feet resulting in a total disturbance of up to 0.11 of an acre for all 6 wells. The analysis in Section 3.3 Aesthetics of this Draft EIR found that, with the addition of drier fields covered with vegetation capable of surviving a natural precipitation regime as well as development of up to 12 shallow, low-volume wells powered by solar facilities and their associated water tanks for livestock water, the proposed project would result in a less than significant impact to aesthetic resources. The 50 Percent Diversion Alternative would result in similar aesthetic conditions to the proposed project, resulting in drier fields on the project site, which would result in a change to the visual aesthetics of the area, and approximately 0.11 of an acre of disturbance for construction of the 6 shallow, low-volume wells. However, the intensity would be reduced when compared to the proposed project since only 50 percent of the project site would be a drier condition visually. Nevertheless, aesthetic impacts for the 50 Percent Diversion Alternative would result in less than significant impacts, similar to the proposed project. Therefore, the 50 Percent Diversion Alternative would result in similar aesthetic impacts when compared to the less than significant impacts of the proposed project.

Agriculture

The 50 Percent Diversion Alternative would involve transition of approximately half of the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and native vegetation. The remaining 50 percent of the project site would continue as irrigated agricultural crops and pastures. No substantial changes to agricultural practices at the Smith Ranch would be anticipated. Under the 50 Percent Diversion Alternative, 340 acres of Prime Farmland and 101 acres of Unique Farmland on the Onyx Ranch would continue to be irrigated, while 340 acres of Prime Farmland and 101 acres of Unique Farmland on the Onyx Ranch would no longer be irrigated in the transition to non-irrigated pastures for grazing and native vegetation. The non-irrigated land would result in a change to consistency with the Farmland Mapping and Monitoring Program (FMMP) designations. The analysis in Section 3.4 Agriculture of this Draft EIR found that the proposed project's reduced irrigation would no longer meet the FMMP definitions on 680 acres of Prime Farmland and 202 acres of Unique Farmland on the Onyx Ranch; however, the agricultural practices would be maintained in the form of cattle grazing, resulting in a less than significant impact to farmland conversion. The 50 Percent Diversion Alternative would result in a change in the consistency with the FMMP designations for 340 acres of Prime Farmland and 101 acres of Unique Farmland on the Onyx Ranch portion of the project site and, similar to the proposed project, would no longer meet the FMMP definitions of Prime Farmland and Unique Farmland. However, similar to the proposed project, the agricultural

practices under the 50 Percent Diversion Alternative would be maintained on the 50 percent of the project site without irrigation in the form of cattle grazing, resulting in a less than significant impact to farmland conversion. Therefore, agricultural impacts for the 50 Percent Diversion Alternative would result in less than significant impacts to agriculture. Therefore, 50 Percent Diversion Alternative would result in similar agricultural impacts when compared to the less than significant impacts of the proposed project.

Air Quality

The 50 Percent Diversion Alternative would involve transition of approximately half the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and native vegetation. The remaining 50 percent of the project site would continue as irrigated agricultural crops and pastures. No substantial changes to agricultural practices at the Smith Ranch would be anticipated. Additionally, this alternative would result in the construction of up to 6 shallow, low-volume wells powered by solar facilities and their associated aboveground water tanks. These activities would generate an increase in air emissions for ROG, NOx, CO, and Sox as 50 percent of the project site would transition and the wells are constructed. The 50 percent of the project site that would remain irrigated and cultivated would result in continued generation of PM10 and PM2.5 emissions from operation of existing agricultural equipment and emissions from the electric wells that would pump groundwater for irrigation. The analysis in Section 3.5 Air Quality of this Draft EIR found that the proposed project would result in an increase in emissions due to field and pasture transitions and the construction of up to 12 shallow, low-volume wells powered by solar facilities, although emission levels would not exceed the EKAPCD thresholds of significance for ROG, NOx, CO, and SOx and the impacts of the proposed project would be less than significant. Additionally, the analysis of the proposed project found that, when compared to existing agricultural-generated emissions in the existing conditions, the proposed project would result in fewer PM10 and PM2.5 emissions (Draft EIR page 3.5-33). With the reduction in activity that would generate air quality emissions, the 50 Percent Diversion Alternative would result in less air quality impacts for ROG, NOx, CO, and SOx when compared to the proposed project. Additionally, the 50 Percent Diversion Alternative would have less PM10 and PM2.5 emissions than the proposed project because half of the project site would continue with the existing agricultural practices including irrigation of agricultural crops and pastures. Although overall the 50 Percent Diversion Alternative would emit fewer emissions than the proposed project and a less than significant impact would occur. Therefore, the 50 Percent Diversion Alternative would result in similar air quality impacts when compared to the less than significant impacts of the proposed project.

Biological Resources

The 50 Percent Diversion Alternative would involve transition of approximately half the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and native vegetation The remaining 50 percent of the project site would continue as irrigated agricultural crops and pastures and the continued management of existing agricultural irrigated fields and pastures for cattle grazing, including the use of the irrigation ditches, on the remaining 50 percent of the Onyx Ranch. No substantial changes to agricultural practices at the Smith Ranch would be anticipated. The analysis in Section 3.6 Biological Resources of this Draft EIR

found that the proposed project would have the potential to impact sensitive natural communities, riparian habitats, and wetland habitats (creeping rye grass turfs, red willow thickets, cattail marsh, mulefat thickets, sandbar willow thickets, and salt grass flats) that also support tri-colored blackbird, least Bell's vireo, southwestern willow flycatcher, yellow billed cuckoo, as well as the alkali mariposa lily. However, the potential impacts would be reduced to less than significant levels with implementation of Mitigation Measures BIO-1 through BIO-4. The 50 Percent Diversion Alternative similarly could alter the existing extent of sensitive natural communities, riparian habitats, and wetland habitats that also support special-status species; however, the area affected may be lessened because fewer fields and pastures would be transitioned. Depending on the portion of the project site that would remain irrigated, there is the potential for the 50 Percent Diversion Alternative to result in fewer impacts to the sensitive natural communities, riparian habitats, and wetland habitats and the special-status species they support. However, the 50 Percent Diversion Alternative would be required to implement Mitigation Measures BIO-1 through BIO-4, similar to the proposed project. Therefore, the 50 Percent Diversion Alternative would have less potential impacts to biological resources with incorporation of mitigation measures when compared to the less than significant impacts of the proposed project with incorporation of mitigation measures.

Cultural Resources

The 50 Percent Diversion Alternative would involve transition of approximately half the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and native vegetation. The remaining 50 percent of the project site would continue as irrigated agricultural crops and pastures. No substantial changes to agricultural practices at the Smith Ranch would be anticipated. The 50 Percent Diversion Alternative would result in the continued use of existing agricultural equipment that would involve ground-disturbing activities to till the soil for agricultural purposes. Additionally, this alternative would involve the installation of up to 6 shallow, low-volume wells with their associated aboveground water tanks that require ground disturbance and drilling between 20 to 50 feet below the ground surface. The analysis in Section 3.7 Cultural Resources of this Draft EIR found that the proposed project with the construction of up to 12 shallow, low-volume wells would have the potential to result in a change in the significance of a cultural resource that could be a unique archaeological resource, resulting in a potential significant impact to archeological resources. However, the potential significant impacts of the proposed project would be reduced to less than significant level with incorporation of Mitigation Measure CUL-1 and CUL-2. With the 50 Percent Diversion Alternative, the installation of up to 6 shallow, low-volume wells would also have the potential to result in significant impacts with ground disturbing activities and drilling for wells. With incorporation of Mitigation Measure CUL-1 and CUL-2, the significant impacts of this alternative would be reduced to a significant level. The analysis in Section 3.7 Cultural Resources of this Draft EIR found that the proposed project would have the potential to encounter unknown human remains during ground disturbance, resulting in a potential significant impact. The incorporation of Mitigation Measure CUL-3 would reduce this significant impact to a less than significant level. The 50 Percent Diversion Alternative would result in the same potential impacts to cultural resources as the proposed project, although the intensity would be reduced when compared to the proposed project since only 50 percent of the ground disturbance activities would occur.

Therefore, the cultural resource impacts of the 50 Percent Diversion Alternative would result in similar less than significant impacts with incorporation of mitigation measures when compared to the less than significant impacts of the proposed project with incorporation of mitigation measures.

Geology and Soils

The 50 Percent Diversion Alternative would involve transition of approximately half the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and native vegetation. The remaining 50 percent of the project site would continue as irrigated agricultural crops and pastures. No substantial changes to agricultural practices at the Smith Ranch would be anticipated. The 50 Percent Diversion Alternative would also involve the installation of up to 6 shallow, low-volume wells with their associated water tanks resulting in ground disturbance and drilling between 20 to 50 feet below the ground surface. The 50 Percent Diversion Alternative would not change the existing conditions related to seismic hazards, geologic hazards, or soil conditions similar to the proposed project. However, this alternative has the potential to cause impacts related to soil erosion and paleontological resources similar to the proposed project. The analysis in Section 3.8 Geology and Soils of this Draft EIR found the proposed project would have the potential for the finer soils along the South Fork of the Kern River to experience soil erosion as surface water diversions to the Onyx Ranch and the Smith Ranch are reduced or eliminated. However, the analysis of the proposed project found that project-related flow rates would be within the normal range of flows that typically occur in the South Fork of the Kern River and the Lower Kern River. Additionally, the potential impacts related to seismic and geologic hazards as well as soils associated with the proposed project were determined to be less than significant. Related to paleontological resources, the proposed project would result in the construction of the up to 12 shallow, low-volume wells drilled at depths between 20 to 50 feet below the ground surface that could have the potential to uncover paleontological resources, resulting in a significant impact. With implementation of Mitigation Measure GEO-1, the significant impact would be reduced to a less than significant level. The 50 Percent Diversion Alternative would reduce some of the proposed project's impacts to erosion to the finer soils along the South Fork of the Kern River as surface water application to the Onyx Ranch and the Smith Ranch would reduce the amount of surface water that would remain in the River. The 50 Percent Diversion Alternative would involve a reduction in the number of new wells from 12 to 6 and a corresponding reduction in the potential for well installation to cause ground disturbance and drilling that could result in a significant impact to paleontological resources. With the 50 Percent Diversion Alternative, incorporation of Mitigation Measure GEO-1 would reduce this significant impact to less than significant impact level. Therefore, the 50 Percent Diversion Alternative would have similar less than significant impacts to geology and soils with incorporation of a mitigation measure in comparison to the less than significant impact of the proposed project with incorporation of a mitigation measure.

Greenhouse Gas Emissions

The 50 Percent Diversion Alternative would involve transition of approximately half the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and native vegetation. The remaining 50 percent of the project site would continue as irrigated

agricultural crops and pastures. No substantial changes to agricultural practices at the Smith Ranch would be anticipated. The 50 Percent Diversion Alternative would also involve the installation of up to 6 shallow, low-volume wells with their associated aboveground water tanks that require ground disturbance and drilling between 20 to 50 feet below the ground surface. The 50 Percent Diversion Alternative would result in greenhouse gas emissions from use of existing agricultural equipment and the use of construction-related equipment for the well installation and drilling. The analysis in Section 3.9 Greenhouse Gas Emissions of this Draft EIR found that the proposed project would result in a decrease in greenhouse gas emissions when compared to the existing conditions. The vehicle miles traveled for cattle transport would be decreased from the existing conditions, resulting in approximately 7 $MTCO_2e$ annually compared to 14 $MTCO_2e$ under the existing conditions. The proposed project would not pump groundwater to replace the loss of irrigation water; therefore, the annual operation of the existing electric-powered wells would decrease. The 50 Percent Diversion Alternative would result in greater cattle transport than the proposed project because half of the project site would remain as irrigated agricultural crops and pasture, which would result between 7 to 14 $MTCO_2e$ annually. The 50 Percent Diversion Alternative would also result in electricity consumption due to groundwater pumping for irrigation on the 50 percent of the project site that would remain irrigated agricultural fields and pastures. As a result, net greenhouse gas emissions from the 50 Percent Diversion Alternative would be greater than for the proposed project. Nevertheless, the 50 Percent Diversion Alternative would result in greenhouse gas emissions that would result in a less than significant impact. Therefore, the 50 Percent Diversion Alternative would result in similar greenhouse gas emission impacts when compared to the less than significant impacts of the proposed project.

Hazards and Hazardous Materials

The 50 Percent Diversion Alternative would involve transition of approximately half the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and native vegetation. The remaining 50 percent of the project site would remain irrigated agricultural crops and pastures. No substantial changes to agricultural practices at the Smith Ranch would be anticipated. The 50 Percent Diversion Alternative and the proposed project would be located within areas designated as high fire severity zones and very high fire severity zones. The analysis of the proposed project in Section 3.10 Hazards and Hazardous Materials of this Draft EIR found the reduced water application on the transitioned fields would result in drier vegetation material; however, adherence to the applicable wildfire regulations and the Kern County Fire Department Fire Hazard Reduction Program would result in the wildland fire hazards that would a be less than significant impact. In terms of vectors, the Section 3.10 concluded that the proposed project would result in a decrease in the potential for standing water that could attract vectors, such as mosquitoes, or provide conditions for breeding. Additionally, the presence of supplemental feed and manure on the project site would have the potential for vectors such as flies and rodents to occur. Consistent with the current grazing management practices used on the project site, the proposed project would be implemented in accordance with the South Fork Mosquito Abatement District requirements that address vector control. As a result, the proposed project's impacts related to vectors would be less than significant. The 50 Percent Diversion Alternative would result in irrigation of 50 percent of the project site which would reduce the risk of wildland fire from dry vegetation material; however, with adherence to the applicable wildfire regulations and

the Kern County Fire Department Fire Hazard Reduction Program, the potential impacts related to wildland fire hazards would be less than significant. Additionally, this alternative would result in the application of water for irrigation purposes on 50 percent of the project site that would result in more potential incidents of standing water that could attract vectors (mosquitos) than the proposed project. The 50 Percent Diversion Alternative would result the storage of feed and manure associated livestock similar to the proposed project. Compliance with the requirements of the South Fork Mosquito Abatement District would reduce the potential impacts of this alternative related to vectors to less than significant. Therefore, the 50 Percent Diversion Alternative would result in similar hazards and hazardous material impacts when compared to the less than significant impacts of the proposed project.

Hydrology and Water Quality

The 50 Percent Diversion Alternative would result in the diversion of 50 percent of the surface water applied to the project site for irrigation in the existing conditions and leave the other 50 percent of the surface water in the South Fork of the Kern River for delivery to the RRWBSD service area. This would involve transition of approximately half the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and native vegetation. The remaining 50 percent of the project site would remain irrigated agricultural crops and pastures. No substantial changes to agricultural practices at the Smith Ranch would be anticipated. The 50 Percent Diversion Alternative would result in 50 percent reduction in surface water flowing through the existing agricultural ditches for application to the irrigated agricultural fields and pastures on the project site. As discussed in Section 3.11 Hydrology and Water Quality of this Draft EIR, the proposed project would result in a net increase in groundwater storage in the Kern River Valley Groundwater Basin. The implementation of the proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume. Although there would be seasonal localized fluctuations of the groundwater table, there would be no adverse effects to the ability of nearby wells, including those of the 13 community water systems in the South Fork Valley, to pump groundwater. Therefore, the impacts of the proposed project relative to groundwater supplies and recharge in the Kern River Groundwater Basin would be less than significant. The 50 Percent Diversion Alternative likely would result in smaller fluctuations of localized groundwater levels than the proposed project since 50 percent more water would be applied to irrigated agricultural fields and pastures and percolate into the groundwater basin. However, the overall increases in groundwater storage would be less under the 50 Percent Diversion Alternative compared to the proposed project and would have similar less than significant impacts of the proposed project. The other hydrology and water quality impacts related to erosion and changes in drainage patterns as a result of the 50 Percent Diversion Alternative would be similar to the less than significant impacts of the proposed project. Therefore, the 50 Percent Diversion Alternative would result in similar hydrology and water quality impacts when compared to the less than significant impacts of the proposed project.

Land Use and Planning

The 50 Percent Diversion Alternative would involve transition of approximately half the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and

native vegetation. The remaining 50 percent of the project site would remain irrigated agricultural crops and pastures. No substantial changes to agricultural practices at the Smith Ranch would be anticipated. The 50 Percent Diversion Alternative would involve continued agricultural uses on the entire project site. The analysis in Section 3.12 Land Use and Planning of this Draft EIR found that the continued agricultural operations on the Onyx Ranch and the Smith Ranch with the proposed project would be consistent with the applicable land uses, the plans, and policies including the Kern River Valley Specific Plan, Kern County General Plan, Kern County Zoning Code, and the Kern Groundwater Authority's Groundwater Sustainability Plan, resulting in a less than significant impact. The 50 Percent Diversion Alternative would similarly be consistent with all applicable plans because agricultural practices would continue on the project site. Therefore, the 50 Percent Diversion Alternative would result in similar land use impacts when compared to the less than significant impacts of the proposed project.

Population and Employment

The 50 Percent Diversion Alternative would involve transition of approximately half the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and native vegetation. The remaining 50 percent of the project site would remain irrigated agricultural crops and pastures. No substantial changes to agricultural practices at the Smith Ranch would be anticipated. Approximately 14 non-RRBWSD employees currently work on the Onyx Ranch and would continue to do so under the 50 Percent Diversion Alternative. As described in Section 3.13 Population and Employment of this Draft EIR, the proposed project's change in agricultural practices may result in approximately two fewer employees on the Onyx Ranch. This potential reduction in employment would reduce the percentage of the civilian population employed in the "agriculture, forestry, fishing and mining" industry in the Kern River Valley from 4.8 percent to 4.7 percent, which would not represent a substantial change to agriculture-related employment in the Kern River Valley and the surrounding region, or result in secondary environmental impacts. Additionally, Section 3.13 concluded that the proposed project would not have an adverse effect on the recreation-related employment in the Kern River Valley. Therefore, the proposed project would result in less than significant impacts to agriculture-related employment and recreation-related employment and would not result in secondary environmental impacts. The 50 Percent Diversion Alternative could be expected to result in a similar reduction in employees on the proposed project site, resulting in a less than significant impact to agriculture-related employment. Additionally, this alternative would not result in adverse effects on recreation-related employment in the Kern River Valley, resulting in a less than significant impact. Therefore, the 50 Percent Diversion Alternative would result in similar population and employment impacts when compared to the less than significant impacts of the proposed project.

Tribal Cultural Resources

The 50 Percent Diversion Alternative would involve transition of approximately half the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and native vegetation. The remaining 50 percent of the project site would remain irrigated agricultural crops and pastures. No substantial changes to agricultural practices at the Smith Ranch would be anticipated. The 50 Percent Diversion Alternative would involve continued use of existing agricultural equipment to till the soil for agricultural purposes. Additionally, this alternative

would involve the installation of up to 6 shallow, low-volume wells with their associated aboveground water tanks that require ground disturbance and drilling between 20 to 50 feet below the ground surface. The analysis in Section 3.14 Tribal Cultural Resources of this Draft EIR found that no existing tribal cultural resources are known to exist on the project site. Should there be an inadvertent discovery of a tribal cultural resource with implementation of the proposed project, the RRBWSD must follow the existing regulatory requirements of AB 52. The 50 Percent Diversion Alternative would result in the same potential for impacts to tribal cultural resources as the proposed project, although the intensity would be reduced when compared to the proposed project since only 50 percent of the project site would be disturbed and 50 percent of the wells would be implemented. Nevertheless, the potential for tribal cultural resource impacts for the 50 Percent Diversion Alternative would be less than significant impact. Therefore, the 50 Percent Diversion Alternative would result in similar tribal cultural resources impacts when compared to the less than significant impacts of the proposed project.

Utilities, Service Systems, and Energy

The 50 Percent Diversion Alternative would involve transition of approximately half the irrigated agricultural fields and pastures on the Onyx Ranch to non-irrigated pastures for grazing and native vegetation. The remaining 50 percent of the project site would remain irrigated agricultural crops and pastures. No substantial changes to agricultural practices at the Smith Ranch would be anticipated. This would result in use of 50 percent of the existing electric-powered wells or 50 percent usage of the wells on the project site for irrigation purposes. Additionally, this alternative would result in the installation of up to 6 shallow, low-volume wells powered by solar facilities. The 50 Percent Diversion Alternative would result in additional percolation of surface water that could result in increases in groundwater levels compared to the existing conditions. As analyzed in Section 3.15 Utilities, Service Systems, and Energy of this Draft EIR, the proposed project would not be anticipated to prevent any existing groundwater wells in the South Fork Valley or Hydrological Study Area from accessing groundwater or otherwise affect pump performance. Therefore, the proposed project would result in less than significant impacts. Section 3.15 concluded that the proposed project's up to 12 shallow, low-volume wells powered by solar facilities would not draw power from the electrical grid and, therefore, would result in no impact related to energy consumption. The 50 Percent Diversion Alternative would result in an increase in groundwater levels that would result in a less than significant impact on existing groundwater levels and, therefore, groundwater wells. The 50 Percent Diversion Alternative would result in use of up to 6 solar wells which would reduce the reliance on the electrical grid; however, the alternative would continue the use of existing electric-powered wells for irrigation purposes which would be more electricity used compared to the proposed project. Therefore, the 50 Percent Diversion Alternative would result in similar impacts to utilities, service systems, and energy when compared to the less than significant impacts of the proposed project.

Ability to Meet Project Objectives

The 50 Percent Diversion Alternative would meet some, but not all of the project objectives. This alternative would not meet the objective to maximize the beneficial use of water rights associated with the Onyx Ranch and the Smith Ranch in Kern County. By reducing the amount of surface water that would remain in the South Fork of the Kern River and ultimately be diverted to the

RRBWSD's service area with the 50 Percent Diversion Alternative, this alternative would not meet the project objective to reduce dependence upon imported water from the Sacramento/San Joaquin Delta and provide a cost-effective, long-term method to replace a portion of the RRBWSD's contracted SWP water supply that has become unreliable due to environmental restrictions in the Delta. This alternative would not meet the project objective to maximize the groundwater replenishment in the Kern County Sub-basin within the RRBWSD service area and assist the RRBWSD to meet the project objective of meeting its sustainability goals under SGMA. Other project objectives would generally be met.

Furthermore, continuing only 50 percent of the existing agricultural operations on the Onyx Ranch and reducing irrigation by 16.5 percent on the Smith Ranch under the 50 Percent Diversion Alternative is not economically feasible for the RRBWSD. Continuing only 50 percent of the agricultural operations on the project site would not be financially sustainable for the RRBWSD due to the payoff of the debt service associated with the property acquisition. The current lease income from the tenants on the Onyx Ranch is less than the total operating expenses including capital outlays, maintenance, utilities, and wages and benefits. If the proposed project would not be implemented, the RRBWSD would be obligated to find another use for the project site. Therefore, the implementation of the 50 Percent Diversion Alternative is not feasible.

5.4 Environmentally Superior Alternative

CEQA requires that a Draft EIR identify the environmentally superior alternative of a project other than the No Project Alternative (CEQA Guidelines Section 15126.6(e)(2)). One of the primary purposes of the alternatives analysis is to identify project alternatives that may avoid or substantially lessen significant project impacts (CEQA Guidelines Section 15126.6). With incorporation of mitigation measures, the proposed project would result in no significant and unavoidable impacts.

As stated above and summarized below in Table 5-2, the No Project Alternative would result in similar or less impacts in comparison to the impacts of the proposed project for all but two of the environmental topics. The No Project Alternative would continue the existing agricultural practices on the project site and would therefore result in greater air quality emissions and greenhouse emissions relative to the proposed project. Given the reduction in vehicle miles traveled for transporting cattle, the reduction in electricity consumption due to reduced groundwater pumping for irrigation, the fact that no additional electricity would be required to operate the proposed solar wells, and the minimal annual emissions from well construction, the net air quality and greenhouse gas emissions from the proposed project would be reduced relative to existing conditions (No Project Alternative). Additionally, the No Project Alternative would not meet any of the project objectives. Refer to the discussion of the alternative's ability to meet the project objectives provided above.

The 50 Percent Diversion Alternative was reviewed in accordance with the CEQA Guidelines requirement to identify an environmentally superior alternative other than the No Project Alternative. The 50 Percent Diversion Alternative would have similar impacts to the proposed project for all environmental topics except for biological resources. Depending on the portion of the project site that would remain irrigated, there is potential for the 50 Percent Diversion

Alternative to result in fewer impacts to sensitive natural communities and riparian habitats, and the special-status species they support. Mitigation measures for biological resources would be required for the 50 Percent Diversion Alternative and, therefore, the level of significance determination would remain the same as for the proposed project. However, the 50 Percent Diversion Alternative has the potential to substantially lessen the amount of acres of sensitive natural communities and riparian habitats that would be impacted by the proposed project. In terms of objectives, by modifying the amount of surface water diverted to the RRBWSD's service area, the 50 Percent Diversion Alternative would meet some, but not all of the project objectives. Refer to the discussion of the alternative's ability to meet the project objectives provided above.

TABLE 5-2
SUMMARY OF ALTERNATIVES ANALYSIS
IMPACTS AS COMPARED TO THE PROPOSED PROJECT

Environmental Resource	Proposed Project	No Project Alternative	50 Percent Diversion Alternative
Meets All Project Objectives?	Yes	No	No
Environmental Impacts			
Aesthetics	LTS	—	0
Agriculture	LTS	—	0
Air Quality	LTS	—	0
Biological Resources	LTSM	—	—
Cultural Resources	LTSM	—	0
Geology and Soils	LTSM	—	0
Greenhouse Gas Emissions	LTS	+	0
Hazards and Hazardous Materials	LTS	0	0
Hydrology and Water Quality	LTS	—	0
Land Use and Planning	LTS	0	0
Population and Employment	LTS	0	0
Tribal Cultural Resources	LTS	—	0
Utilities, Service Systems, and Energy	LTS	0	0

NOTES:
LTS = Less than Significant
LTSM = Less than Significant with Mitigation
"0" represents a similar impact
"+" represents a greater impact
"—" represents a less impact

CEQA requires that an EIR identify the environmentally superior alternative of a project other than the No Project Alternative (CEQA Guidelines Section 15126.6(e)(2)). While the proposed project would result in potentially significant impacts, with the incorporation of mitigation measures, no significant and unavoidable impacts would occur. In considering the 50 Percent Diversion Alternative relative to the proposed project, the 50 Percent Diversion Alternative would result in similar impacts to the proposed project for all environmental topics except for

biological resources. Although the 50 Percent Diversion Alternative would reduce the magnitude of the potential significant impacts to biological resources, with incorporation of Mitigation Measures BIO-1 through BIO-4, the potential impacts of the 50 Percent Diversion Alternative and the proposed project would be reduced to a less than significant level. Overall, the 50 Percent Diversion Alternative would not avoid any impacts or mitigation measures associated with the proposed project and would not meet all of the project objectives.

5.5 References

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CHAPTER 6
Report Preparers

The purpose of this chapter is to meet requirements described in Section 15129 of the CEQA Guidelines, Organizations and Persons Consulted, which states the following regarding EIRs prepared pursuant to CEQA:

> *"The EIR shall identify all federal, state, or local agencies, other organizations, and private individuals consulted in preparing the draft EIR, and the persons, firm, or agency preparing the draft EIR, by contract or other authorization (Authority Cited: Section 21083, Public Resources Code; Reference: Sections 21104 and 21153, Public Resources Code)."*

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